University of Tsukuba
筑波大学

TSUKUBA STANDARDs

for Graduate Schools and Programs

TSUKUBA
STANDARDs

Tsukuba Standards for Graduate Schools and Programs

Co-creating New Knowledge and Unique Human Resources at TSUKUBA, a Hub of Knowledge

Based on our founding philosophy, we clarify our educational framework, including educational goals and methods for achieving them in our Graduate Schools and Programs and measures for improvement of educational content, and widely publicize it to society as the educational declaration of the University, which aims to guarantee and continuously improve the quality of degrees.

Concept

The University of Tsukuba aims to establish free exchange and close relationships in both basic and applied sciences with educational and research organizations and academic communities in Japan and overseas. While developing these relationships, we intend to pursue education and research to cultivate men and women with creative intelligence and rich human qualities.

The University of Tsukuba endeavors to contribute to the progress of science and culture. Formerly, Japanese universities tended to remain cloistered in their own narrow, specialized fields, creating polarization, stagnation in education and research and alienation from their communities.

The University of Tsukuba has decided to function as a university which is open to all within and outside of Japan. Toward this end, the university has made it its goal to develop an organization better suiting the functions and administration with a new concept of education and research highly international in character, rich in diversity and flexibility and capable of dealing sensitively with the changes occurring in contemporary society.

To realize this, it has vested in its staff and administrative authorities the powers necessary to carry out these responsibilities.

Code of Ethics on Education at the University of Tsukuba

The University of Tsukuba aims to be an open university in every sense. With its proactive initiatives to create a flexible education and research structure as well as a university system for the needs of the next generation, the University of Tsukuba is now a frontrunner of university reform in Japan. Universities are expected to act as bases of knowledge that hold the key to balanced development of human society. As a comprehensive university, the University of Tsukuba is capable of developing a wide range of educational research dealing with all aspects of knowledge. By setting "originality" and "independence" as the core educational concepts, our goal is to make students take the initiative for solving problems in the world. We established the "University of Tsukuba Education Standards (hereafter, "Tsukuba Standards")",*1 as a guideline in order to achieve the goal. Faculty members need to comply with the following code of conduct*2 to meet the guideline.

1. Faculty members strive to develop every student's individuality and talents, and endow students with a rich sense of humanity and creative intellect as well as work with them to grow the shared base of knowledge.
2. Faculty members strive to respect student identity, promote their personal development and serve their best interests.
3. Faculty members strive to continuously improve the educational curriculum and methodology from general education to specialized education while supporting students' self-study.
4. Faculty members strive to clearly set a study guideline and grade evaluation system as well as adhere to a fair grade evaluation based on the study guideline.
5. Faculty members strive to consult with students sincerely and closely, and be open to their ideas and comments while keeping their personal information confidential.

NOTE:

*1: The Tsukuba Standards articulate the educational goals of the university based on its founding principles, and the path to achieve them. They consist of the following two divisions: Undergraduate Education and Graduate Education.

*2: Among this code of conduct, Article 1 defines the guideline for the whole, Article 2 ensures to respect student identity and protect the best interests of the students, Articles 3 and 4 set the obligation for continuous educational improvement, and Article 5 ensures to protect the personal information of students.

The Meaning of Degrees to be conferred by University of Tsukuba

University of Tsukuba is committed to fostering autonomous learning, cultivating ethical sensibilities that respect diverse personalities and cultures, and enabling every student to realize their unique personality and abilities.

Grounded in a broad intellectual foundation, information literacy, and both creative and critical thinking, our students learn to build trust across differences through dialogue, to act with integrity and sincerity toward the sustainable development of society, to cherish both humanity and nature, and to cultivate rich sensibilities through engagement with the arts and sports.

Building upon these foundations,

- The **Bachelor's degree** is conferred upon those who have demonstrated the ability to investigate and analyze data to understand global trends and the essence of contemporary challenges, and who possess the **creativity grounded in solid fundamentals and flexible thinking**, together with a **broad understanding of disciplines beyond their own specializations**. Degree recipients are recognized as individuals who continually renew their expertise, and who take **initiative in addressing issues within the international community** with insight, responsibility, and action.
- The **Master's degree** is conferred upon those who have undertaken academic inquiry to attain a profound understanding of global trends and challenges, and who have demonstrated either **the capacity for research that contributes to the discovery of truth and the creation of new value**, or **the ability to apply advanced, up-to-date expertise—including the latest academic findings—from an interdisciplinary perspective to address issues within the international community**. Recipients of the degree are thus recognized as individuals who embody both intellectual depth and creative engagement, capable of advancing knowledge and contributing meaningfully to the betterment of society through their scholarly and professional endeavors.
- The **Doctoral degree** is conferred upon those who, in addressing unresolved academic and societal challenges, have demonstrated **an independent capacity for research**—the ability to formulate their own questions, design interdisciplinary processes to overcome complex issues, and contribute to the **discovery of new truths and the creation of new value**.

  In addition, degree recipients are recognized as possessing **the emergent intellect** to reconcile and elevate conflicting ideas and values to a higher synthesis, together with **the ability to apply knowledge creatively and responsibly** to advance the progress of the international community.

  Such qualities embody the **creative wisdom** that defines the University's ideal of scholarly excellence and global contribution.

Information literacy: the ability to collect, evaluate, use, and disseminate information appropriately

Emergent intellect: the ability to create new concepts and values by sublimating and integrating different concepts with new ideas, without being bound by existing concepts that conflict with each other.

What are Tsukuba Standards?

The Tsukuba Standards are the educational declarations of the University. There are two types of standards, one for Undergraduate Schools and Colleges (announced in March 2008) and the other for graduate Schools and Programs (announced in June 2011). These standards clarify the aims of the University of Tsukuba in each course and how to achieve those aims, and announce to the general public the quality of education guaranteed by the University. As a tool to not only maintain quality, but also to constantly improve and continuously elevate it, the Tsukuba Standards play an important role within the university.

Definition of "degree program"

The degree program is an educational program that specifies the abilities to be achieved according to the level of the degree (bachelor, master, doctoral, etc.) and the academic field, and is systematically designed to enable students to acquire these abilities. In the traditional system where faculty members were fixed in educational organizations such as departments, and because programs were organized as the sum of classes offered by individual faculty members, the circumstances of the faculty members tended to take precedence over the demands of society and the needs of students. In contrast to this, a degree program is designed to provide educational content from the student's perspective, with faculty members gathered across the boundaries of internal and external organizations to create a program that is appropriate for a degree, with the degree positioned as proof of the student's internationally compatible abilities. By having an education system centered on degree programs, it becomes easier for students and society to see the educational objectives, content, and outcomes of the university.

Tsukuba Standards and a degree program

Since its inception, the University has implemented bachelor program education under a system that separates the education of students from the research of faculty members by establishing "Schools and Colleges" that differ from traditional departments. With this educational system, it is possible to deploy teachers from throughout the university according to educational needs without being closed within a single organization. It can be said that this is an educational system that embodies the idea of a degree program. In the 2011 academic year, we carried out organizational reforms to establish a new faculty member organization (Faculty), and in the 2020 academic year, we reorganized and restructured the graduate school and established a university-wide educational management system and framework, making a full transition to an educational system centered on degree programs. In the Tsukuba Standards, it clearly states the "Diploma Policy" and "Curriculum Policy" for each degree, as well as the measures to guarantee the quality of these policies for all educational organizations. These are consistent measures based on the founding philosophy of the University. Our entire faculty and staff are determined to push forward with educational reforms in order to establish our degree program system as an education system with international compatibility and collaborative capabilities and to pursue further improvements in the quality of education.

Educational Purposes of The Graduate School of University of Tsukuba

Educational Purposes of Doctoral Programs

- To cultivate researchers who will carry on and further academic studies, and researchers who will integrate different fields and open up new, cutting-edge fields

- To develop highly-skilled professionals who contribute to society with deep expertise, outstanding originality, and flexibility

- To nurture university faculty members with well-developed competences in the areas of education, research, and organizational management

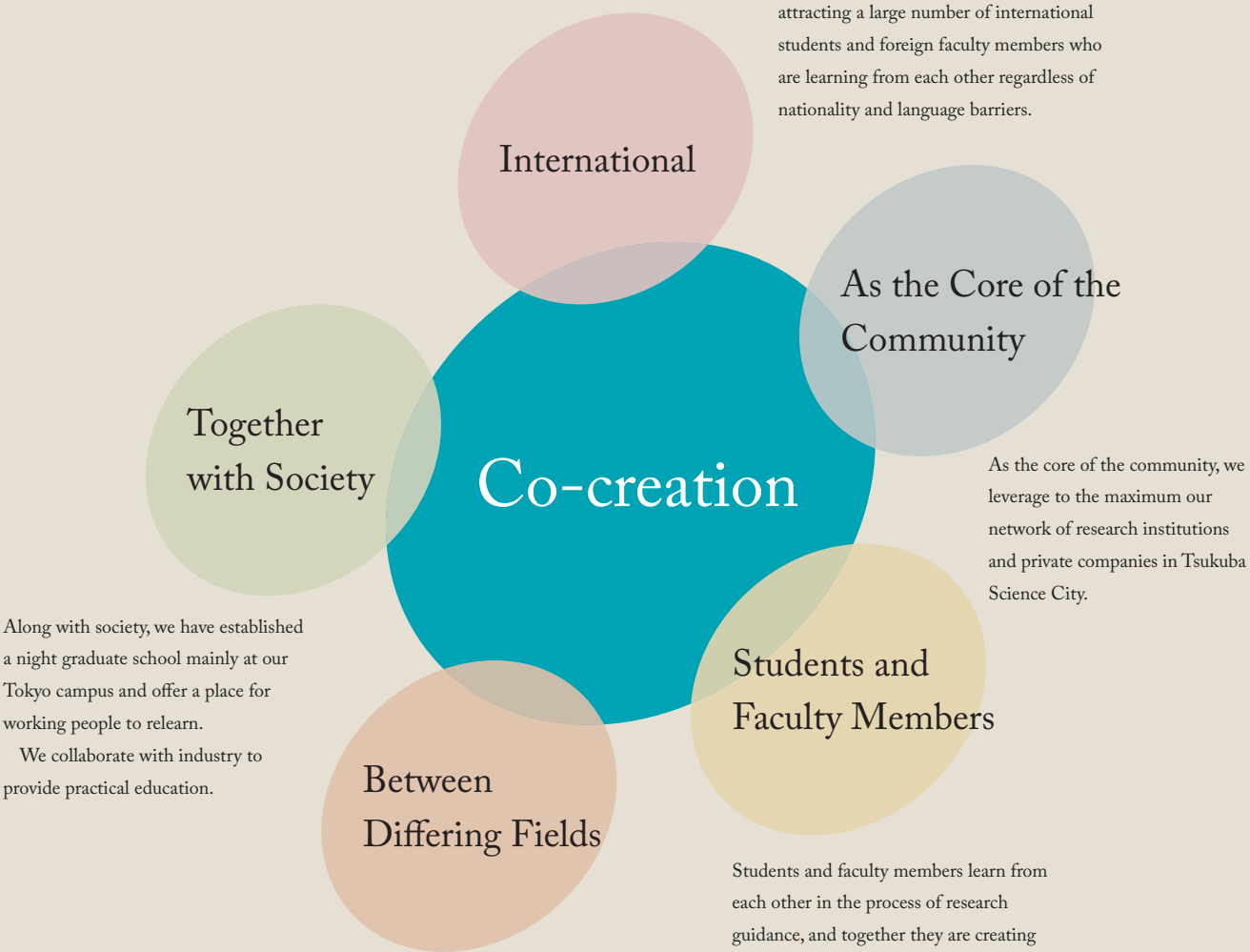
Educational Purposes of Master's Programs

- To develop highly-skilled professionals who contribute to society by having both a global perspective and specialized practical skills

Educational Purposes of Professional Degree Programs

- To develop highly-skilled professionals with the extraordinary abilities and profound knowledge necessary for careers that require a high level of expertise

- Those who are capable of exercising global leadership based on a keen international sense
- Those who are capable of creating knowledge that contributes to the future of human society with a rich culture and sense of ethics
- Those who pioneer professional careers based on matured intellect, emotion, and intellect combined with logical thinking and innovative creativity



Internationally, the University of Tsukuba is attracting a large number of international students and foreign faculty members who are learning from each other regardless of nationality and language barriers.

As the core of the community, we leverage to the maximum our network of research institutions and private companies in Tsukuba Science City.

Along with society, we have established a night graduate school mainly at our Tokyo campus and offer a place for working people to relearn.

We collaborate with industry to provide practical education.

Students and faculty members learn from each other in the process of research guidance, and together they are creating a hub of knowledge.

Between the differing fields of study, as a comprehensive university, we have a wide range of academic disciplines, and we are actively developing interdisciplinary and fusional education and research while deepening our specialized fields.

Figure 1 Co-creating New Knowledge and Unique Human Resources at TSUKUBA, a Hub of Knowledge

Policy 1

Clear educational goals and high quality degree programs

Degree Program system with six Degree Programs in three Graduate Schools

In the 2020 academic year, the University's Graduate School was reorganized from 85 Programs in 8 Graduate Schools to 6 Degree Programs in 3 Graduate Schools, and we made a full transition to a degree program system. In the new organization, the traditional walls between majors were broken down, and faculty from a wide range of disciplines worked together on degree programs. In other words, the six Degree Programs are equivalent to the so-called majors, and all the faculty members are full-time faculty members in those schools. As a result, one faculty member can be responsible for more than one program within a Degree Program, and a system of cross-disciplinary and collaborative guidance is now possible (Figure 2). As Educational Organizations, the Graduate Schools and Degree Programs to which students belongs are clearly separated from the Faculty Organizations to which the faculty members belong. The programs organized under the Graduate Schools and Degree Programs have established educational objectives based on social demands at the degree level (master's, doctoral) and in the discipline (research, professional, specialist) or field, and have clearly stated the knowledge and skills to be acquired, and have systematically designed educational programs to acquire these abilities.

In addition to this, the "School of Integrative and Global Majors" has been established to implement and manage degree programs operated under university-wide cooperation.

Clarification of three policies and the establishment of competences

With regard to all degrees awarded by the University, we have clarified the three policies of Diploma Policy, Curriculum Policy, and Admission Policy, as well as the knowledge and skills ("competences") that students should possess at the time of being awarded with a degree. Based on these policies, each educational organization and degree program plans and designs its educational program. By clearly indicating the suitable competences for degrees and assessing the achievement status of those competences, the quality of degrees can be guaranteed, and the academic outcomes of graduate education at the University can be visible to society.

Competences are divided into "Generic Competences", and "Specialized Competences". Generic Competences are defined as general knowledge and skills, commonly to each Master's and Doctoral Programs that support active roles in society. (Table 1). Specialized Competences, as advanced knowledge and skills in the major field, correspond to the Educational Objectives of each level of graduate schools and degree programs, and are systematically organized around the three core competences of "research abilities", "specialized knowledge", and "ethical view". By establishing competences based on the characteristics and uniqueness of each degree program upon a common foundation at each level of the university, graduate schools and degree programs, the system enables students to cultivate not only deep specialization but also fundamental knowledge in related fields and broad perspective with a comprehensive view.

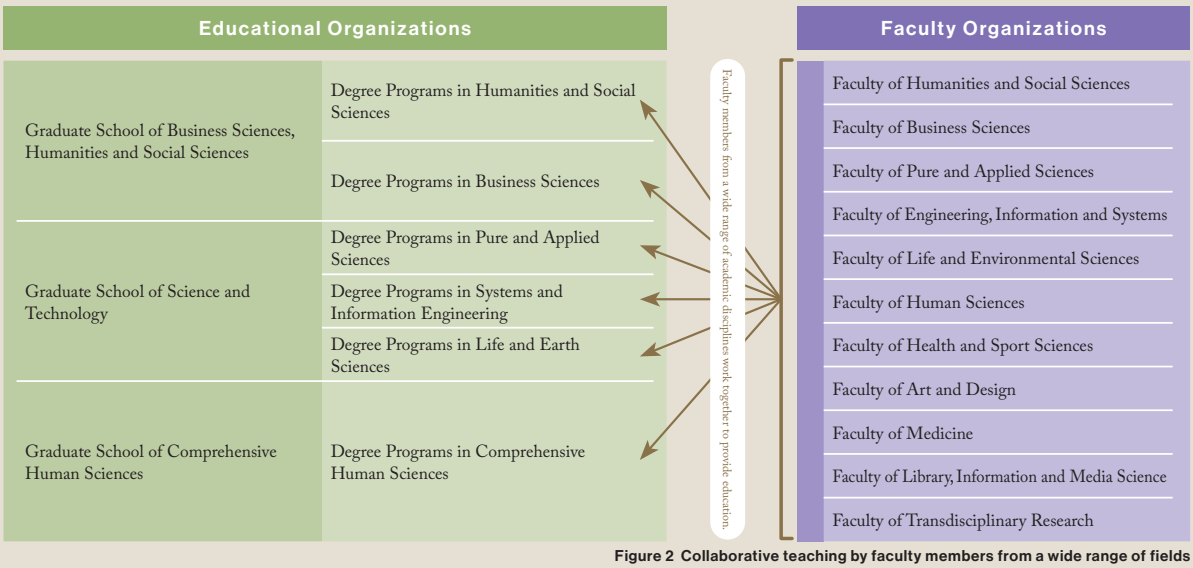


Figure 2 Collaborative teaching by faculty members from a wide range of fields

Systematized educational curriculum design

Our university has established an educational system known as “Creative Wisdom Education” to nurture highly skilled individuals by fostering the balanced development of “specialized knowledge and skills”, which are advanced knowledge and abilities acquired through specialized education and research in specific fields, and “general knowledge and skills”, which are universal and cross-disciplinary and can be flexibly applied across diverse situations and fields. By integrating these two forms of knowledge and skills, the University aims to cultivate individuals equipped with “Creative Wisdom”. Through this system, we cultivate individuals who possess both deep expertise and a broad perspective, and who can present flexible solutions to complex challenges in an increasingly unpredictable society and put those solutions into practice. Based on the philosophy of Creative Wisdom Education, each educational organization systematically structures and implements curricula to enable students to acquire Generic Competences and Specific Competences in a balanced manner, as specified in the Diploma Policy. For this reason, we offer not only courses related to the major field of study of each degree program, but also Graduate General Education Courses organized across the entire university, Inter-disciplinary Foundation Courses organized by each graduate school, and Degree Programs' Common Courses. Graduate General Education Courses mainly correspond to Generic Competences, and we have established six courses to cultivate ethics, information transmission and communication skills, internationality, career management skills, a broad intellectual foundation, and a rich physical and mental foundation in a balanced manner. Inter-disciplinary Foundation Courses correspond to the Specialized Competences of Graduate schools, and allow students to acquire basic knowledge in various specialized fields adjacent to their own. Through taking Graduate General Education Courses, Inter-disciplinary Foundation Courses, Degree Programs' Common Courses, and specialized courses in their respective fields of study, students will be able to acquire the ability to think logically from a holistic perspective, as well as acquire expertise in a wide range of fields beyond the confines of a single discipline.

Nurturing research and field skills to meet the demands of society

In today's society, which faces many complex issues, there is a strong demand to produce human resources with advanced and practical problem finding and solving skills, underpinned by deep specialized knowledge and research capabilities. In light of these circumstances, in addition to research skills appropriate for a master's or doctoral degree, the University has positioned degrees awarded by degree programs that place particular emphasis on the cultivation of “field skills” that meet the actual, tangible challenges of society as “Professional Research Degree” (Figure 3).
This is a degree system uniquely established by the University in order to proactively and accurately respond to specific issues in society. There is no difference in the status of the degrees (master's or doctoral) awarded under the law.
There are 16 degree programs that award a “Professional Research Degree”, which are the current Master's/Doctoral Program in Business Administration, Master's Program in Service Engineering, and the Master's Program in Mountain Studies.

	Generic Competences
Master's Programs	1. Knowledge application competence: Ability of contribute to society with advanced knowledge
	2. Management competence: Ability to appropriately address challenges from broader standpoints
	3. Communication competence: Ability of communication in expert knowledge with accuracy and clearness
	4. Teamwork competence: Ability to work with the team and actively contribute to the achievement of goals
	5. Internationality competence: Willingness to contribute to the international society
Doctoral Programs	1. Knowledge creation competence: Ability to create new knowledge to be able to contribute to future society
	2. Management Competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly
	4. Leadership competence: Ability to accomplish objectives under one's leadership
	5. Internationality competence: High level of awareness and motivation to be internationally active and contribute to international society

Table 1 Generic Competences

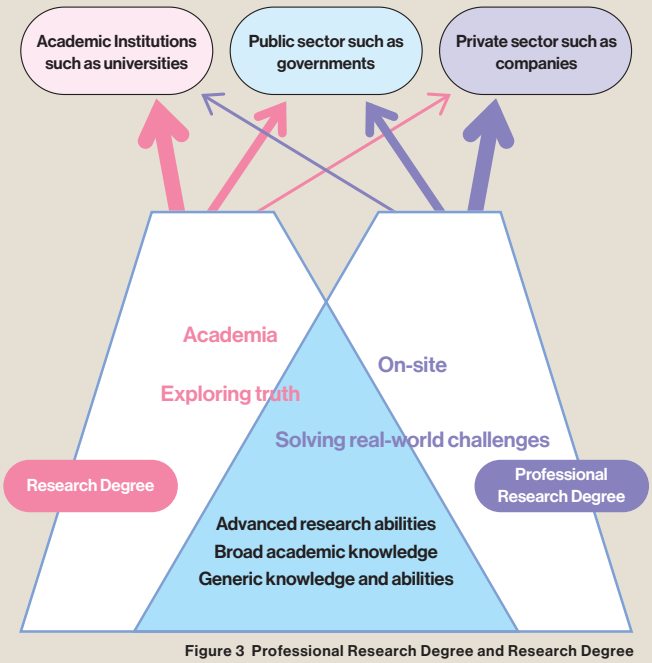


Figure 3 Professional Research Degree and Research Degree

Policy 2

Developing human resources to become global leaders

From Tsukuba to TSUKUBA

Since the establishment of the University, many international students and foreign faculty members have gathered here, and the students and faculty members who learn from each other beyond the boundaries of nationality and language have co-created TSUKUBA, a hub of knowledge that is not bound by the organization known as the "University of Tsukuba" or the region known as "Tsukuba City". In addition, as a comprehensive university with distinctive programs in physical education, Art, and medicine, the University provides holistic support for international students and foreign faculty members, including sports, the Art, and physical and mental health, thereby promoting the creation of a community where everyone can work together with peace of mind.

There are many foreigners residing in Tsukuba City and Tsukuba Science City. As a core institution, the university also functions as a hub to promote the internationalization of Tsukuba Science City (Table 2).

Internationalization in Everyday Life

One of the roles that the University must play in the 21st century is to develop human resources who will become global leaders. In order to realize this goal, the University has established 14 overseas bases in 12 countries and regions, and has concluded more than 300 exchange agreements (Fig. 4), and has achieved remarkable results in admitting excellent international students, sending current students abroad, and academic exchange among faculty members.

Through initiatives such as the Project for Establishing Core Universities for Internationalization (Global 30: 2009-2013 academic year) and the Global Human Resource Development Project (GGJ: 2012-2016 academic year), the University has been promoting the "internationalization in everyday life" of the campus. Top Global University Project (SGU: 2014-2023 academic year) and Multicultural Campus Project Towards Social Impact (2024-2030 academic year) are promoting Campus-in-Campus and other programs aiming to implement education and research that transcends national borders and institutional boundaries and actively utilizes resources from around the world.

In addition, office of International Exchange Support, Student Support Center, has been established as an on-campus organization that provides a one-stop service to promote "internationalization in everyday life" on campus and the sending of students abroad for "the world is a place of learning".

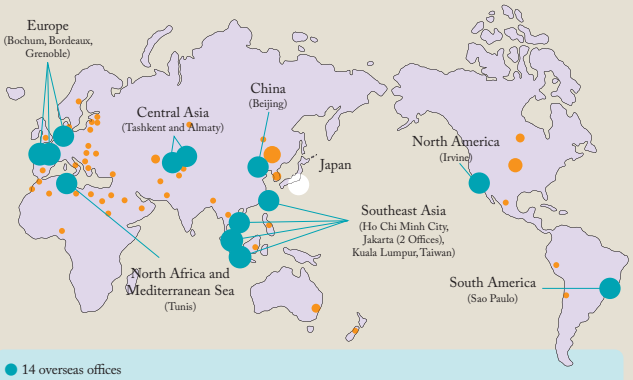
Developing global leaders

In order to develop human resources worthy of becoming international leaders, the University does not limit the place of learning to its campus, but adopts the motto of "the world is a place of learning" and, as a unique form of support, provides scholarships, classes, extracurricular activities, and various other university-wide initiatives (Table 3).

There are 13,623 foreigners from 145 countries living in Tsukuba City
(as of October 2024)

The University has about 3,800 dormitory rooms,
where about 900 of the 2,500 international students live.

Table 2 Status of Foreign Residents in Tsukuba City and Tsukuba Science City



● 14 overseas offices
● 13 Campus-in-Campus agreements, 178 agreements at the university level and 191 at the department level with universities in 68 countries and areas.

Figure 4 Overseas Offices and Partner Organizations (as of December 2024)

Financial support (travel expenses support, accommodation expenses support, participation expenses support, etc.)

Tsukuba Scholarship : Support for international students

Study Abroad Support Programs : Partner University Exchange Students Support Program, Campus in Campus (CiC) Support Program, Overseas Study Tour Support Program (MUSHA-SHUGYO), Overseas Academic Conference Participation Support Program, Overseas Language Training and Academic Activity Support Program

Courses, Educational Programs, etc.

Graduate General Education Courses: Advanced Discussion Course by Japan Project-Industry Council JAPIC Advanced Discussion Course, International Research Project, International Internship

Ph.D. Program in Human Biology
Ph.D. Program in Empowerment Informatics

Ph.D. Program in Humanics
(Doctoral Program for World-leading Innovative & Smart Education) (Adopted by WISE Program)

Transnational European and East Asian Culture and History, TEACH

The Nippon Foundation Central Asia-Japan Human Resource Development Project, NipCA Project (Granted by the Nippon Foundation)

ASEAN International Mobility for Students (AIMS) Program
Tsukuba Trans-Pacific Program

Program in Economic and Public Policy
(A master's program in English for young leaders in developing countries with the support and cooperation of the World Bank, etc.)

University of Tsukuba Global+ Leadership Education Program
A leadership education program open to the entire university to acquire knowledge of global scale issues (global), perspectives from emerging countries (local), and advanced English and local language skills.

Special Program in Japanese and Central Eurasian Studies
(A master's degree program in English established with the support of The Nippon Foundation Central Asia-Japan Human Resource Development Project, with the objective of developing human resources who can contribute to the achievement of the Sustainable Development Goals in the Central Asian region and to the resolution of issues faced by local communities)

Japan-Expert (bachelor degree) Program
Bachelor's Program in Global Issues
Bachelor's Program in Interdisciplinary Engineering
(New educational programs under the Top Global University Project)

Providing a forum

A forum for exchange between Japanese and international students :
Student Commons, Global Chat Program (G-Chat/Tsuku-chat/Language Exchange (GOTCHAT)), GASSHUKU and DOJO etc.

A forum for exchange between citizens and international students
City Chat Café etc.

Table 3 Initiatives for developing global leaders

Policy 3

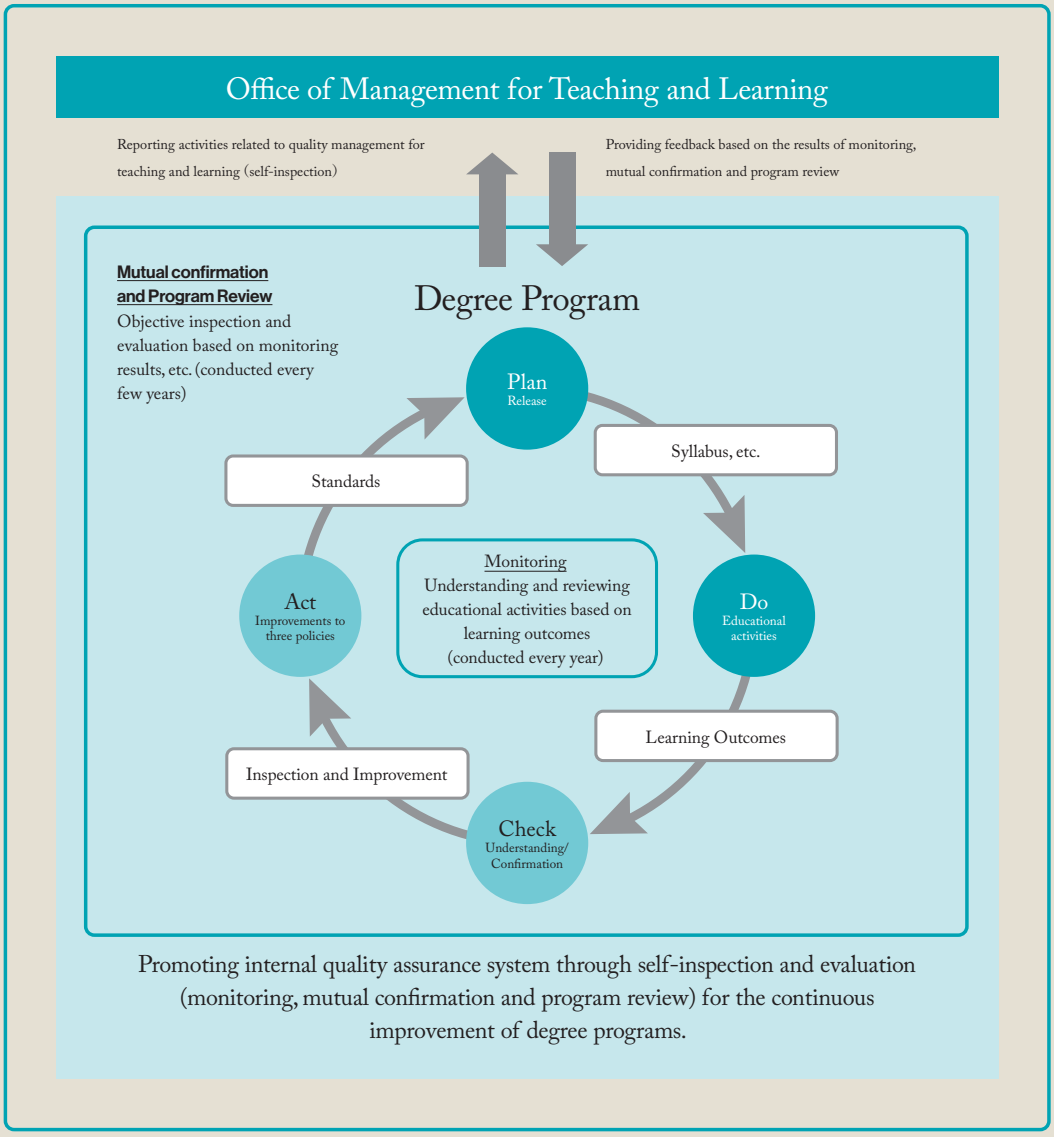
Realization of university-wide quality management for teaching and learning

Promotion of the PDCA cycle through university-wide academic management

The University establishes the Office of Management for Teaching and Learning and realizes university-wide quality management for continuous assurance and improvement of the quality of degree program.

The Office of Quality Management for Teaching and Learning will undertake monitoring (self-inspection conducted every year) and program review (holistic review conducted every few) of degree programs as well as quality review of degree program proposals, Promotion of systematic faculty development activities, research in higher education for advancement of internal quality assurance.

Figure 5 Image of quality assurance model comprised of monitoring and program review



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Graduate School of Business Sciences, Humanities and Social Sciences

Degree Programs in Humanities and Social Sciences

Master's Program in Humanities	Doctoral Program in Humanities
Subprogram in Philosophy	Subprogram in Philosophy
Subprogram in History and Anthropology	Subprogram in History and Anthropology
Subprogram in Literature	Subprogram in Literature
Subprogram in Linguistics	Subprogram in Linguistics
Subprogram in Modern Culture Studies	Subprogram in Modern Culture Studies
Subprogram in English Language Education	Subprogram in English Language Education
Master's Program in International Public Policy	Doctoral Program in International Public Policy
Master's Program in International and Advanced Japanese Studies	Doctoral Program in International and Advanced Japanese Studies

Degree Programs in Business Sciences

Master's Program in Law	Doctoral Program in Law
Master's Program in Business Administration	Doctoral Program in Business Administration

Law School Program

MBA Program in International Business

Educational Objectives of Graduate School of Business Sciences, Humanities and Social Sciences

The Graduate School of Business Sciences, Humanities and Social Sciences cultivates such researchers, university faculty members and other highly specialized professionals who can create new knowledge and embody it through the research of human values and of the way how individuals and society should be, in a comprehensive manner embracing both the time and special scales by means of multifunctional and advanced education and research in business sciences, humanities, and social sciences.

Competences specified by the Graduate School of Business Sciences, Humanities and Social Sciences

Master's Program	1. Research ability	Basic knowledge and ability to set research tasks and carry out a research plan in the areas of business sciences, humanities, and social sciences
	2. Specialized knowledge	Advanced specialized knowledge and command of the areas of business sciences, humanities, and social sciences
	3. Ethical view	Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of business sciences, humanities, and social sciences
Doctoral Program	1. Research ability	Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of business sciences, humanities, and social sciences
	2. Specialized knowledge	Leading-edge and advanced specialized knowledge and command of the areas of business sciences, humanities, and social sciences
	3. Ethical view	Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of business sciences, humanities and social sciences and deep ethical knowledge about the specific area of expertise
Doctoral Program	・Ability to have deep specialized knowledge about the management and legal work of businesses and organizations and think from various perspectives ・Ability to identify problems on one's own from social and business scenes and solve them after clarification ・Ability to communicate by merging knowledge and experience about theory and practice based on academic research and giving one's views ・Ability to create new knowledge about management and legal work and put it into practice in society and business	

Degree Programs in Humanities and Social Sciences

Educational Objectives

The Degree Programs in Humanities and Social Sciences seek to cultivate human resources who have an outstanding ability in the fundamental research of humanities and social sciences as to the study and analysis of the affairs pertaining to individuals or society and the individual-to-society relationship and also who can contribute to hand down the human knowledge in response to academic progression or changes in social requirements, as well as such researchers, educators and professionals with high specialty and working-level ability who daringly challenge global scale issues and social issues brought up by the progression of globalization and possess both ingenuity and flexibility to envision the desirable ways how humans should exist and how the relationship between individuals and society should be.

	Competences specified by the Degree Programs	Evaluation perspectives
Master's Program	1. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of humanities and social sciences	① If the ability to set research tasks in the areas of humanities and social sciences was acquired ② If the ability to carry out a research plan in the areas of humanities and social sciences was acquired
	2. Specialized knowledge: Advanced specialized knowledge and command of the areas of humanities and social sciences	① If advanced specialized knowledge in the areas of humanities and social sciences was acquired ② If a command of specialized knowledge in the areas of humanities and social sciences was acquired
	3. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability in the areas of humanities and social sciences	① If ethical view necessary in the areas of humanities and social sciences was acquired ② If ethical knowledge necessary in the areas of humanities and social sciences was acquired
Doctoral Program	1. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of humanities and social sciences	① If the ability to set leading-edge research tasks in the areas of humanities and social sciences was acquired ② If the ability to carry out a research plan independently in the areas of humanities and social sciences was acquired
	2. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of humanities and social sciences	① If leading-edge and advanced specialized knowledge in the areas of humanities and social sciences was acquired ② If a comprehensive command of specialized knowledge in the areas of humanities and social sciences was acquired
	3. Ethical view: Ethical view and ethical knowledge appropriate for researchers in the areas of humanities and social sciences and deep ethical knowledge about the specific area of expertise	① If ethical view and ethical knowledge appropriate for researchers in the areas of humanities and social sciences was acquired ② If deep ethical knowledge about the specific area of expertise was acquired

Degree Programs in Business Sciences

Educational Objectives

The Degree Programs in Business Sciences, which are designed principally for adult members of society, seek to cultivate highly specialized professionals who are deeply scholarly and excellent in the abilities required of the highly specialized professionals looked for in the society and business, to be able to contribute to the sustainable growth of society by researching the background of various issues that today's world or organizations face and by formulating and implementing effective solutions.

	Competences specified by the Degree Programs	Evaluation perspectives
Master's Program	1. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the area of business sciences	If the research ability to repair various problems in modern society from a new perspective by the systematization of knowledge and experience gained from work is acquired
	2. Specialized knowledge: Advanced specialized knowledge and command of the area of business sciences	If specialized knowledge and command to repair various problems in modern society from a new perspective by the systematization of knowledge and experience gained from work are acquired
	3. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of business sciences, humanities, and social sciences	If ethical knowledge appropriate for researchers or highly specialized professionals in the area of business sciences is gained and understood as ethical view
Doctoral Program	1. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the area of business sciences	If the research ability to independently and creatively make the recognition, analysis, development of solutions, etc. of new types of problems facing companies and society is acquired
	2. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the area of business sciences	If the ability to develop analysis and solutions of problems facing companies and society using leading-edge and advanced specialized knowledge is acquired
	3. Ethical view: Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of business sciences and deep ethical knowledge about the specific area of expertise	If advanced ethical knowledge appropriate for researchers or highly specialized professionals in the area of business sciences is gained and understood as ethical view

Master's Program in Humanities

Master of Arts in Humanities

Program Educational Objectives

The Master's Program in Humanities helps students gain excellent specialized knowledge in various areas of humanities such as philosophy, ethics, religion, history, anthropology, literature, linguistics, culture studies and English language education in order to adapt to changes in the circumstances of humanities research and education and to social changes that arise with globalization. The Program also cultivates those who set their sights to pursue a doctoral program to become researchers or university faculty members competent both in research and education who can contribute to problem solving in a joint effort with other persons in different areas of expertise to identify and solve new global problems.

Graduate Profile	Students should possess not only specialized knowledge in the areas of humanities but also the knowledge in associated areas, as well as the high research ability to work on research tasks by interdisciplinary approach. In addition, they should be able to pass along such research findings to the society from a wide perspective to solve modern problems.

Diploma Policy

The degree of Master of Arts in Humanities is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of humanities	①If the ability to set research tasks in the areas of humanities was acquired ②If the ability to carry out a research plan in the areas of humanities was acquired
	7. Specialized knowledge: Advanced specialized knowledge and command of the areas of humanities	①If advanced specialized knowledge in the areas of humanities was acquired ②If a command of specialized knowledge in the areas of humanities was acquired
	8. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability in the areas of humanities	①If ethical view necessary in the areas of humanities was acquired ②If ethical knowledge necessary in the areas of humanities was acquired
	9. Thinking ability: Ability to think affairs logically and draw conclusions based on the knowledge in one's own area of expertise	If the ability to think affairs logically and draw conclusions based on the knowledge in one's own area of expertise was acquired
	10. Comprehensive: Ability to place one's own findings into associated areas and apply and practice them	If the ability to place one's own findings into associated areas and apply and practice them was acquired

Guidelines for Assessing Learning Outcomes	– Learning outcomes are evaluated by confirming and evaluating the status of competences acquired based on the degree awarding policy at the end of each semester and at the time of submission of the master's thesis, using the "Achievement Evaluation Table (Rubric)". – After the guidance in a seminar related to master's thesis guidance in the first year, the master's thesis concept will be presented in the fall semester of the second year, and the first stage of achievement will be reviewed based on the rubric, and the chief and assistant examiners and related faculty members will review it. – After submitting the master's thesis, the Thesis Review Committee, which consists of two or more chief examiners and two associate examiners, conducts an open examination and a second-stage achievement review based on the rubric.
Evaluation Criteria for Degree Theses/ Dissertations	1. The research theme must be appropriately set and clear in significance and positioning. 2. Associated preceding studies must be covered and critically appraised. 3. The research method must be clearly presented. 4. The arguments must be appropriately composed, empirical and logical. 5. New academic findings must be included. 6. The appropriate format as a degree thesis must be provided in adherence to research ethics. Master's theses must be reviewed publicly by a review board which is set up with one chief reviewer and two or more sub-reviewers.

Curriculum Policy

The Program is designed to provide students with education and research guidance to develop a breadth of basic skills in humanities and social sciences, and to have wide perspectives in humanities, society and business as well as the versatile knowledge and ability that support the students to be active in diverse social settings, along with the research ability, specialized knowledge and ethics in humanities that involve the nine areas of philosophy, ethics, religious studies, history, anthropology, literature, linguistics, culture studies and English language education.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as versatile knowledge and ability in associated areas with the student's major at the core, two credits must be earned as required elective subjects from Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses. In addition, the two required credits of “Joint Seminar for Master's Thesis” and “Introduction to Research Methods or Academic Writing and Research Ethics” in Degree Programs' Common Courses must be earned. The research supervision takes a multiple-instruction scheme (participated by faculty members of other Programs if required) to develop a research ability that exerts multifaceted perspectives. The concrete subjects to be taken and the assignment of sub-supervisory faculty members will be decided based on the individual student's research plan, carrier plan, etc.

Curriculum Design Framework	− The ability to put advanced knowledge to use in society is acquired with Graduate General Education Courses, Joint Seminar for Master's Thesis, Introduction to Research Methods or Academic Writing and Research Ethics, etc. − The ability to appropriately address challenges from every angle is acquired with Graduate General Education Courses, Internship for Humanities and Social Sciences (1)(2), etc. − The ability to express expert knowledge accurately and clearly is acquired with Graduate General Education Courses, Joint Seminar for Master's Thesis, etc. − The ability to cooperate and actively contribute to the achievement of goals as a team is acquired with Graduate General Education Courses, Internship for Humanities and Social Sciences (1) (2), etc. − The awareness to contribute to international society is acquired with Graduate General Education Courses, Grant Writing for Humanities and Social Sciences, etc. − The basic knowledge and ability to set research tasks and carry out a research plan in the areas of humanities and social sciences and the areas of humanities are acquired with Inter-disciplinary Foundation Courses, Joint Seminar for Master's Thesis, Introduction to Research Methods or Academic Writing and Research Ethics, specialized subjects (seminar subjects), master's thesis creation, special interest group presentations, etc. − The advanced specialized knowledge and command of the areas of humanities and social sciences and the areas of humanities are acquired with Inter-disciplinary Foundation Courses, Joint Seminar for Master's Thesis, specialized foundation subjects, specialized subjects (lecture subjects, seminar subjects), master's thesis creation, special interest group presentations, etc. − The ethical view and ethical knowledge appropriate for persons with basic research ability in the areas of humanities and social sciences and the areas of humanities are acquired with Graduate General Education Courses, (life, environment and research ethics subjects), Inter-disciplinary Foundation Courses, Introduction to Research Methods or Academic Writing and Research Ethics, specialized subjects (seminar subjects), research supervision, etc. − The ability to think affairs logically and draw conclusions based on the knowledge in one's own area of expertise is acquired with specialized subjects (seminar subjects), master's thesis creation, special interest group presentations, etc. − The ability to place one's own findings into associated areas and apply and practice them is acquired with Foundation Subjects for Major (seminar subjects), other Programs' subjects, research supervision, etc.

Teaching and Learning Methods	– Students learn and take research supervision in accordance with a “learning plan” and a system of supervision, which are set up at the enrollment and the beginning of the year based on the research theme of each student. – In the first year, students learn the research ethics and basic research techniques through learning “Introduction to Research Methods” to acquire “Competence of knowledge application (generic competence)” and the specific competences of “research ability” and “ethical view”. Early on at the time of enrollment, students acquire “Competence of knowledge application”, “Management competence”, “Communication competence”, “Teamwork competence” and “Competence in Internationality” through other Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, Graduate General Education Courses and other foundation subjects. – Students principally in the first year take Foundation Subjects for Major to learn the basic knowledge of each one's areas of specialty to acquire the specific competence of “specialized knowledge”, etc. – Students principally in the second year take Major Subjects (lecture subjects, seminar subjects) to learn the specialized knowledge necessary for research and the command of it to acquire “Competence of knowledge application” and the specific competences of “research ability”, “specialized knowledge”, “thinking ability”, etc. Around Major Subjects (seminar subjects) and research supervision, students also acquire “Management competence”, “Communication competence”, “Teamwork competence”, etc. and the specific competences of “ethical view” and “overall ability”.

Admission Policy

Desired Student Profile	We seek candidates who have the great interest to the areas of humanities, the enthusiasm to sincerely work on research tasks, and the basic knowledge, linguistic skill, logical thinking ability and discussion ability necessary to conduct research and who have also the motivation to pass along research findings to the society.

Student Selection Process	To select out enrollments, diverse candidates are sought through the general entrance exam, recommendation entrance exam or other enrollment selection methods. The opportunity of entrance exam is offered multiple times in the same year with the split of the number of persons admitted. – In the general entrance exam, candidates are comprehensively evaluated with the written exam of a specialized subject and an oral exam. For the specialized subject, candidates select one 科目 , which is associated to the areas of humanities, at the time of the application for enrollment; the selectable subjects are philosophy/thought, history/anthropology, literature, linguistics, modern culture studies, English language education, etc., and the exam, which includes some test items to solve on a specialized literature written in a foreign language (one language), evaluates the basic knowledge necessary for the research of the areas of humanities, the ability of logical thinking, the specialized knowledge of the area to be researched and the linguistic skill necessary for research. The oral exam, which has regard to the bachelor's thesis (or an equivalent paper) and the submitted documents such as a research plan, evaluates the candidate's basic research ability, the interest, enthusiasm and aptitude for research, the motivation to contribute to the society through research, and the specialized knowledge of the area to be researched, as well as the presentation ability, the communication ability, etc. The discussion ability for the candidate's own area of expertise is evaluated with the submitted bachelor's thesis (or an equivalent paper). – In the recommendation entrance exam, candidates are required to write a paper as the written exam and take an oral exam to make an overall evaluation. This exam is applicable to candidates who are recommended by the faculty members who supervised them in a degree program, etc. and know their abilities, personalities and qualities well enough to assure that they have already acquired the basic knowledge and logical thinking ability necessary for the research in the areas of humanities. For this reason, candidates are not required to take the written exam of a specialized subject but read specialized literature written in a foreign language (one language) and write a paper to discuss on it as the written exam to evaluate if the candidate has the sufficient logical thinking ability, discussion ability and linguistic skill to carry out the writing of a master's thesis. The oral exam, which has regard to a written recommendation and a research plan, confirms the basic knowledge of one's own area of expertise, the ability to carry out research, and the specialized knowledge of the area to be researched, and evaluates the interest, enthusiasm and aptitude for research and the motivation to contribute to the society through research, as well as the presentation ability, the communication ability, etc.

Learning Support Framework

Academic Support	– In order to understand the degree of achievement of learning, all graduate students are required to prepare and submit a competence achievement evaluation form every semester. The supervisor conducts individual interviews based on the competence achievement evaluation table submitted by the graduate students, and provides guidance on how to proceed with effective learning while confirming the achievement status of general competences and specialized competences. – In "Introduction to Research Methods", we provide writing support and presentation guidance. In addition, we provide guidance on how to use the applications necessary for writing papers, how to use dictionaries, and how to cite. – The course model is clearly stated in the course regulations, etc., and we devise ways to achieve step-by-step and effective learning. – The schedule for submitting papers is specified, and junior students also participate in the midterm presentation (hearing) and final presentation (open screening) to reflect on their own research and thesis writing. – Graduate students prepare and submit a research plan after meeting with their main supervisor at the beginning of each academic year. After that, they have interviews with their main supervisor and faculty members in related fields of expertise from time to time, which they use to write their theses. – All first-year graduate students participate in the joint master's thesis seminar held at the end of the academic year, and are instructed to listen to research presentations on outstanding master's theses of that year and use them to write their own master's theses. – Graduate students who have written excellent master's theses are invited to present their master's theses in joint seminars, and especially outstanding presentations are awarded. – Some Subprograms (SPs) provide support for the cost of participating in conferences (research presentations), copying and borrowing papers from other university libraries and journals, and language support (editing) for presentations (papers, oral presentations) and manuscripts in foreign languages. – Some SPs provide revision guidance for submitting graduation papers to university journals. – We encourage applications for research support through external funding, such as student scholarships, and the main supervisor gives advice on preparing the application form. – In some classes conducted by each faculty member, we provide guidance on how to write English abstracts for submission to international conferences and write papers for submission to academic journals. – Graduate School Roundtable Meetings are held by students and faculty members to support the learning environment and student life after receiving various requests from students. – We recommend that you register your research achievements on Researchmap.

Opportunities for Peer Interaction	– In the courses (seminars) related to master's thesis writing, graduate students engage in research discussions among themselves to deepen their respective research. – Graduate student-led research groups and reading clubs are held to deepen research exchanges among graduate students. – In some SPs, students practice discussions on their own through the editing, publication, and distribution of magazines run and published by graduate students. – In some SPs, during joint practical training between undergraduate and graduate students, exchanges are deepened through the auxiliary role of student guidance. – Some SPs hold recreation events organized by graduate students to promote more interactions among them. – Centered on the tutor system, we deepen exchanges between international students and Japanese graduate students, and create an environment where students can cooperate with each other on a daily basis and engage in research with peace of mind.
Opportunities for Student–Faculty Interaction	– We hold an orientation for the new academic year and hold a meeting between graduate students, including new students, and faculty members. – Throughout the year, interviews with faculty members, including supervisors, deputy supervisors, and graduate students, are held at any time to enhance guidance. – Graduate School Roundtable Meetings are held by students and faculty members to support the learning environment and student life after receiving various requests from students. – Some SPs have organized recreation executive committees composed of student selection committees and faculty selection committees, and are considering creating more effective opportunities for students and faculty to interact under a new framework. – In order to help students choose their career paths after completion, some SPs hold open lectures multiple times a year with lecturers such as graduates who have entered research or professional positions and doctoral students, and provide opportunities for students, alumni, and faculty members to interact

Approaches to Assuring and Enhancing Educational Quality

– In acknowledging the qualifications of faculty members in charge of graduate schools, research and educational achievements are scrutinized in accordance with the established standards and procedures, and faculty members with sufficient qualifications and abilities are assigned to appropriate duties (research guidance, research guidance assistants, and class supervisors).
– When creating syllabi for class subjects, check sheets are used to check whether the syllabi for all subjects are appropriately created, which is useful for ensuring and improving the quality of education.
– In order to understand the degree of academic achievement, all students are required to prepare and submit a competence achievement evaluation form every semester, and individual instruction is provided.
– Thesis supervision seminars and doctoral dissertation presentations are held in which multiple faculty members participate, so that opinions can be obtained from faculty members other than the main supervisor and sub-supervisor.
– Class evaluation questionnaires are conducted, and improvements are made based on the responses, regarding lesson planning and class management.
– The steering committee and curriculum committee of each SP will evaluate students' learning outcomes and verify the appropriateness of the curriculum and guidance.
– As for the visualization of educational results, we provide guidance on the systematic conduct of research, such as oral presentations, poster presentations, and paper presentations.
– We utilize the TA and RA systems to improve the educational and research capabilities of graduate students and foster career awareness through education and research support services.

Master's Program in International Public Policy

■ Master of Arts in International Public Policy

Program Educational Objectives

The Master's Program in International Public Policy offers education and research supervision that are cross-disciplinary across the advanced expertise in the areas involving international public policy, including international relations, area studies, sociology, politics, economics, anthropology and public policy studies. The Program thereby cultivates those who set their sights to pursue a doctoral program to become university faculty members, researchers, etc. who base themselves on specialized knowledge to exert the research ability to flexibly adapt to globalization, modern international problems, which have become so complex, individual communities' problems, and social and cultural problems, and also the practical ability of problem solving that can lead these problems to public policy scenes.

Graduate Profile	He or she should possess the problem-solving ability and practical ability from the viewpoint that links problems to public policy as to the political-economic and social policy problems inside and outside Japan and also the problems related to individual communities and international relationships. These abilities are based on the advanced research ability founded on the logical thinking ability and analytical ability for theory and demonstration by taking advantage of the specialized knowledge of the areas of international public policy. As for the public business learning models designed for working adult members of society, in addition to the above abilities, he or she should gain the specialized knowledge of business administration, the ability to logically think in depth, and the ability to logically organize the content of thought.

Diploma Policy

The degree of Master of Arts in International Public Policy is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of international public policy	①If capable of approaching to tasks using the expertise in the areas of international public policy to manage one's own research process ②If capable of internally and externally transmitting research findings concerning international public policy, and based on it, capable of solving problems and making implementation
	7. Specialized knowledge: Advanced specialized knowledge and command of the areas of international public policy	①If analytical ability supported by the specialized knowledge of international public policy and logical thinking was gained ②If flexible thinking ability that works with multiple disciplines of international public policy was gained
	8. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability in the areas of international public policy	If capable of managing one's own research process based on high ethics

Guidelines for Assessing Learning Outcomes	– Through courses, especially "Research workshop", the instructor conducts a rigorous educational evaluation based on the student's research progress. – At the end of each semester, competence achievement evaluations are done, and through "Research workshop" in the second year as well as mid-term presention and final examinatons of master theses, students can acquire research skills, based on the evaluations of main- and sub-supervisors, as well as the supervision over the evaluations conducted by the curriculum committee and the degree program office.
Evaluation Criteria for Degree Theses/ Dissertations	1. Specific research tasks must be set with a clear description of the significance and need of the research. 2. The research methods and analyses used must be appropriate to the research tasks. 3. The preceding researches in the same area must be sufficiently considered. 4. The entire thesis must be logically developed with consistency. 5. The thesis must be systematically structured and unified as an academic paper. 6. Bibliography and references must be clearly shown in accordance with appropriate expressions and notational conventions. 7. Appropriate consideration must be paid for the handling of personal information and ethics. A thesis for degree grant, if approved to meet all of the above criteria, passes with an oral exam included in the judgment. 【Review board members】 A review board must be formed by one chief reviewer and two or more sub-reviewers who are the research supervisory faculty members or course teaching faculty members. Half or more of the reviewing faculty members in the board must be faculty members of the Master's Program in International Public Policy but, if required, faculty members who do not belong to the Master's Program in International Public Policy (including faculty members, etc. of other universities' graduate schools or research institutes, etc.) can be added as sub-reviewers.

Curriculum Policy

The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in humanities and social sciences, and to have the big picture in mind in humanities, society and business as well as the generic knowledge and ability that support the students to be active in diverse social scenes, along with the research ability, specialized knowledge and ethical view for the research on international public policy that is cross-disciplinary across the areas of international relations, area studies, sociology, politics, economics, anthropology and public policy studies.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, one credit from Graduate General Education Courses, another one credit from Inter-disciplinary Foundation Courses, and two credits from “Joint Seminar for Master's Thesis” and “Introduction to Research Methods or Academic Writing and Research Ethics” in Degree Programs' Common Courses must be earned as required subjects, and other Degree Programs' Common Courses are encouraged to be taken. The research supervision takes a multiple-instruction scheme (participated by faculty members of other Programs if required) to develop a research ability that exerts multifaceted perspectives. The concrete subjects to be taken and the assignment of sub-supervisory faculty members will be decided based on the individual student's research plan, carrier plan, etc. – The ability to put advanced knowledge to use in society is acquired with Graduate General Education Courses, Joint Seminar for Master's Thesis, Introduction to Research Methods or Academic Writing and Research Ethics, etc. – The ability to appropriately address challenges from every angle is acquired with Graduate General Education Courses, Internship for Humanities and Social Sciences (1)(2), Foundation Subjects for Major, etc. – The ability to express expert knowledge accurately and clearly is acquired with Graduate General Education Courses, Joint Seminar for Master's Thesis, Major Subjects (seminar subjects), etc. – The ability to cooperate and actively contribute to the achievement of goals as a team is acquired with Graduate General Education Courses, Internship for Humanities and Social Sciences (1)(2), Major Subjects (seminar subjects), etc. – The awareness to contribute to international society is acquired with Graduate General Education Courses, Grant Writing for Humanities and Social Sciences, Foundation Subjects for Major, etc. – The basic knowledge and ability to set research tasks and carry out a research plan in the areas of humanities and social sciences and the areas of international public policy are acquired with Inter-disciplinary Foundation Courses, Joint Seminar for Master's Thesis, Introduction to Research Methods or Academic Writing and Research Ethics, Foundation Subjects for Major, Major Subjects (seminar subjects), master's thesis creation, special interest group presentations, etc. – The advanced specialized knowledge and command of the areas of humanities and social sciences and the areas of international public policy are acquired with Inter-disciplinary Foundation Courses, Joint Seminar for Master's Thesis, Major Subjects, writing of master's thesis, special interest group presentations, etc. – The ethical view and ethical knowledge appropriate for persons with basic research ability in the areas of humanities and social sciences and the areas of international public policy are acquired with Graduate General Education Courses (life, environment and research ethics subjects), Inter-disciplinary Foundation Courses, Introduction to Research Methods or Academic Writing and Research Ethics, Research Workshop on International Public Policy, Major Subjects (seminar subjects), research supervision, etc.

Teaching and Learning Methods	– Early on immediately after enrollment, students take foundation subjects including Graduate General Education Courses and Inter-disciplinary Foundation Courses to acquire the generic competences such as the Competence of knowledge application, Management competence and Communication ability as well as ethics. – Students take Foundation Subjects for Major principally in their first year to master the basic methods and interdisciplinary perspectives in the areas of international public policy and acquire the Competence in Internationality and basic research ability. – Major Subjects includes lecture and seminar subjects. Lecture subjects allow mainly to gain advanced specialized knowledge, whereas seminar subjects, through discussions and other exercises, allow to enhance the research ability for the project that each student works on and also develop the problem-solving ability, Communication ability and Group skill. Students organize the subjects to take throughout the first and second years in the areas of international public policy, around those that each one thinks are especially important. – In the second year, the support for the research process is offered toward the writing of a master's thesis while including the training on ethics through the thesis supervision by the supervisory faculty members of the “Research Workshop on International Public Policy” .

Admission Policy

Desired Student Profile	We seek candidates who, through the wiring of bachelor's thesis, other outcomes of learning or their social experiences, have gained the ability and specialized knowledge to allow to continuously carry out the logical and practical research that enables the coexistence of individuals amid the complex modern society and international problems, as well as the enthusiasm for such research and the flexibility that can be applied to actual work of expertise by actively identifying challenges out of their interest, not only absorbing advanced knowledge.
Student Selection Process	To select out enrollments, diverse candidates are sought through the general entrance exam, recommendation entrance exam, the special selection for those who wish to complete the Program by taking only English-taught courses or other enrollment selection methods. The opportunity of entrance exam is offered multiple times in the same year with the split of the number of persons admitted. – In the general entrance exam, candidates are comprehensively evaluated with the written exams of specialized subject and foreign language and an oral exam. For the specialized subject, candidates select one subject, which is associated to the areas of international public policy, at the time of the application for enrollment; the selectable subjects are international relations, social development, anthropology, sociology, politics, area studies, economics, etc., and the exam evaluates the continuous research ability and specialized knowledge sufficient to write a master's thesis and the flexibility that can be applied to actual work of expertise. The written exam on a foreign language evaluates the command of the language indispensable for research and actual work.

Student Selection Process	The oral exam, which has regard to a research plan, etc., evaluates the candidate's enthusiasm and motivation for research, the specialized knowledge of the area to be researched, the flexibility and other qualities to be applied to actual work of expertise and the possibility of achieving the research plan, as well as the presentation ability, the communication ability, etc. – In the recommendation entrance exam, candidates are required to write a paper as the written exam and take an oral exam to make an overall evaluation. This exam is applicable to candidates who are recommended by the faculty members who instructed them in a degree program, etc. and know their abilities, personalities and qualities well enough to assure that they have already acquired the specialized knowledge, continuous research ability and foreign language command necessary for the research in the areas of international public policy. For this reason, candidates are not required to take the written exam of a specialized subject and a foreign language but write a paper to evaluate the specialized knowledge of the area to be researched and the flexibility to be applied to actual work of expertise. The oral exam, which has regard to a written recommendation and a research plan, evaluates the possibility of achieving the research plan, the enthusiasm and motivation for research, the specialized knowledge of the area to be researched, and the qualities the candidate has for research, as well as the presentation ability, the communication ability, etc. – Special selection is applicable to those who wish to complete the Program by taking only English-taught courses, such as younger civil officials and other jobholders in developing countries and emerging powers. In special selection, document screening and an oral exam are given as overall evaluation. Document screening examines the research plan, recommendation and so on, and evaluates the possibility of achieving the research plan, the enthusiasm and motivation for research, etc. (The oral exam, which has regard to the documents, evaluates the continuous research ability, the specialized knowledge of the area to be researched, the enthusiasm and motivation for research, the command of English, the possibility of achieving the research plan, as well as the presentation ability, the communication ability, etc.)

Learning Support Framework

Academic Support	– We provide information about university initiatives (such as writing support) and encourage students for active participation. – In addition to explaining how to proceed with learning during orientation at the time of enrollment, one main advisor and at least two co-advisors jointly provide study support to students. Supervisors, Curriculum Committee, Student Committee, and the administrative staff in charge of students provide support to students as needed. – By publicizing seminars led by external lecturers, we are creating a learning environment that can accommodate students' diverse research interests.

Opportunities for Peer Interaction	In the Master's and Doctoral Programs in International Public Policy, meetings are held once or twice a year where master's and doctoral students, along with faculty members, discuss the environment and work to improve the learning environment.
Opportunities for Student–Faculty Interaction	To promote interaction between students and faculty, and to provide opportunities to gather students' opinions regarding the research environment, informal discussion sessions (e.g., tea gatherings) are held at least twice a year.

Approaches to Assuring and Enhancing Educational Quality

- The curriculum committee, through evaluating learning outcomes of students, verify the appropriateness of the curriculum and the suitability of instruction. Specifically, syllabus checks are performed at the initiative of the curriculum commitee in order to confirm whether the course content is appropriate to the aims of the degree program, and whether the necessary information is provided to students.
- The curriculum committee plays a central role in reviewing and improving overall educational activities of the degree program in order to ensure the quality of education and the aims of the degree programs.

Master's Program in International and Advanced Japanese Studies

■ Master of Arts in International and Advanced Japanese Studies〕

Program Educational Objectives

The 21st-century world faces not only social issues such as population decline, aging societies, economic disparities, environmental crises, and the transformation of democracy, but also cultural issues such as increasing linguistic and cultural diversity and the need for intercultural understanding. Japan, too, is confronting social changes brought about by multicultural coexistence and digitalization, and its experience provides an important point of comparison for the international community. This situation demands a repositioning of Japan within an international context and the creation of knowledge that contributes to solving global challenges through comparative research.

This degree program aims to cultivate researchers and highly specialized professionals who can contribute to the development and international dissemination of Japanese language and culture through interdisciplinary research that integrates humanities, social sciences, and Japanese language education. By combining humanistic perspectives on literature, language, history, and thought with social scientific analysis, and the practical study of Japanese language education, the program seeks to renew the value of Japanese language and culture and disseminate universal knowledge to the international community. Through collaborative learning with diverse students from around the world, the program produces "Japan specialists" capable of transcending national and disciplinary boundaries and contributing to the construction of a sustainable and inclusive multicultural society.

Graduate Profile	We aim to nurture graduates who possess broad specialized knowledge and comprehensive perspectives necessary for elucidating the characteristics of contemporary Japan from a global viewpoint. Through acquisition of fundamental academic skills and engagement with related fields, they will develop the ability to advance to doctoral programs and pursue research careers.

Diploma Policy

The Master of Arts in International and Advanced Japanese Studies degree is awarded to students who fulfill the completion requirements of the Master's Program as stipulated in the University of Tsukuba Graduate School Regulations and related rules, and those who are recognized as having acquired the following knowledge and abilities.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Application of Knowledge: Ability to apply advanced knowledge for the benefit of society.	①Does the student show motivation to apply knowledge gained through research and related activities for the benefit of society? ②Can the student identify problems beyond their own field of specialization, and propose solutions based on broad knowledge?
	2. Management Skills: Ability to respond appropriately to challenges from a broad perspective	①Can the student address issues related to the field of International and Advanced Japanese Studies in a systematic manner? ②Can the student approach and solve problems from multiple perspectives?
	3. Communication Skills: Ability to convey specialized knowledge accurately and comprehensibly	①Can the student communicate effectively for smooth research implementation ②Can the student explain research content and specialized knowledge accurately and clearly to both specialists and non-specialists
	4. Teamwork Skills: Ability to collaborate as a team member and actively contribute to goal achievement	①Has the student actively engaged in tackling issues through teamwork and collaboration ②Has the student contributed in some way to the advancement of projects other than their own research?
	5. International Perspective: Awareness of contributing to international society	①Does the student demonstrate motivation to contribute to international society and to engage in global activities? ②Does the student possess language skills necessary for international activities
	6. Research Skills: Basic knowledge and abilities for setting research topics and executing research plans in international Japanese studies	①Has the student acquired the ability to set research questions in international Japanese studies? ②Has acquired the ability to execute research plans in International and Advanced Japanese studies
	7. Specialized Knowledge: Advanced specialized knowledge and application skills in international Japanese studies	①Has the student acquired specialized knowledge in the field of International and Advanced Japanese Studies? ②Has the student acquired the ability to apply specialized knowledge in the field of International and Advanced Japanese Studies?
	8. Ethics: Ethical awareness and knowledge appropriate for personnel with basic research capabilities in international Japanese studies	①Has the student acquired the ethical awareness required in the field of International and Advanced Japanese Studies? ②Has the student acquired the ethical knowledge required in the field of International and Advanced Japanese Studies?

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is objectively confirmed and assessed based on the degree of achievement as outlined in the "Achievement Evaluation Table", reflecting the acquisition status of competences according to the policy for the conferment of degrees at each stage. The stages and methods of achievement evaluation are indicated below. This degree program has established a system to accurately assess the acquisition of knowledge and competences outlined in the Diploma Policy, and to reflect these learning outcomes in both evaluation and educational guidance. Specifically, students are required to complete a "Competence Sheet" each semester, providing an opportunity to review their progress in earning credits and achieving learning goals associated with each competence area. Once submitted, the sheets are reviewed and commented on by the administrative office, followed by a review session between the student and their academic advisor. The advisor then provides written feedback, which supports learning guidance and adjustments to the student's academic plan.The Curriculum Committee then confirms this, and finally, the status of competence scores is evaluated by each individual's thesis examination committee during the thesis assessment, which helps support learning and adjust study plans. Through this process, the level of achievement in each competence area is quantified and visualized using charts such as radar graphs. This enables students to clearly identify areas to focus on in future coursework and study, thereby promoting a more structured and self-directed approach to learning.
Evaluation Criteria for Degree Theses/ Dissertations	(Examination System) (1) Among the examination committee members, at least one chief examiner (research supervisor) and two co-examiners (research supervisors or course instructor), totaling three members, shall be appointed from the faculty members of the relevant degree programs. The chief examiner and more than half of the co- examiners shall be appointed from the faculty members of Master's Program in International and Advanced Japanese Studies. (2) At least one examination specialist belonging to Master's Program in International and Advanced Japanese Studies should hold a doctoral degree. (3) At least one examination committee member belonging to Master's Program in International and Advanced Japanese Studies shall continue to serve as a research supervision faculty member of Master's Program in International and Advanced Japanese Studies for at least one year after the dissolution of the examination committee. (4) A faculty member at the University of Tsukuba who is not course instructor of a graduate school or degree program may be appointed as a co-examiner to the examination committee if deemed necessary for the relevant thesis examination. (5) Faculty members from other graduate schools/degree programs within the University, as well as faculty from graduate schools or research institutes outside the University, may be appointed as co-examiners to the examination committee if deemed necessary.

Evaluation Criteria for Degree Theses/ Dissertations	(Evaluation Criteria) Thesis examination is conducted based on the following criteria: ① The research questions are appropriately set. ② The argument is clear and consistent. ③ The analysis is conducted appropriately and employs accurate terminology. ④ Sufficient understanding of prior research achievements. ⑤ Reference materials and other resources are appropriately used. ⑥ The format and structure are appropriate. ⑦ The thesis demonstrates an academic contribution of suitable significance. (Evaluation Standards) Theses that satisfy all the above evaluation criteria, and have cleared the review process, shall be deemed successful.

Curriculum Policy

Master's Program in International and Advanced Japanese Studies, in the Graduate School of Business Sciences, Humanities and Social Sciences is founded on interdisciplinary research bridging the humanities, social sciences, and Japanese language education. The program seeks to cultivate research ability, specialized knowledge, and ethical awareness, while also fostering foundational literacy in the humanities and social sciences, a broad perspective that encompasses business, as well as transferable knowledge and skills, thereby equipping graduates with the ability to contribute to diverse fields of society.

Curriculum Design Framework	Based on students' primary research interests, the curriculum is designed to foster fundamental literacy in related fields, broad perspectives, as well as transferable knowledge and skills. Students are required to complete one credit from Graduate General Education Courses and Inter-disciplinary Foundation Courses, and two credits from Degree Programs' Common Courses including Joint Master's Thesis Seminar, Introduction to Research Methods or Academic Writing and Research Ethics. Research supervision is conducted under a multiple-advisor system (with faculty from other degree programs participating as needed) to cultivate research ability with multifaceted perspectives. The specific courses a student takes, and the selection of co-examiners are decided based on each individual student's research and career plans. Competence Development through Course Work: – Through participation in Graduate General Education Courses, Joint Master's Thesis Seminar, Introduction to Research Methods or Academic Writing and Research Ethics, Project Seminar 1A/1B/2A/2B/2C/2D, Research Program Development, master's thesis preparation, and presenting at academic conferences, students will develop the ability to apply advanced knowledge for the benefit of society (1. Knowledge Application Skills). – Through Graduate General Education Courses, Internship for Humanities and Social Sciences (1)(2), Project Seminar 1A/1B/2A/2B/2C/2D, self-assessment of achievement, and participation in external competitions, students will develop the ability to respond appropriately to issues from a broad perspective (2. Management Skills). – Through Graduate General Education Courses, Joint Master's Thesis Seminar, Japanese Language for IAJS, English Language for IAJS, and presenting at academic conferences, students will develop the ability to convey specialized knowledge accurately and comprehensibly (3. Communication Skills). – Through Graduate General Education Courses, Internship for Humanities and Social Sciences (1)(2), TA(teaching assistant) experience, participating in team competitions, conference Q&A sessions, and seminar discussions, students will develop the ability to collaborate as a team and proactively contribute to achieving goals (4. Teamwork Skills). – Through Graduate General Education Courses, Grant Writing for Humanities and Social Sciences, Japanese Language for IAJS, English Language for IAJS, overseas activity, interaction with international students, TOEIC, presenting at international conferences, and conducting collaborative research with foreign researchers, students will cultivate a mindset geared toward contributing to the international community. (5. International Perspective).

Curriculum Design Framework	– Through Inter-disciplinary Foundation Courses, Joint Master's Thesis Seminar, Introduction to Research Methods or Academic Writing and Research Ethics, Project Seminar 1A/1B/2A/2B/2C/2D, Major Subject (Seminar Courses), master's thesis preparation, and research presentations, students will develop fundamental knowledge and abilities for setting research goals and executing research plans in humanities, social sciences, and international Japanese studies (6. Research Skills). – Through Inter-disciplinary Foundation Courses, Joint Master's Thesis Seminar, Foundation Subject for Major, Major Subject (Lecture Courses, Seminar Courses), Research Program Development, master's thesis preparation, and making research presentations, students will develop advanced specialized knowledge and application abilities in humanities, social sciences, and international Japanese studies (7. Specialized Knowledge). – Through Graduate General Education Courses (Life, Environment, Academic Integrity), Inter-disciplinary Foundation Courses, Introduction to Research Methods or Academic Writing and Research Ethics, Major Subject (Seminar Courses), and research supervision, students will develop ethical awareness and ethical knowledge expected of individuals with basic research capabilities in the humanities, social sciences, and international Japanese studies (8. Ethical Awareness).

Teaching and Learning Methods	– General Foundation Subject: Introduction to Research Methods and Academic Writing and Research Ethics cover research ethics, information ethics foundations, and characteristics of research in international Japanese studies. Graduate General Education Courses and Inter-disciplinary Foundation Courses provide broad perspectives that contribute to research. – Foundation Subject for Major: Japanese Language for IAJS and English Language for IAJS aim to develop knowledge and skills necessary for research using Japanese (as a non-native language) and English. Other Specialized Foundation Courses systematically teach the foundations of interdisciplinary humanities, social sciences, and Japanese language education disciplines, while fostering broad perspectives and problem awareness through interdisciplinary research that transcends specific disciplines. Seminar Courses enable students to practice discussion, presentation, and analysis based on fundamental disciplinary knowledge. – Major Subject: Project Seminar provide opportunities for students to design research projects, present their processes and results, and engage in discussions with faculty and peers. Research Program Development supports students' independent research activities including conference presentations, research exchanges, and academic social contributions. Other Specialized Courses deepen interdisciplinary perspectives through systematic study across the humanities, social sciences, and Japanese language education. Seminar Courses further train students in debate, presentation, and analysis rooted in specialized knowledge. – Competence Standards: Achievement standards are established for each of the eight competences, with students aiming to meet 60% of the standards by the end of the first year, 80% by the end of the first half of the second year, and full standards by the end of the second year. The specific achievement standards will be announced separately to students. 1.Knowledge Application 2.Management Skills 3.Communication Skills 4.Teamwork Skills 5.International Perspective 6.Research Skills 7.Specialized Knowledge 8.Ethics

Admission Policy

Desired Student Profile	We seek individuals who are motivated to actively engage with global challenges—particularly those facing Japan and East Asia—by conducting research on Japanese culture, society, and Japanese language education from an international and comparative perspective. In the Master's Program, we welcome a wide range of applicants, including both students and working professionals, who aim to cultivate foundational research skills or apply their expertise practically in professional settings.

Student Selection Process	To accommodate diverse applicants, we offer multiple admission pathways such as general entrance exams, recommendation-based admissions, and special selection for working professionals. We divide the admission quota and conduct entrance examinations multiple times within the same academic year. Admission opportunities are available not only in April but also in October. **General Selection Process**: Applicants are evaluated comprehensively through written exams in specialized subjects and foreign languages, as well as an oral examination. Applicants must select one specialized subject related to International Japanese Studies at the time of application from the following fields: Politics; Economics; Literature, Culture, and Philosophy; Law, Society, Media, and Information; Linguistics; and Research in Japanese Language Education. Answers must be written in Japanese or English (only Japanese for "Research in Japanese Language Education"). This examination assesses the applicant's ability to conduct research in International Japanese Studies and their specialized knowledge in the chosen field. The foreign language written examination evaluates proficiency necessary for research in International Japanese Studies. The oral examination assesses academic achievements, critical thinking, passion and motivation for research, specialized knowledge in the intended field, as well as presentation and communication skills, based on the applicant's research proposal and other submitted materials. **Special Selection Process for Recommended Applicants**: Applicants are evaluated comprehensively through a written essay and an oral examination. This pathway is intended for those who have been recommended by faculty members familiar with the applicant's abilities, character, and aptitude, and who have already acquired the necessary specialized knowledge, capacity for independent research, and foreign language proficiency for International Japanese Studies. As applicants have either obtained or are expected to obtain a bachelor's degree, no written exams in specialized subjects or foreign languages are conducted. Instead, the essay assesses knowledge, comprehension, and logical thinking ability in the specialized field, thereby determining whether the applicant possesses the academic capability to pursue research in the Master's Program. The oral examination——evaluates motivation to engage earnestly with International Japanese Studies, the research plan, reasons for applying to this program, specialized knowledge in the intended field, as well as presentation and communication skills, including language proficiency, based on the research proposal and recommendation letter. **Special Selection Process for Working Individuals**: Applicants are evaluated through a written examination in a specialized subject and an oral examination. This pathway is intended for individuals with professional experience. Applicants must select one specialized subject related to International Japanese Studies at the time of application from the following fields: Politics; Economics; Literature, Culture, and Philosophy; Law, Society, Media, and Information; Linguistics; and Research in Japanese Language Education. Answers must be written in Japanese or English (only Japanese for "Research in Japanese Language Education"). The examination assesses specialized academic ability to conduct research in International Japanese Studies. The oral exam evaluates the research plan, awareness of issues gained through professional experience, specialized knowledge in the intended field, as well as presentation and communication skills.

Learning Support Framework

Academic Support	This degree program provides a range of learning support measures to enable students to conduct research effectively and communicate their findings both within and beyond the university. A financial support system for travel expenses related to conference presentations has been established, actively encouraging students to present at academic conferences in Japan and abroad. This helps create an environment that connects student research activities with broader society. Under the guidance of academic advisors, students develop presentation materials and practice their delivery in preparation for academic conferences. These activities are incorporated into the curriculum as part of the Research Program Development course, fostering the ability to communicate research clearly and effectively. In addition, the required course Japanese/English Language for IAJS provides instruction in academic writing and scholarly presentation skills, with a strong emphasis on building foundational academic competences. Through these support systems, students not only develop the ability to communicate their research outcomes accurately and effectively, but also acquire the skills to share academic knowledge with individuals from diverse cultural and social backgrounds, fostering dialogue and the creation of new value.
Opportunities for Peer Interaction	This degree program actively promotes student-led interaction as a means to enhance motivation for learning and improve the quality of research. As part of this initiative, regular gatherings are held where faculty and students come together, and master's students share their academic progress, research activities, and experiences such as study abroad and internships. These sessions foster mutual understanding and intellectual stimulation among students from diverse backgrounds and areas of expertise, contributing to the development of interdisciplinary perspectives. To support students working on their master's theses, a “Mini Experience Sharing Session on Thesis Writing” is held during the fall semester, featuring insights from alumni and current students with thesis-writing experience. Practical advice is shared on all stages of the process—from initial planning to submission and oral defense—helping to alleviate anxiety and build a supportive learning environment. Through these peer-support initiatives, students exchange knowledge and experiences, creating opportunities for mutual inspiration and fostering a collaborative atmosphere that supports high-level research engagement.

Opportunities for Student–Faculty Interaction	This degree program is committed to fostering an environment that encourages student motivation and improves the quality of research through smooth and continuous communication between students and faculty. At plenary meetings, faculty and students gather together for opportunities to exchange opinions on their daily academic and research activities. These sessions serve as a platform for incorporating student feedback into the management and development of the educational program. In addition, student surveys are conducted to collect opinions and requests regarding the degree program. The results of these surveys are shared during the plenary meetings, with faculty providing open feedback to promote transparency and mutual understanding. These efforts contribute to the ongoing improvement of the educational environment. Faculty members also actively support students' career development by offering diverse career-related information—including pathways to further study, employment, and research positions—and providing individualized consultations tailored to each student's aspirations. Through these continuous opportunities for dialogue, the program supports students in pursuing independent learning and planning for their future careers.

Approaches to Assuring and Enhancing Educational Quality

This degree program has established a framework to ensure and continuously improve the quality of education. By establishing an FD (Faculty Development) committee and continuously conducting inspections and improvements across all educational activities, we ensure the quality of education and strengthen the system aimed at achieving the objectives of the degree programs. Faculty members regularly engage in FD activities to exchange information on course content, teaching methods, and curriculum design. These discussions contribute to the ongoing review and enhancement of the program's overall educational offerings. In addition, student feedback collected through course evaluation surveys is carefully considered. When necessary, adjustments are made to teaching methods and course content in response to student input. This flexible and ongoing approach supports the continuous improvement of educational quality.

Doctoral Program in Humanities

■ Doctor of Philosophy in Humanities

Program Educational Objectives

The Doctoral Program in Humanities prepares students to possess the advanced research and education abilities on an international level in the areas of humanities, including philosophy, ethics, religion, history, anthropology, literature, linguistics, culture studies and English language education, in order to adapt to changes in the circumstances surrounding humanities research and education and to social changes that arise with globalization. Moreover, the Program thereby cultivates university faculty members, researchers and so on who can engage themselves in interdisciplinary research or education by carrying out cross-disciplinary research that aims to identify and solve new global problems.

Graduate Profile	He or she should possess the advanced specialized knowledge in the areas of humanities and the ability to independently carry out their ingenious research from a wide perspective to solve modern problems.

Diploma Policy

The degree of Doctor of Philosophy in Humanities is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of humanities.	①If the ability to set leading-edge research tasks in the areas of humanities was acquired ②If the ability to carry out a research plan independently in the areas of humanities was acquired

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of humanities	①If leading-edge and advanced specialized knowledge in the areas of humanities was acquired ②If a comprehensive command of specialized knowledge in the areas of humanities was acquired
	8. Ethical view: Ethical view and ethical knowledge appropriate for researchers in the areas of humanities and deep ethical knowledge about the specific area of expertise	①If the ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of humanities were acquired ②If the deep ethical knowledge about the specific area of expertise was acquired
	9. Thinking ability: Ability to think affairs logically and draw conclusions based on the knowledge in one's own area of expertise and the deep scholarly knowledge in associated areas.	If the ability to think affairs logically and draw conclusions based on the advanced knowledge in one's own area of expertise and the deep scholarly knowledge in associated areas was acquired
	10. Total ability: Ability to position research findings into humanities and carry out research from a broad perspective	If the ability to position research findings into humanities and carry out research from a broad perspective was acquired
Guidelines for Assessing Learning Outcomes	− Learning outcomes are evaluated by confirming and evaluating the status of competences acquired based on the degree awarding policy at the end of each semester and at the time of submission of the doctoral dissertation using the "Achievement Evaluation Table (Rubric)". − After the guidance in seminars related to doctoral dissertation guidance in the first and second years, the main supervisor and sub-supervisor will conduct an interim evaluation in the second half of the second year based on conference presentations, paper submissions, and doctoral thesis outlines. − In the third year, the doctoral thesis concept is presented, and the main supervisor and deputy supervisor conduct a preliminary examination of the doctoral dissertation preliminary examination thesis, and the first stage of achievement review based on the rubric. − After submitting the doctoral dissertation, the dissertation review committee, consisting of two or more chief examiners and two or more associate examiners, conducts an open examination, and the second stage of achievement review is conducted based on the rubric.	
Evaluation Criteria for Degree Theses/ Dissertations	1. The research theme must be appropriately set and clear in significance and positioning. 2. Associated preceding researches must be covered and critically appraised. 3. The research method must be clearly presented. 4. The arguments must be appropriately composed and empirical and logical. 5. New academic findings must be included. 6. The appropriate format as a dissertation must be provided in adherence to research ethics. − Doctoral dissertations must be reviewed publicly by a review board which is set up with one chief reviewer and two or more sub-reviewers.	

Curriculum Policy

The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in humanities and social sciences, and to have the big picture in mind in humanities, society and business as well as the generic knowledge and ability that support the students to be active in diverse social scenes, along with the advanced research ability, leading-edge specialized knowledge and deep ethics in humanities that involve the nine areas of philosophy, ethics, religion, history, anthropology, literature, linguistics, culture studies and English language education.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, students are encouraged to take one credit from Graduate General Education Courses and Degree Programs' Common Courses. – The ability to create new knowledge to be able to contribute to future society is acquired with Graduate General Education Courses, etc. – The ability to plan and implement measures to identify and solve challenges from a higher perspective is acquired with Graduate General Education Courses, etc. – The ability to express the nature of academic findings positively and clearly is acquired with Graduate General Education Courses, etc. – The ability to accomplish objectives under one's leadership is acquired with Graduate General Education Courses, etc. – The high level of awareness and motivation to be internationally active and contribute to international society are acquired with Graduate General Education Courses, etc. – The ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of humanities and social sciences and the areas of humanities is acquired with Graduate General Education Courses, Major Subjects (seminar subjects), research supervision, doctoral dissertation creation, academic conference presentations, etc. – The leading-edge and advanced specialized knowledge and command of the areas of humanities and social sciences and the areas of humanities are acquired with Graduate General Education Courses, Major Subjects (seminar subjects), research supervision, doctoral dissertation creation, academic conference presentations, etc. – The ethical view and ethical knowledge appropriate for researchers in the areas of humanities and social sciences and the areas of humanities and the deep ethical knowledge about the specific area of expertise are acquired with Graduate General Education Courses (life, environment and research ethics subjects), Major Subjects (seminar subjects), research supervision, etc. – The ability to think affairs logically and draw conclusions based on the advanced knowledge in one's own area of expertise and the deep scholarly knowledge in associated areas is acquired with Major Subjects (seminar subjects), doctoral dissertation creation, academic conference presentations, etc. – The ability to position research findings into humanities and carry out research from a broad perspective is acquired with Major Subjects (seminar subjects), research supervision, etc.

Teaching and Learning Methods	– Students learn and take research supervision in accordance with a “learning plan” and a system of supervision, which are set up at the enrollment and the beginning of the year based on the research theme of each student. – Around the seminar subjects of each learning year, students gain more advanced and broader specialized knowledge while building their own research and making presentations to acquire the generic competences of “Competence of knowledge creation”, “Management competence”, “Communication competence”, “Leadership competence” and “Competence in Internationality” and the specific competences of “research ability”, “specialized knowledge”, “thinking ability” and “overall ability”. Students also acquire the specific competence of “ethical view” though seminar subjects and research supervision.

Admission Policy

Desired Student Profile	We seek candidates who have the great interest to the areas of humanities, the enthusiasm to sincerely work on research tasks, and the specialized knowledge, linguistic skill, logical thinking ability and discussion ability necessary to conduct research and who have motivation to open up a new interdisciplinary realm by not only pursuing specialty but also placing their own research into humanities.
Student Selection Process	To select out enrollments, candidates are required to take the general entrance exam. – In the general entrance exam, candidates are comprehensively evaluated with the written exam of a specialized subject and also an oral exam. For the specialized subject, candidates select one subject, which is associated to the areas of humanities, at the time of the application for enrollment; the selectable subjects are philosophy/thought, history/anthropology, literature, linguistics, modern culture studies, English language education, etc., and the exam, which includes some test items to solve on a specialized literature written in a foreign language (one language), evaluates the basic knowledge necessary for the research of the areas of humanities, the ability of logical thinking, the specialized knowledge of the area to be researched and the linguistic skill necessary for research. The oral exam, which has regard to the submitted master's thesis (or an equivalent paper), a research plan and other documents, evaluates the candidate's specialized knowledge of the area to be researched, the interest, enthusiasm and aptitude for research, and the motivation to contribute to the society through research, as well as the presentation ability, the communication ability, etc. The discussion ability for the candidate's own area of expertise is evaluated with the submitted master's thesis (or an equivalent paper).

Learning Support Framework

Academic Support	– In order to understand the degree of achievement of learning, all graduate students are required to prepare and submit a competence achievement evaluation form every semester. The supervisor conducts individual interviews based on the competence achievement evaluation table submitted by the graduate students, and provides guidance on how to proceed with effective learning while confirming the achievement status of general competences and specialized competences. – The course model is clearly stated in the course regulations, etc., and we devise ways to achieve step-by-step and effective learning. – The schedule for submitting papers is clearly stated, and after the interim presentation (hearing), a preliminary review committee is established, and after passing the preliminary examination, the main examination committee is established to accept papers and conduct public examinations. Underclassmen also participate in the public screening and use it as a reference for their own research and thesis writing. – Graduate students meet with their main supervisor at the beginning of each academic year and prepare and submit a research plan. After that, graduate students meet with their main supervisor and faculty members in related fields of expertise from time to time, which they use to write their dissertations. – Intensive guidance is provided by the main supervisor and associate supervisor for the publication of peer-reviewed papers in academic journals, which is a requirement for graduate students to submit doctoral dissertations. – Some Subprograms (SPs) provide support for the cost of participating in conferences (research presentations), copying and borrowing papers from other university libraries and journals, and language support (writing support, editing) for presentations (papers, oral presentations) and manuscripts in foreign languages. – Some SPs offer a course called "Overseas Research Project Practice" as a class for SP leaders, and credit includes participation in overseas international conferences, searching for materials, and conducting research abroad at partner universities (ultra-short-term). When implementing it, it is mandatory to prepare and submit their work under the guidance of the main supervisor, so that it is effective in the research plan that leads to the degree acquisition of the student. – We encourage applications for research support through external funding, such as student scholarships, and the main supervisor gives advice on preparing the application form. – In some classes conducted by each faculty member, we provide guidance on how to write English abstracts for submission to international conferences and write papers for submission to academic journals. – We recommend that you register your research achievements on Researchmap.

Opportunities for Peer Interaction	– In the courses (seminars) related to the writing of doctoral dissertations, graduate students, including master's students, are engaged in research discussions to deepen their respective research. – Graduate student-led research groups and reading clubs are held to deepen research exchanges among graduate students. – In some SPs, students practice discussions on their own through the editing, publication, and distribution of magazines run and published by graduate students. – In some SPs, during joint practical training between undergraduate and graduate students, exchanges are deepened through the auxiliary role of student guidance. – Some SPs hold recreation organized by graduate students to deepen exchanges between graduate students. – Centered on the tutor system, we deepen exchanges between international students and Japanese graduate students, and create an environment where graduate students can cooperate with each other on a daily basis and engage in research with peace of mind.
Opportunities for Student–Faculty Interaction	– We hold an orientation for the new academic year and hold a meeting between graduate students, including new students, and faculty members. – Throughout the year, interviews with faculty members, including supervisors, deputy supervisors, and graduate students are held at any time to enhance guidance. – Graduate students and faculty members hold "Graduate School Roundtable (Graduate Student Roundtable)" to receive various requests from students and provide support for the learning environment and student life. – Some SPs have organized recreation executive committees composed of student selection committees and faculty selection committees, and are considering creating more effective opportunities for students and faculty to interact under a new framework. – In order to help students choose their career paths after completion, some SPs hold open lectures with lecturers such as graduates who have found employment in research or professional positions multiple times a year, and provide a place for graduate students, graduates, and faculty members to interact.

Approaches to Assuring and Enhancing Educational Quality

– In acknowledging the qualifications of faculty members in charge of graduate schools, research and educational achievements are scrutinized in accordance with the established standards and procedures, and faculty members with sufficient qualifications and abilities are assigned to appropriate duties (research guidance, research guidance assistants, and class supervisors).
– When creating syllabi for class subjects, check sheets are used to check whether the syllabi for all subjects are appropriately created, which is useful for ensuring and improving the quality of education.
– In order to understand the degree of achievement of learning, all graduate students are required to prepare and submit a competence achievement evaluation form every semester, and individual instruction is provided.

- The steering committee and curriculum committee of each SP will evaluate students' learning outcomes and verify the appropriateness of the curriculum and guidance.
- Class evaluation questionnaires are conducted, and from the responses, improvements are made regarding lesson planning and class management.
- Thesis supervision seminars and doctoral dissertation presentations are held in which multiple faculty members participate, so that opinions can be obtained from faculty members other than the main supervisor and sub-supervisor.
- As for the visualization of educational results, we provide guidance on the systematic conduct of research, such as oral presentations, poster presentations, and paper presentations.
- We utilize the TA and RA systems to improve the educational and research capabilities of graduate students and foster career awareness through education and research support services.

Doctoral Program in International Public Policy

■ Doctor of Philosophy in International Public Policy

Program Educational Objectives

The Doctoral Program in International Public Policy guides students to base themselves on the advanced research ability founded in the international public policy disciplines in international relations, area studies, sociology, politics, economics, anthropology, public policy studies, etc. to become university faculty members, researchers or such who understand and analyze the nature of international problems, political, economic and social problems, etc. inside and outside Japan by way of a broader, interdisciplinary spectrum of points of view crossing over multiple fields and thereby can form global opinions with their ability of solving problems and proposing solutions on changing challenges.

Graduate Profile	He or she should possess the specialized knowledge concerning international public policy, and the international-level research ability based on the logical thinking and analytical ability for theory and demonstration. In addition, they should possess the advanced practical ability that contributes to the analysis, planning and execution of policy on the political, economic and social policy problems inside and outside Japan or the problems on individual communities and international relations.

Diploma Policy

The degree of Doctor of Philosophy in International Public Policy is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of international public policy	①If original research findings are created by approaching to tasks using advanced expertise concerning international public policy ②If capable of internally and externally transmitting research findings concerning international public policy, and based on it, capable of practicing education and supervision
	7. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of international public policy	①If analytical ability supported by the advanced expertise and logical thought in the areas of international public policy was gained ②If capable of looking to policy proposals and solutions concerning international public policy problems
	8. Ethical view: Ethical view and ethical knowledge appropriate for researchers in the areas of international public policy and deep ethical knowledge about the specific area of expertise	If capable of managing one's own research process based on high ethics

Guidelines for Assessing Learning Outcomes	− Through courses, especially "Project seminar", the instructor conducts a rigorous educational evaluation based on the student's research progress. − At the end of each semester, competence achievement evaluations are done, and through Project Seminar in the third year as well as preliminary and final examinations of doctoral dissertations, students can acquire research skills and presentation skills of their research results, based on the evaluations of main- and sub-supervisors, as well as the supervision over the evaluations conducted by the curriculum committee and the degree program office.
Evaluation Criteria for Degree Theses/ Dissertations	1. Specific research tasks must be set with a clear description of the significance and need of the research. 2. The research methods and analyses used must be appropriate to the research tasks. 3. The preceding researches in the same area must be sufficiently considered. 4. The entire dissertation must be logically developed with consistency. 5. The dissertation must be systematically structured and unified as an academic paper and have contents and style of presentation that could appear in single-volume books or scholarly journals. Note that released contents may be included. 6. Bibliography and references must be clearly shown in accordance with appropriate expressions and notational conventions. 7. The dissertation must be evaluated to show ingenuity and the potentiality of carrying out research activities independently in the future and contributing to bring new findings to the academic community. 8. Appropriate consideration must be paid for the handling of personal information and ethics. A dissertation for degree grant, if approved to meet all of the above criteria, passes with an oral exam included in the judgment. 【Review board members】 (1) A review board must be formed by a total of three or more reviewers who are faculty members of the Doctoral Program in International Public Policy, which are one chief reviewer (Must be a research supervisory faculty member) and two or more sub-reviewers (research supervisory faculty members or course teaching faculty members). If required, faculty members who do not belong to the Doctoral Program in International Public Policy (including faculty members, etc. of other universities' graduate schools or research institutes, etc.) can be added as sub-reviewers. (2) A review board must include two or more professors, in principle. One of the two professors can be one who does not belong to the Doctoral Program in International Public Policy, while half of the two or more professors in the board must be those who belong to the Doctoral Program in International Public Policy.

Curriculum Policy

The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in humanities and social sciences, and to have the big picture in mind in humanities, society and business as well as the generic knowledge and ability that support the students to be active in diverse social scenes, along with the advanced research ability, leading-edge specialized knowledge and deep ethical view for the research on international public policy that is cross-disciplinary across the areas of international relations, area studies, sociology, politics, economics, anthropology, public policy studies, etc.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, students are encouraged to take one credit from Graduate General Education Courses and Degree Programs' Common Courses. – The ability to create new knowledge to be able to contribute to future society is acquired with Graduate General Education Courses, Major Subjects (seminar subjects), etc. – The ability to plan and implement measures to identify and solve challenges from a higher perspective is acquired with Graduate General Education Courses, Major Subjects (seminar subjects), etc. – The ability to express the nature of academic findings positively and clearly is acquired with Graduate General Education Courses, Major Subjects (seminar subjects), etc. – The ability to accomplish objectives under one's leadership is acquired with Graduate General Education Courses, Major Subjects (seminar subjects), etc. – A high level of awareness and motivation to be internationally active and contribute to international society is acquired with Graduate General Education Courses, Major Subjects (seminar subjects), etc. – The ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of humanities and social sciences and the areas of international public policy is acquired with Major Subjects (seminar subjects), Seminar on International Public Policy Project, research supervision, doctoral dissertation creation, academic conference presentations, etc. – The leading-edge and advanced specialized knowledge and command of the areas of humanities and social sciences and the areas of international public policy are acquired with Major Subjects (seminar subjects), research supervision, doctoral dissertation creation, academic conference presentations, etc. – The ethical view and ethical knowledge appropriate for researchers in the areas of humanities and social sciences and the areas of international public policy and deep ethical knowledge about the specific area of expertise are acquired with Graduate General Education Courses (life, environment and research ethics subjects), Seminar on International Public Policy Project, research supervision, etc.

Teaching and Learning Methods	– Students are required to take Major Subjects (seminar subjects) as the basal learning. Through the discussions in seminars, students acquire the advanced specialized knowledge, research ability and International character for the tasks that each one works on and at the same time develop Competence of knowledge creation, Communication competence, and Leadership competence. – Taking Graduate General Education Courses is encouraged to complement the development of generic competences and ethics. – Toward the writing of a doctoral dissertation, the research process of each student is supported through the dissertation supervision by supervisory faculty members by way of “Seminar on International Public Policy Project” , etc., including the development of the Management competence and ethics. In addition, the advanced research ability in the areas of humanities and social sciences and international public policy is enhanced by setting their sights at the transmission of research findings, such as presentations in the academic community inside and outside Japan and the contribution of articles in specialized scholarly journals.

Admission Policy

Desired Student Profile	Through the writing of a master's thesis and social experience, he or she should gain the sophisticated logical thinking ability and specialized knowledge about the modern society and international problems lying in the globalized, complex world as well as the sensibility for grasping diverse social problems and political realities. We seek human resources who thereby can put actively their advanced expertise into practical use at work and verbalize concrete policy proposals and solutions for the problems of modern society and international relations, using the advanced, flexible thinking ability and motivation that they have.
Student Selection Process	Diverse candidates are sought through the general entrance exam, recommendation entrance exam, the special selection for those who wish to complete the Program by taking only English-taught courses, and other enrollment selection methods. The entrance examination is offered multiple times each academic year, and a certain number of candidates are offered places after each examination. There are two entrance examination systems, as outlined below. – First, in the general entrance exam system, candidates are comprehensively evaluated through written exams in a specialized subject, a foreign language, as well as an oral exam. For example, for the specialized subject area, when filling up the enrollment application, candidates designate one subject area that is associated with international public policy such as international relations, social development, anthropology, sociology, politics, area studies, or economics, etc. Through answering a written exam question focusing on their designated area, the exam evaluates the candidate's logical thinking ability, specialized knowledge of the area to be researched, and sensitivity to social and political problems. The oral exam focuses on the candidate's research plan for his/her master's thesis, including evaluating ability to make use of advanced expertise in actual work actively, advanced and flexible thinking ability and motivation to propose policy to social and political problems, and specialized knowledge of the area to be researched. Candidates are also evaluated on other factors such as their presentation and communication skills.

Student Selection Process	– Second, in the recommendation entrance exam system, candidates are evaluated comprehensively by writing a paper as a written exam and undergoing an oral exam. Faculty members with experience in instructing candidates at the undergraduate level, including sufficient knowledge of candidates' abilities, personality, and individual qualities, prepare a written recommendation for the candidates. Faculty members will confirm that candidates have already acquired the specialized knowledge, continuous research ability, and foreign language command necessary for postgraduate research in areas related to international public policy. The paper submitted by candidates as the written examination for this system demonstrates that they possess specialized knowledge of the area to be researched and the flexibility to apply actual expertise in their chosen area. In the oral exam stage, which also includes the faculty-member recommendation and the candidate's research plan, candidates are evaluated on the possibility of their achieving their research plan, their enthusiasm and motivation for research, their specialized knowledge of their chosen research area, and their overall research skills, as well as their presentation and communication skills. – Special selection methods are applied to early-career civil servants and other currently employed young professionals in developing and emerging countries. These comprehensive methods include document screening and an oral exam. Document screening involves examining the candidate's research plan, including basic knowledge and the possibility of achieving the research plan, as well as transcripts. The oral exam, which is based on the candidate's submitted documents, evaluates research ability, specialized knowledge of the research field, research plan relevance and the candidate's possibility of achieving the research plan's objectives. The candidate's enthusiasm and motivation for research, as well as presentation and communication skills, are also evaluated.

Learning Support Framework

Academic Support	– We provide information about university initiatives (such as writing support) and encourage students for active participation. – In addition to explaining how to proceed with learning during orientation at the time of enrollment, one main advisor and at least two co-advisors jointly provide study support to students. Supervisors, Curriculum Committee, Student Committee, and the administrative staff in charge of students provide support to students as needed. – By publicizing seminars led by external lecturers, we are creating a learning environment that can accommodate students' diverse research interests.
Opportunities for Peer Interaction	In the Master's and Doctoral Programs in International Public Policy, meetings are held once or twice a year where master's and doctoral students, along with faculty members, discuss the environment and work to improve the learning environment.

Opportunities for Student–Faculty Interaction	To promote interaction between students and faculty, and to provide opportunities to gather students' opinions regarding the research environment, informal discussion sessions (e.g., tea gatherings) are held at least twice a year.

Approaches to Assuring and Enhancing Educational Quality

- The curriculum committee, through evaluating learning outcomes of students, verify the appropriateness of the curriculum and the suitability of instruction. Specifically, syllabus checks are performed at the initiative of the curriculum commitee in order to confirm whether the course content is appropriate to the aims of the degree program, and whether the necessary information is provided to students.
- The curriculum committee plays a central role in reviewing and improving overall educational activities of the degree program in order to ensure the quality of education and the aims of the degree programs.

Doctoral Program in International and Advanced Japanese Studies

■ Doctor of Philosophy in International and Advanced Japanese Studies

Program Educational Objectives

This program aims to cultivate researchers and educators who, in a globalized society, can investigate Japanese culture and society from international and comparative perspectives, bridging the fields of the humanities, social sciences, and Japanese language education. Furthermore, it seeks to foster advanced, specialized, and international scholarly expertise in these three domains, nurturing human resources of world-class caliber capable of disseminating their research outcomes both domestically and internationally.

Graduate Profile	We aim to nurture graduates who possess broad specialized knowledge and comprehensive perspectives necessary for elucidating the characteristics of contemporary Japan from a global viewpoint. Through acquisition of fundamental academic skills and engagement with related fields, they will develop the ability to assume positions in advanced professional and research roles. In addition, in the field of Japanese language education, the program cultivates highly specialized professionals who possess the research and teaching capacity to deepen international research and education domain, and to disseminate specialized knowledge to the world.

Diploma Policy

The degree of Doctor of Philosophy in International and Advanced Japanese Studies will be conferred upon those who have fulfilled the requirements for completion of the doctoral program as stipulated in the University of Tsukuba Graduate School Regulations and other relevant provisions, and who are recognized as having acquired the following knowledge and abilities.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge Generation: Ability to create new knowledge that can contribute to future society.	①Does the research outcome constitute the creation of new knowledge? ②Is there potential to create knowledge that contributes to the future of human society?
	2. Management Skills: The ability to identify issues from a comprehensive perspective, and to plan and implement strategies for resolution.	①Can the doctoral student formulate long-term plans and execute them appropriately in relation to issues within International and Advanced Japanese Studies? ②Does the candidate possess the ability to identify issues outside their specialization and resolve them from a comprehensive perspective?
	3. Communication Skills: The ability to convey the essence of academic outcomes actively and comprehensibly.	①Can the student explain the essence of their research and expertise clearly and logically to researchers from other fields as well as to non-specialists? ②Can the student actively present their research outcomes to specialists in their field and respond appropriately to questions?
	4. Leadership Skills: The ability to exercise leadership and achieve objectives.	①Can the student set goals that are both socially meaningful and persuasive? ②Can the student establish the necessary framework to achieve those goals, take initiative as a leader, and accomplish results?
	5. International Perspective: High awareness of and motivation to act internationally and contribute to the global community.	①Does the student demonstrates high awareness and motivation for contributing to international society and engaging in international activities. ②Does the student possess sufficient language skills for international activities
	6. Research Skills: The ability to independently set advanced research agendas in the field of International and Advanced Japanese Studies, and to carry out research plans based on the latest specialized knowledge.	①Has the student acquired the ability to set advanced research agendas in the field of International and Advanced Japanese Studies? ②Has the student acquired the ability to independently implement research plans in this field?
	7. Specialized Knowledge: Advanced and cutting-edge expertise in the field of International and Advanced Japanese Studies, together with the ability to apply such knowledge effectively.	①Has the student acquired cutting-edge and advanced specialized knowledge in the field of International and Advanced Japanese Studies ②Has the student acquired comprehensive application ability of specialized knowledge in this field?
	8. Ethics: Ethical awareness and knowledge appropriate for researchers in International and Advanced Japanese Studies, as well as deep ethical knowledge specific to one's field of specialization.	①Has the student acquired ethical awareness and knowledge appropriate for researchers or highly specialized professionals in International and Advanced Japanese Studies? ②Has the student acquired deep ethical knowledge regarding their specific field of specialization?

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is objectively confirmed and assessed based on the degree of achievement as outlined in the "Achievement Evaluation Table", reflecting the acquisition status of competences according to the policy for the conferment of degrees at each stage. The stages and methods of achievement evaluation are indicated below. This degree program has established a systematic and rational framework for assessing and evaluating the knowledge and competences outlined in the "Degree Conferment Policy (Diploma Policy)". Specifically, students are required to regularly complete "Competence Sheets" each semester, which serve as a self-assessment mechanism for recording the status of credits earned in relation to each competence and monitoring learning progress. After formal verification and feedback from the administrative office, content reviews are conducted between supervising faculty and students, with a system in place for faculty observations to be recorded.The Curriculum Committee then confirms this, and finally, the status of competence scores is evaluated by each individual's thesis examination committee during the thesis assessment, which helps support learning and adjust study plans. Through this process, students' learning outcomes can be assessed not only in terms of the number of credits earned, but also through numerical evaluation of achievement status in each competence area. Furthermore, the competence scores acquired in different areas are visually presented through charts (such as radar charts) for clear visualization. This enables individual students to clearly understand which areas of competence have been acquired to what extent and which areas require focused attention in the future.
Evaluation Criteria for Degree Theses/ Dissertations	(Examination System) (1) Among the members of the examination committee (examining faculty), at least one chief examiner (research supervisor) and two co-examiners (research supervisors or course instructors), totaling three members, shall be appointed from the faculty members of the relevant degree program. The chief examiner and at least half of the co-examiners shall be appointed from among the members of the Doctoral Program in International and Advanced Japanese Studies. (2) At least one examination committee member belonging to the Degree Program in International and Advanced Japanese Studies, Doctoral Program, Graduate School of Humanities and Social Sciences, should hold a doctoral degree. (3) At least one examining faculty member belonging to the Degree Program in International and Advanced Japanese Studies, Doctoral Program, Graduate School of Humanities and Social Sciences, should, after the dissolution of the examination committee, continue for at least one year to serve as a supervising faculty member on the Education Council of the Degree Program in International and Advanced Japanese Studies, Doctoral Program. (4) A faculty member at the University of Tsukuba who is not course instructor of a graduate school or degree program may be appointed as a co-examiner to the examination committee if deemed necessary for the relevant thesis examination. (5) Faculty members from other graduate schools/degree programs within the University, as well as faculty from graduate schools or research institutes outside the University, may be appointed as co-examiners of the examination committee if deemed necessary.

Evaluation Criteria for Degree Theses/ Dissertations	(Evaluation Criteria) Degree dissertation examination is conducted based on the following criteria: ① The research questions are appropriately set and demonstrate originality. ② The argument is clear and consistent. ③ The analysis is conducted accurately and employs accurate terminology. ④ Prior research has been sufficiently understood and utilized in a constructive manner. ⑤ Reference materials and other resources are appropriately used. ⑥ The format and structure are appropriate. ⑦ The dissertation attains a high academic standard within the relevant field and demonstrates new scholarly contributions. (Evaluation Standards) Dissertations that satisfy all the above evaluation criteria and have cleared the review process along with competence checks, criteria shall be deemed successful.

Curriculum Policy

In the Degree Program in International and Advanced Japanese Studies, education and research guidance are provided to cultivate advanced research ability, cutting-edge specialized knowledge, and a profound sense of ethics that cut across the three domains of the humanities, social sciences, and Japanese language education. At the same time, the program fosters a broad foundation in the humanities and social sciences, a wide perspective extending to the humanities-related business sector, and general knowledge and skills that enable graduates to play active roles in diverse areas of society.

Curriculum Design Framework	Based on each student's primary research interests, the curriculum is designed to promote the acquisition of foundational learning in related fields, broader perspectives, and general competences. To this end, students are encouraged to take at least one credit from Graduate General Education Courses and Degree Programs' Common Courses. – Through Graduate General Education Courses, Project Seminar 3A, 3B, 4A, 4B and other Major subject, research program development, doctoral dissertation preparation, and presentation at academic conferences, students acquire the ability to generate new knowledge that contributes to the future of society (1. Knowledge Generation Skills). – Through Graduate General Education Courses, Project Seminar 3A, 3B, 4A, 4B and other Major subject, self-assessment of achievement, and participation in external contests, students acquire the ability to identify issues from a comprehensive perspective and to plan and implement strategies for their resolution (2. Management Skills). – Through Graduate General Education Courses, Project Seminar 3A, 3B, 4A, 4B and other Major subject, academic conference presentations, and poster presentations, students acquire the ability to convey the essence of academic outcomes actively and in an accessible manner (3. Communication Skills). – Through Graduate General Education Courses, Project Seminar 3A, 3B, 4A, 4B and other Major subject, TA (graduate seminar, etc.) experience, and project participation experience, students acquire the ability to exercise leadership and achieve objectives (4. Leadership).

Curriculum Design Framework	− Through Graduate General Education Courses, Comparative Literature 2A and other Major subject, overseas activity experience, joint research with foreigners (including international students), TOEIC, international conference presentations, and English paper preparation, students acquire strong awareness of and motivation for international activities and contributions to global society (5. International Perspective). − Through Graduate General Education Courses, Project Seminar 3A, 3B, 4A, 4B and other Major subject, research program development, research guidance, doctoral dissertation preparation, and academic conference presentations, students acquire the ability to independently set advanced research agendas in the humanities, social sciences, and International and Advanced Japanese Studies, and to carry out research plans (6. Research Skills). − Through Graduate General Education Courses, Comparative Literature 2A and other Major subject, research program development, research guidance, doctoral dissertation preparation, and academic conference presentations, students acquire advanced and cutting-edge expertise in the humanities, social sciences, and International and Advanced Japanese Studies, together with the capacity to apply such knowledge effectively (7. Specialized Knowledge). − Through Graduate General Education Courses (Life, Environment, and Research Ethics Course Group), Project Seminar 3A, 3B, 4A, 4B and other Major subject, and research supervision, students acquire ethical awareness and knowledge appropriate for researchers in the humanities, social sciences, and International and Advanced Japanese Studies, as well as deep ethical knowledge specific to their chosen field of specialization (8. Ethics).
Teaching and Learning Methods	− Project Seminar aims to deepen research while enhancing presentation skills by having students present their doctoral dissertation proposals or interim results before multiple faculty members and doctoral students. − Other Major subject aim to refine the doctoral dissertation proposal, while acquiring a broad range of relevant knowledge, through advanced seminars in fields closely related to the student's research topic. − Achievement standards are set for each of the eight competences. The goal is to achieve at least 50% of the standard by the end of the first year, at least 70% by the end of the second year, and to fully meet the standard by the end of the third year. The specific achievement standards will be announced separately to students. 1. Knowledge Generation 2. Management Skills 3. Communication Skills 4. Leadership Skills 5. International Perspective 6. Research Skills 7. Specialized Knowledge 8. Ethics

Doctoral Program in International and Advanced Japanese Studies /
Doctor of Philosophy in International and Advanced Japanese Studies

Admission Policy

Desired Student Profile	We seek students and working professionals who have the motivation to research Japanese culture and society from international and comparative perspectives, and based on the research outcomes, proactively engage with the various issues faced by the world—particularly Japan and East Asia. In the doctoral program, we broadly seek students and working professionals who are motivated to confront these challenges directly, either as researchers or as highly skilled professionals with advanced research abilities.
Student Selection Process	In selecting applicants, we employ various admissions pathways—general entrance examination, recommendation-based entrance examination, and special admissions for working professionals—to accommodate diverse applicants. Admission quotas are divided, and multiple entrance examinations are conducted in the same academic year. Admission opportunities are provided in April as well as October. **General Selection Process:** A written examination in the specialized subject and an oral examination are conducted, whereby applicants are comprehensively evaluated. For specialized subjects, applicants must select one field related to international Japanese studies at the time of application from the following fields: Politics, Economics; Literature, Culture, and Philosophy; Law, Society, Media, and Information; Linguistics; and Research in Japanese Language Education. Answers must be written in Japanese or English (only Japanese for "Research in Japanese Language Education"). This assesses specialized knowledge and abilities necessary to pursue advanced International Japanese Studies in the doctoral program, as well as expertise in the applicant's chosen field. Since the written examination is taken in the same language as that in which the doctoral dissertation will be written, linguistic proficiency is evaluated through the examination answers and through documents such as the master's thesis or research plan. Therefore, a separate foreign-language written test is not administered. The oral examination, based on the research plan and other submitted documents, evaluates academic achievements, critical thinking, language skills, passion and motivation for research, specialized knowledge in the intended research field, as well as presentation and communication skills. **Special Selection Process for Recommended Applicants:** A written examination (essay) and an oral examination are conducted, whereby applicants are comprehensively evaluated. This admissions pathway is intended for students who have obtained or are expected to obtain a master's degree and aim to secure research positions at universities or other research institutions, as well as for overseas university faculty and highly skilled professionals. Since applicants have obtained or are expected to obtain their master's degree, written examinations in specialized subjects are not conducted. Instead, specialized knowledge, comprehension, and logical reasoning ability—necessary to pursue advanced International Japanese Studies in the doctoral program—are evaluated through the essay. The oral examination, based on the research plan and other submitted documents, evaluates motivation to engage directly in International Japanese Studies, the quality of the research plan, reasons for applying to this degree program, specialized knowledge in the intended field, as well as presentation and communication skills.

Student Selection Process	**Special Selection Process for Working Individuals:** Applicants are evaluated through a written examination in a specialized subject and an oral examination. This pathway is intended for applicants who have professional experience. Applicants must select one specialized subject related to International Japanese Studies at the time of application from the following fields: Politics, Economics; Literature, Culture, and Philosophy; Law, Society, Media, and Information; Linguistics; and Research in Japanese Language Education. Answers must be written in Japanese or English (only Japanese for "Research in Japanese Language Education"). The evaluation assesses specialized knowledge and abilities necessary to pursue advanced International Japanese Studies in the doctoral program. The oral examination evaluates the applicant's research plan, awareness of issues gained through professional experience, specialized knowledge in the intended research field, as well as presentation and communication skills.

Learning Support Framework

Academic Support	To support advanced research activities in the doctoral program and promote the creation and dissemination of academic outcomes, the program offers a range of learning support initiatives. A travel grant system is in place to assist with expenses for conference presentations, encouraging students to actively participate in academic conferences both domestically and internationally. This fosters the ability to communicate research findings within the global academic community. In seminar courses, students report and discuss their research progress, engaging in dialogue with faculty and peers to refine their work and deepen academic thinking. Under the guidance of academic advisors, students also prepare presentation materials and practice delivery for conferences, cultivating the ability to effectively communicate their research to non-specialist audiences. These activities are incorporated into the curriculum as part of the Research Program Development course. Through this multi-layered support system, the program provides an environment in which doctoral students can grow into independent researchers.
Opportunities for Peer Interaction	This degree program promotes student-led interaction to enhance motivation and improve research quality. As part of this initiative, plenary meetings are held where doctoral students share their research, conference presentations, and fieldwork experiences. These sessions foster academic stimulation among students from diverse fields and interests. In seminar courses, students present their research under the guidance of multiple faculty members and engage in peer feedback with other graduate students. These interactions allow students to learn from each other's expertise and research approaches, contributing to deeper thinking and broader perspectives.

Opportunities for Student–Faculty Interaction	To support advanced research activities in the doctoral program, the program fosters close interaction between students and faculty, aiming to enhance research capabilities and the ability to disseminate academic outcomes. Plenary meetings provide opportunities for open discussion of research-related concerns and challenges. Based on pre-conducted student surveys, faculty share feedback during these sessions, enhancing transparency and two-way communication in educational management. In seminar courses, students engage in continuous dialogue with their academic advisors, allowing for in-depth exploration of research progress and issues. Through presentations and faculty feedback in these seminars, students refine their research and improve their ability to communicate scholarly work.

Approaches to Assuring and Enhancing Educational Quality

This degree program has established a framework to ensure and continuously enhance the quality of advanced research supervision and specialized education in the doctoral program. By establishing an FD (Faculty Development) committee and continuously conducting inspections and improvements across all educational activities, we ensure the quality of education and strengthen the system aimed at achieving the objectives of the degree programs.

Faculty members regularly engage in FD activities to share information on curriculum design and research supervision methods, supporting ongoing evaluation and improvement of the educational and research environment.

Student feedback collected through course evaluation surveys is carefully reviewed, and necessary adjustments are made to seminar content and instructional approaches to effectively support student research activities.

Master's Program in Law

Master of Law

Program Educational Objectives

To respond to the demand for human resources in the areas of business law, the Master's Program in Law seeks to develop and re-educate highly specialized professionals who possess the professional legal ability to present appropriate solutions for the legal problems that companies face in the modern society.

Graduate Profile	This program, which is intended for those who have certain working experience at a company, fosters highly specialized professionals who can solve diverse problems arising in the modern society using specialized legal knowledge and the legal way of thinking.

Diploma Policy

The degree of Master of Law is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Basic specialized knowledge: Basic way of thinking in law and basic specialized knowledge about the areas of business law.	①If the basic way of thinking was gained in law ②If basic knowledge was gained in the areas of business law
	7. Ability to investigate and analyze literatures and precedents: Ability necessary for business law research to investigate and analyze literatures, judicial precedents, etc.	①If the literacy to search and investigate on one's own gained to obtain literatures, judicial precedents, etc. necessary to learn or research in business law ②If obtained literatures, judicial precedents, etc. are accurately read and analyzed, and obtained information is sorted out

	Competences	Evaluation perspectives
Knowledge and Skills	8. Deep knowledge about the specific area of business law: Specialized knowledge necessary for the comprehension and research about at least one major area of business law	①If the deep knowledge about at least one major area of business law is gained and understood ②If capable of carrying out research based on the deep knowledge and comprehension about at least one major area of business law
	9. Thesis writing ability: Ability to write a thesis (Especially one supported by the problem awareness behind the experience as an adult member of society, etc.) based on the deep knowledge about at least one major area of business law	①If research is carried out and organized into a thesis with an appropriate research theme set up based on the deep knowledge about at least one major area of business law ②If the problem awareness behind the experience as an adult member of society, etc. is incorporated in research and is reflected in the thesis
Guidelines for Assessing Learning Outcomes	We will assess whether and to what extent students have acquired legal expertise and legal reasoning skills necessary to propose solutions to key issues in modern society, during the following opportunities. 1. The interim report sessions of master's theses in the fall of the second year. 2. The final oral exam by the end of the second year. All faculty members participate in both assessments in princeple.	
Evaluation Criteria for Degree Theses/ Dissertations	Evaluation items for degree thesis 1. The thesis must show originality (Especially, supported by the problem awareness behind the experience as an adult member of society, etc.). 2. A wide range of important literature is investigated, and based on the comprehension of it, one's own ideas are expanded. 3. References and bibliography must be appropriately shown. Review board members・Review method The review of degree theses requires the approval of the review board members formed by one chief reviewer and two or more sub-reviewers. As sub-reviewers, those who are not a full-time faculty member belonging to the Master's Program in Law can be added. A thesis for degree grant meeting all of the above evaluation items passes as a master's thesis with the final exam included in the judgment.	

Curriculum Policy

- Basic specialized knowledge: The Program offers an extensive range of subjects from foundation subjects in the area of business law to applied subjects in the areas of “Corporate Law”, “International Business Law”, “Intellectual Property Law”, “Social and Economic Law” and “Tax Law”.
- Ability to investigate and analyze literatures, etc.: The Program offers Legal Research and Writing to develop the ability to investigate and analyze literatures.
- Gain of deep specialized knowledge: The Program sets up seminars and other highly specialized subjects taught by full-time faculty members, and from the viewpoint of learning the latest working circumstances, some subjects are taught by professional practitioners as part-time faculty members.
  Moreover, the Program has subjects participated by those who have completed Seminar on Civil Law, Seminar on Commercial Law, Seminar on Tax Law, Case Study of Labor Law and so on and the doctoral program students, etc.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, the Program offers Degree Programs' Common Courses, Inter-disciplinary Foundation Courses to support students' research ability. The Program offers common Major Subjects and sets up subjects in the areas of “Corporate Law”, “International Business Law”, “Intellectual Property Law”, “Social and Economic Law” and “Tax Law” to gain specialized knowledge in these areas, and students gain advanced specialized knowledge through seminars, etc. Specifically, the following subjects are set up. Note that students can freely take any subjects in any area. – Common Major Subjects: Legal Research and Writing, Introduction to Business Law, Special Studies on Business Law, etc. – Major Subjects【Areas of corporate law】Contract Law, Property Law, Security Law, Corporation Law, Accounting and Law, Securities Exchange Law, Civil Procedure Law, etc. – Major Subjects【Areas of international business law】Conflict of Laws, International Economic Law, International Civil Procedure, etc. – Major Subjects【Areas of intellectual property law】Copyright Law, Patent Law, Unfair Competition Law, Trademark Law, Design Law, International Intellectual Property Law, etc. – Major Subjects【Areas of social/economic law】Antimonopoly Law, Labor and Employment Law, Social Security Law, Constitutional Law, etc. – Major Subjects【Areas of tax law】Tax Law on Business, Tax Procedural Law, International Taxation, etc. – Seminar, etc.: Security Law Seminar, Civil Law Seminar, Company Law Seminar, Seminar on Civil Procedure Law, Conflict of Laws Seminar, Intellectual Property Law Seminar, Antimonopoly Law Seminar, Labor and Employment Law Seminar, Social Security Law Seminar, Constitutional Law Seminar, Tax Planning seminars, etc.

Teaching and Learning Methods	– At the time of enrollment, each student is set up with supervisory faculty members in the specialized realm closest to the research theme that the student entered in his/her research plan, etc. Then, through learning the required subjects “Special Studies on Business Law I to VI”, each of the supervisory faculty members gives the student one-on-one supervision on learning. – As for the learning of Major Subjects, students are encouraged to select them around those in the area corresponding to their respective research plans and the issues in which he or she is interested, let alone take Common Major Subjects. To select the subjects to be taken in the area, a learning plan is created according to the student's need under the advice of the supervisory faculty member, and the student learns in accordance with the plan. – To complete the Program, students must earn 30 credits or more including the required subjects (Special Studies on Business Law I to VI) of six credits, and in addition, a master's thesis, which goes through the interim report and then is submitted in accordance with the regulations stipulated by the degree program, needs to pass its review and the final exam.

Admission Policy

Desired Student Profile	We seek candidates who have certain working experience at a company and have strong motivation to learn and enthusiasm to be able to develop the ability as highly specialized professionals to solve diverse problems arising in the modern society using specialized legal knowledge and the legal way of thinking.
Student Selection Process	Candidates are selected with a research plan and interview. – Research plan Candidates are evaluated around the problem setting ability, planning ability, specialized knowledge and other requirements for research. – Interview Candidates are evaluated around the basic legal thinking, logical thinking, critical thinking, the research ability, specialized knowledge, communication ability, etc.

Learning Support Framework

Academic Support	The "Legal Research and Writing" course at the time of enrollment explains how to research laws, cases, and literature, and how to cite previous studies appropriately. In February of the first year, a guidance session is held to support the writing of the master's thesis. To support students in comparative legal research and report writing, an on-demand workshop on Anglo-American legal bibliography is available.

Opportunities for Peer Interaction	Students have access at any time to the Master's Research Room and the Legal Information Room, which serve as venues for peer discussion and information sharing. In seminar-style courses, graduates actively participate and share research insights and academic advice with current students. A social gathering among current students and guraduates during the annual Homecoming Day serves not only to tighten their ties as fellow alumni, but also as an opportunity for cross-industry exchange without regard to age, gender or social status.
Opportunities for Student–Faculty Interaction	Small-group seminars and research workshops involving multiple faculty members are offered, providing students with opportunities to engage in discussions and receive research guidance not only from their primary advisors but also from other instructors. Joint research presentation sessions are held for each specialized legal field, where students can also receive advice and supervision from their co-advisors.

Approaches to Assuring and Enhancing Educational Quality

Assessments of learning outcomes and alumni surveys are conducted to evaluate the extent to which the knowledge and legal reasoning skills acquired during the program are utilized in their professional careers. Course-specific and program-wide student evaluations are also regularly analyzed to inform faculty development efforts aimed at ensuring effective course delivery.

Master's Program in Business Administration

■ Master of Business Administration

Program Educational Objectives

The Master's Program in Business Administration seeks to cultivate highly specialized professionals who can deal with new management problems that arise with changes in business and the complication of technologies.

Graduate Profile	He or she should possess specialized knowledge appropriate to the master's (business administration) degree, as well as the deep logical thinking ability and the ability to logically organize the content of thought. Specifically, the Program cultivates human resources who have the ability to identify business problems and to meld research and business and also who can take the initiative to pursue solutions with broad interests beyond the area of expertise. These human resources also include those who have the interests and knowledge about academic approaches as well as the ability to apply them to research themes which are based on business challenges, let alone who have the problem awareness rooted in business.

Diploma Policy

The degree of Master of Business Administration is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Ability to think from various management perspectives: Ability to have deep specialized knowledge about work and think from various perspectives such as of strategies, organizations, finance and marketing.	①If extensive knowledge about business administration and business science was gained ②If management challenges, etc. other than those in one's own area of expertise (including industries, job categories, etc.) are understood and if capable of debating them
	7. Ability to identify management problems: Ability to identify and clarify problems from work scenes on one's own	①If one identifies the whereabouts of management challenges based on one's gained knowledge ②If the nature of identified challenges is clarified and if capable of talking about them in one's own words to share with others

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability to solve management problems: Ability to repair problems in modern society from a new perspective by the systematization of knowledge and experience.	①If the theory of the quantitative or qualitative analysis methodology is understood and appropriately applied ②If obtained results are interpreted into one's own words to debate with others
	9. Ability to create new management knowledge: Ability to create new knowledge about work.	①If new management hypotheses or challenges is set up based on gained extensive knowledge
	10. Ability to practice management at work: Ability to put created knowledge into practice at worksites	①If gained extensive knowledge is applied as a bridge between theory and practice ②If the applicable range, etc. of gained knowledge is grasped
Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted through achievement evaluation based on the 'Achievement Evaluation Sheet'. This objectively verifies and evaluates the acquisition of competences, aligned with the diploma policy, at each of the following stages. The stages and methods of achievement evaluation are detailed as follows. Achievement evaluations concerning the ten areas of competences specified in the diploma policy are conducted at the following times: from July to September of the first year, at the end of the first-year fall semester (before the overview presentation), around September of the second year (before the mid-term presentation), and around December of the second year (before the preliminary review), with reference to the respective evaluation criteria.	
Evaluation Criteria for Degree Theses/ Dissertations	The following seven items are used as evaluation items. 1. Identification of important problems or academically unsolved problems in management scenes 2. Presentation of the basic grasping of preceding researches and of the positioning of research tasks 3. Presentation of research objectives and methods 4. Appropriate construction and development of line of reasoning 5. Mention of academic contributions and working-level contributions 6. Adherence to research ethics 7. Appropriate citation of literature and the style of presentation compliant to rules In the thesis review and the final exam, the degree thesis review board formed by one chief reviewer and two or more sub-reviewers evaluates the thesis for degree grant, which contains the above evaluation items, and judges if the thesis is acceptance from the perspectives of degree thesis levels.	

Curriculum Policy

Students acquire the research ability, specialized knowledge and ethical view in the three realms of business administration, mathematical science and information science that are required of highly specialized professionals and also obtain education that incorporates the basic skills and generic knowledge of business law around the Degree Programs' Common Courses.
Lecture subjects concentrate on the strategies and organizations, marketing, accounting and finance that are commonly considered to be the core realms in business administration, while embracing the realms associated to quantitative analysis and information technologies that are important when thinking of the modern management.
In the research aspect, through the research subjects assigned in each semester and the stage presentations, the Program progresses in phases, with the clarification of tasks, analyses in specialized manners, the summarization of results, and finally business feedback study.
In addition, a system of research supervision with multiple faculty members cultivates the ability to identify problems, logic forming skills and the ability to create new knowledge so that students acquire the ability to think from various perspectives.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, students are highly encouraged to take Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, Graduate General Education Courses. The Program concentrates on the management strategies and management organizations, marketing, accounting and finance that are commonly considered to be the core realms in business administration, while embracing the subjects of the mathematical and information associated realms. The Program is also designed to develop the abilities shown in Diploma Policy through research. Research includes the research plan presentation, overview presentation, mid-term presentation, preliminary review and final exam stages to help students organize their research activities be organized. Through a system of supervision with multiple faculty members, students acquire the ability to think from various perspectives. – The ability to think from various management perspectives is acquired with the Inter-disciplinary Foundation Courses “Top Lecture I and II”, etc. – The ability to identify management problems is acquired with the Degree Programs' Common Courses “Introduction to Business Management”, “Fundamental Accounting”, etc. – the ability to solve management problems is acquired with the Major Subject “Consumer Behavior”, etc. – The ability to create new management knowledge is acquired with the Major Subject “Operations Research”, etc. – The ability to practice management at work is acquired with the Major Subjects “Marketing Research”, etc. – The ability to think from various management perspectives, ability to identify management problems, ability to solve management problems, ability to create new management knowledge, and ability to practice management at work are acquired with the research subject “Systems Management”, etc.

Teaching and Learning Methods	– Students learn from “General Foundation Subjects”, which provides basic education of the areas in business administration, “Major Subjects”, which lecture on specialized contents, “ Inter-disciplinary Foundation Courses”, which lecture on the basic literacy common in the Graduate School, and “Degree Programs' Common Courses”, which lecture on the basic literacy common in the degree programs. – Research is supervised around a chief supervisory faculty member through “research subjects”. From the second academic year, two sub-supervisory faculty members including those who are in other realms are added to the supervision to give support from diversified points of view. – For master's theses, a thesis review board is set up after the overview (research plan) presentation, mid-term presentation and preliminary review. Then, the thesis is reviewed along with the final presentation and final exam.

Admission Policy

Desired Student Profile	As the nature of the graduate school for adult members of society, students are required to have problem awareness rooted in business as a matter of course, but since it is handled in the form of research, the interest and knowledge about academic approaches also play the key roles. In the process of planning and carrying out research, students are required to keep an active attitude to give contemplation by the investigation of literature, etc. on their own and thereby lead to solutions. Moreover, since diverse students of different ages and backgrounds are intermingled, it is important to have broad interests beyond one's business operations in change or the realms of expertise.
Student Selection Process	Candidates are comprehensively evaluated with the following evaluations. – Research plan: Problem awareness, research approach, specialized knowledge, the usefulness, feasibility and ingenuity of research, sentence expressiveness – Paper: Broad interests and deep understanding of problems in business and society, logical thinking ability, sentence expressiveness – Oral exam: Research plan comprehension, specialized knowledge, motivation for learning and research, ability to express one's thought

Learning Support Framework

Academic Support	To enhance students' motivation, support is provided for conference presentation travel expenses, English proofreading costs, and access to financial databases.
Opportunities for Peer Interaction	Student interaction is promoted through classes incorporating group work, classes in which students exchange opinions on peers' research presentations, student research presentation sessions that actively solicit students' opinions, and opportunities for multiple students to receive joint research guidance.

Opportunities for Student–Faculty Interaction	Opinions on the overall education of the degree program are collected from students through surveys, and opportunities for dialogue with students are arranged based on the results.

Approaches to Assuring and Enhancing Educational Quality

[Competences]
At the Degree Program Faculty Meeting, the perspectives for evaluating the ten areas of knowledge and skills specified in the diploma policy are reviewed in light of students' learning progress.
[Research Supervision and Thesis Examination]
At the Degree Program Faculty Meeting, the progress of students' presentation stages and completion rates are monitored, and issues related to research guidance and thesis examination are identified and considered for improvement.
[Credits]
Each full-time faculty member examines the distribution of achievement evaluations for their courses in order to verify any bias in the distribution and to confirm the alignment between course learning objectives and teaching content/methods. The results of these examinations are shared at the Degree Program Faculty Meeting and are utilized to improve educational activities.
[Curriculum and Supports]
Based on information such as curriculum map reviews, student surveys, surveys of graduates two years after completion, feedback from corporate and other stakeholders, and confirmation of the number of students' publications in foreign languages, the Degree Program Faculty Meeting undertakes improvements to curriculum structure and student support activities.
[Faculty Development (FD)]
At the beginning of each academic year, the faculty member in charge of FD formulates an FD implementation plan and carries out activities aimed at improving organizational educational practices.

Doctoral Program in Law

■ Doctor of Philosophy in Law

Program Educational Objectives

To respond to the social demand for the development and re-education of highly specialized professionals, the Doctoral Program in Law seeks to develop highly specialized professionals who have comprehensive and advanced judgment ability to present appropriate solutions as to new types of legal problems faced by companies and society, as well as researchers who can effectively take advantage of such experience.

Graduate Profile	This course fosters highly specialized professionals who can solve diverse and complex problems in modern society through legal expertise and legal mind from their work experiences in companies, governmental organizations, professional services firms, etc., and who will lead the development of legal studies and legal practice.

Diploma Policy

The degree of Doctor of Philosophy in Law is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Advanced specialized knowledge, methodology and analysis ability: Advanced specialized knowledge, methodology and analysis ability to set up research tasks and carry out leading-edge, ingenious research based on logic and objective evidence	①If research tasks are set up and leading-edge, ingenious research is carry out based on logic and objective evidence ②If specialized knowledge, basic research methodology and analysis ability necessary for setting up research tasks and carrying out leading-edge, ingenious research were gained

	Competences	Evaluation perspectives
Knowledge and Skills	7. Ability to create new knowledge through the investigation/analysis of literatures, precedents, etc.: Ability to create new knowledge by interpreting human and social problems in a diversified, multilevel and comprehensive manner	①If literatures, precedents, etc. are appropriately investigated and analyzed, and human and social problems are interpreted in a diversified, comprehensive manner ②If new knowledge is created based on the investigation and analysis of literatures, precedents, etc.
	8. Deep understanding and scholarly knowledge about one's area of expertise: Practical ability to solve the problems we face today and to make efforts to contribute toward the continuous development of the society based on the deep understanding and scholarly knowledge about one's own area of expertise	①If practical ability was gained to solve the problems we face today based on the deep understanding and scholarly knowledge about one's own area of expertise ②If practical ability was gained to make efforts to contribute toward the continuous development of the society
	9. Extensive basic knowledge about the realms interdisciplinary to one's own area of expertise: Practical ability to solve the problems we face today and to make efforts to contribute toward the continuous development of the society based on the extensive basic knowledge about the realms interdisciplinary to one's own area of expertise	①If practical ability was gained to solve the problems we face today based on not only one's own area of expertise but also the interdisciplinary realms' extensive basic knowledge ②If practical ability was gained to make efforts to contribute toward the continuous development of the society
	10. Ability to pass down knowledge to the next generation through dissertation writing, etc.: Ability to pass down knowledge to the next generation with the appropriate transmission of advanced academic findings to the experts inside and outside Japan through dissertation writing, etc.	①If ability to pass down knowledge to the next generation was gained with the appropriate transmission of advanced academic findings to the experts inside and outside Japan through dissertation writing and other means

Guidelines for Assessing Learning Outcomes	We will assess whether and to what extent students have acquired legal expertise and legal reasoning skills necessary to propose solutions to key issues in modern society, during the following opportunities. 1. The mid-term presentation of doctor's theses in the second year. 2. The mid-term presentation of doctor's theses in the third year. 3. The preliminary review. All faculty members participate in both presentations in princeple. The assessment in the preliminary review is conducted by the preliminary review board.
Evaluation Criteria for Degree Theses/ Dissertations	Evaluation items for dissertation 1. The theme must be researched using comparative law methodology in relation to at least one major country or using demonstrative research, actual condition survey, historical research or economic methodology. 2. The theme must be critically analyzed with the organized collection and investigation of literatures and materials. 3. The student must have the specialized knowledge associated to the theme. 4. The dissertation must be highly original about the theme. Review board members・Review method The review of dissertations requires the approval of the review board members formed by one chief reviewer and four or more sub-reviewers. As sub-reviewers, one or more than one reviewer who is not a full-time faculty member belonging to the Doctoral Program in Law must be included. The public review board must be held at least once. A dissertation for degree grant meeting all of the above evaluation items passes as a doctoral dissertation with the final exam or the confirmation of academic ability included in the judgment.

Curriculum Policy

To develop the abilities listed in the above diploma policy (DP), the Program offers Special Studies (Individual Research) I to IX and also the many subjects requiring mainly the reading of foreign legal literature or handling foreign laws.

In addition, students are allowed to audit or attend the subjects of associated Programs, especially the subjects in which those who have completed a Program or withdrawn from the doctoral program with the completion of course requirement or general professionals, etc., such as Seminar on Tax Law, Case Study of Labor Law, Seminar on Commercial Law, which are subjects in the Master's Program in Law.

Moreover, Degree Programs' Common Courses and Inter-disciplinary Foundation Courses are offered in order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas. As required, faculty members in the Program in Business Administration (D), etc. are enlisted to support the writing of a doctoral dissertation with originality.

Curriculum Design Framework	The Program offers Common Major Subjects and Major Subjects. The Major Subjects relate to various research themes and correspond to each of the four areas of education and research in the Doctoral Program in Law, which are “company globalization”, “corporate organization and finance”, “information technologies and companies” and “social and economic law”. Specifically, the following subjects are offered. – Common Major Subjects: Special Studies (Individual Research) I to IX – Major Subjects (Area of company globalization): Comparative Corporation Law, International Tax Planning II, International Tax Planning IV, Seminar on American Civil Procedure Law, Seminar on German Procedure Law, Cross-Border Transactions and Private International Law, Foreign Capital Markets Law and Regulation – Major Subjects (Area of corporate organization and finance): Modern Corporation Law, International Corporate Law, Comparative Financial Law, Civil Law Advanced Seminar I & II, Advanced Seminar on Civil Law I to III – Major Subjects (Area of information technologies and companies): Intellectual Property Law and Information Products, Electronic Society and Law, Modern Intellectual Property Law, Business Know-how and Employment Relations, Intellectual Property Law in US and Europe, Intellectual Property Law in US, Intellectual Property in Comparative Law, Modern problems in Intellectual Property Law, Comparative Law of Intellectual Property – Major Subjects (Area of social and economic law): Antimonopoly Law in the Market Economy, Basic of Comparative Labor and Employment Law I & II, Modern Social Security Law

Teaching and Learning Methods	– Under the supervision and advice of supervisory faulty members, students take Major Subjects necessary for the writing of doctoral dissertation. – Students learn the extensive specialized knowledge and ability to be necessary as Doctor in the areas of law based on their interests and concerns. – In the aspects of research supervision, students systematically learn to carry out research activities in stages which include research plan, mid-term presentation (at least twice), preliminary review and final exam. Depending on the theme, students gain diversified thinking ability through a system of supervision by more than one faculty member.

Admission Policy

Desired Student Profile	The Program seeks human resources potential to be highly specialized professionals who have comprehensive and advanced judgment ability and a healthy critical spirit to present appropriate solutions as to new types of legal problems faced by companies and society, and also potential to be researchers who can effectively take advantage of such experience.
Student Selection Process	Candidates are evaluated with the following items, and with their corresponding abilities included, a comprehensive evaluation is made. – Research plan, thesis review (master's thesis or equivalent academic paper): Research task setup ability, planning ability, specialized knowledge, abilities such as logical thinking and the dispute-settlement ability based on the work experiences. – Written exam (foreign language, specialized subjects【law】): Ability to grasp the outline of legal text in a foreign language in a relatively short time. Specialized legal knowledge and discussion ability. Legal professional (a person with practical experience as judge, prosecutor or attorney-at-law) may be exempted from the written exam. – Oral exam: Motivation to research, ability related to specialized knowledge, communication ability

Learning Support Framework

Academic Support	To support students in comparative legal research and report writing, an on-demand workshop on Anglo-American legal bibliography is available.
Opportunities for Peer Interaction	Students have access at any time to the Doctor's Research Room and the Legal Information Room, which serve as venues for peer discussion and information sharing. In seminar-style courses, graduates actively participate and share research insights and academic advice with current students. A social gathering among current students and guraduates during the annual Homecoming Day serves not only to tighten their ties as fellow alumni, but also as an opportunity for cross-industry exchange without regard to age, gender or social status.

Opportunities for Student–Faculty Interaction	Small-group seminars and research workshops involving multiple faculty members are offered, providing students with opportunities to engage in discussions and receive research guidance not only from their primary advisors but also from other instructors. Joint research presentation sessions are held for each specialized legal field, where students can also receive advice and supervision from their co-advisors.

Approaches to Assuring and Enhancing Educational Quality

Assessments of learning outcomes and alumni surveys are conducted to evaluate the extent to which the knowledge and legal reasoning skills acquired during the program are utilized in their professional careers. Course-specific and program-wide student evaluations are also regularly analyzed to inform faculty development efforts aimed at ensuring effective course delivery.

Doctoral Program in Business Administration

■ Doctor of Philosophy in Business Administration

Program Educational Objectives

To respond to the social demand for the development and re-education of highly specialized professionals, the Doctoral Program in Business Administration develops highly specialized professionals who have comprehensive and advanced judgment ability based on the advanced specialized knowledge in business administration and objective management data analysis ability and thereby can present appropriate solutions as to new types of problems faced by companies and society, as well as researchers with international character who can effectively take advantage of such experience.

Graduate Profile	He or she should possess specialized knowledge appropriate to the doctoral (business administration) degree, and have the ability to detect problems, the conception ability and other abilities such as logical thinking, as well as the inspiration for solving challenges and the communication ability enabling sufficient debates.

Diploma Policy

The degree of Doctor of Philosophy in Business Administration is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Ability to carry out management research: Advanced specialized knowledge about business administration and the ability to carry out research from a business administration points of view and based on objectively conducted qualitative and quantitative analysis as a highly specialized professional	①If a long-term research plan is drawn up for important tasks based on specialized knowledge ②If a research plan is independently and appropriately executed

	Competences	Evaluation perspectives
Knowledge and Skills	7. Evidence base analysis ability for Management competence to conduct analysis using qualitative and quantitative data objectively taken for problem analysis from multifunctional points of view included in the areas of business administration and based on advanced specialized knowledge	①If objective facts are collected for important tasks ②If analysis is conducted based on collected objective facts
	8. Problem solving ability for Management competence to present solutions by building a management analysis model for problem solving that combines multifunctional measures included in the areas of business administration and advanced specialized knowledge	①If the theory of the quantitative or qualitative analysis methodology is understood and appropriately applied ②If obtained results are interpreted into one's own words to debate with others
	9. Ability to convey management knowledge: Ability to appropriately convey and develop advanced specialized knowledge and research findings in the areas of business administration whether in academic or working-level scenes	①If a rational description of the nature of specialized knowledge is provided ②If the nature of specialized knowledge is shared with others
	10. Ability to bequeath management knowledge: Ability to pass down one's own findings, and the advanced specialized knowledge and research outcomes in the areas of business administration to help potential younger talents inherit and develop them	①If the nature of specialized knowledge is understood ②If specialized knowledge is used and reflected in research

Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted through achievement evaluation based on the 'Achievement Evaluation Sheet'. This objectively verifies and evaluates the acquisition of competences, aligned with the diploma policy, at each of the following stages. The stages and methods of achievement evaluation are detailed as follows. Achievement evaluations concerning the ten areas of competences specified in the diploma policy are conducted at the time of the research plan presentation, at the end of the first year of the program, and at the drafting presentation, with reference to the respective evaluation criteria.
Evaluation Criteria for Degree Theses/ Dissertations	Evaluation requires the approval of the dissertation review board members formed by one chief reviewer and four or more sub-reviewers (including one or more reviewer who is not a full-time faculty member of the base organization setting up the dissertation review board). Evaluation items 1. Significance of research tasks 2. Comprehensive understanding and grasping of preceding researches inside and outside Japan 3. Precise presentation of research method, and its appropriateness 4. Appropriateness and significance of demonstration method and conclusion 5. Format and style of presentation of dissertation In the dissertation review and the final exam, the dissertation for degree grant, which contains the above evaluation items, is evaluated and judged if it is acceptable from the perspectives of degree dissertation levels.

Curriculum Policy

The Program is designed to provide students with systematic curriculum which is not unbalanced to either theory or practice and pays appropriate attention to cultivate a breadth of basic skills in associated areas with this major, and the big picture in mind in business, humanities and society as well as the generic knowledge and ability that support students to be active in diverse social scenes, along with more advanced specialized knowledge and ability concerning the areas of business administration. Particularly, the Program actively provides students with opportunities to increase their understanding to the modern challenges surrounding business and science. In addition, as a night graduate school for adult members of society, the Program is formulated to be efficient and effective by the rational deployment of subjects, for example, which are principally based on the class hours of weeknights and on Saturdays.

Curriculum Design Framework	The Program concentrates on the management strategies and management organizations, marketing, accounting and finance that are commonly considered to be the core realms in business administration, while embracing the lecture subjects in the realms associated to mathematical science, system science and informatics typical of quantitative analysis that is important in enhancing the sophistication of the modern management. The Program is also designed to develop the abilities shown in Diploma Policy through special research and research investigation, etc. In research aspects, six stage milestones——research plan, survey dissertation, mid-term dissertation, drafting, preliminary review, final exam——are provided to help students organize their research activities. Through a system of supervision with multiple faculty members, students acquire the ability to think from various perspectives. – The ability to carry out research, the evidence base analysis ability and problem solving ability are acquired with “Fundamentals in Strategic Management” and other Major Subjects. – The ability to convey management knowledge and to bequeath management knowledge in addition to the ability to carry out research, evidence base analysis ability and problem solving ability are acquired with “Advanced Seminar in Business Management”, etc. in the research subjects. – In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, students are encouraged to take one credit from Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, Graduate General Education Courses. – With research supervision, students acquire the ability to carry out research, evidence base analysis ability and problem solving ability as well as the ability to convey and bequeath knowledge.

Teaching and Learning Methods	– Under the supervision and advice of supervisory faulty members, students take the Major Subjects necessary for driving the doctoral dissertation research forward. – Students learn the extensive specialized knowledge and ability to be necessary as Doctor in the areas of business administration based on their interests and concerns. – In research supervision aspects, six stage milestones——research plan, survey dissertation, mid-term dissertation, drafting, preliminary review, final exam——are provided to help students organize their research activities. Through a system of supervision with multiple faculty members, students acquire the ability to think from various perspectives.

Admission Policy

Desired Student Profile	To carry out doctoral dissertation research rooted in the awareness of business problems as adult members of society, the Program seeks human resources who have a strong interest in advanced academic approaches in the areas of modern business administration and have specialized knowledge and ability. In the process of planning and carrying out research, students are required to keep an active attitude to investigate and think on their own and have broad interests beyond one's business operations in change or the realms of expertise.
Student Selection Process	Candidates are comprehensively evaluated with the following evaluations. – Submitted thesis and research plan: Objectives of research, appropriateness of research method, the usefulness, novelty and sentence expressiveness of research – Foreign language exam (Substituted by TOEIC): Communication ability in English – Interview: Presentation ability, motivation for research, discussion ability

Learning Support Framework

Academic Support	To enhance students' motivation, support is provided for conference presentation travel expenses, English proofreading costs, and access to financial databases.
Opportunities for Peer Interaction	Student interaction is promoted through classes incorporating group work, classes in which students exchange opinions on peers' research presentations, student research presentation sessions that actively solicit students' opinions, and opportunities for multiple students to receive joint research guidance.
Opportunities for Student–Faculty Interaction	Opinions on the overall education of the degree program are collected from students through surveys, and opportunities for dialogue with students are arranged based on the results.

Approaches to Assuring and Enhancing Educational Quality

[Competences]
At the Degree Program Faculty Meeting, the perspectives for evaluating the ten areas of knowledge and skills specified in the diploma policy are reviewed in light of students' learning progress.
[Research Supervision and Thesis Examination]
At the Degree Program Faculty Meeting, the progress of students' presentation stages and completion rates are monitored, and issues related to research guidance and thesis examination are identified and considered for improvement.
[Credits]
Each full-time faculty member examines the distribution of achievement evaluations for their courses in order to verify any bias in the distribution and to confirm the alignment between course learning objectives and teaching content/methods. The results of these examinations are shared at the Degree Program Faculty Meeting and are utilized to improve educational activities.
[Curriculum and Supports]
Based on information such as curriculum map reviews, student surveys, surveys of graduates two years after completion, feedback from corporate and other stakeholders, and confirmation of the number of students' publications in foreign languages, the Degree Program Faculty Meeting undertakes improvements to curriculum structure and student support activities.
[Faculty Development (FD)]
At the beginning of each academic year, the faculty member in charge of FD formulates an FD implementation plan and carries out activities aimed at improving organizational educational practices.

Law School Program

■ Juris Doctor

Program Educational Objectives

The Law School Program cultivates legal professionals to meet all of the following four characteristics.

- Capable of putting the knowledge, experience and skills already gained as an adult member of society into the actual work of legal profession
- Well-rounded human nature and perception as well as high ethics as a legal professional
- Ability to apply specialized legal knowledge to concrete dispute solution and solve new problems flexibly with the appraisal of existing ideas
- Capable of contributing to social development with a sufficient understanding of leading-edge legal areas

Graduate Profile	Specifically, the Program cultivates legal professionals as mainly described below (any of them depending on the backgrounds and goals of individuals), while, whether in any case, the knowledge, experience and skills owned by adult members of society are utilized. - Human resources to whom the civilian population can easily access to solve legal disputes such as general civil or criminal cases, household disputes, illegal activities and consumer problems - Human resources who can use advanced specialized knowledge to plan national or municipal policy - Human resources such as corporate personnel in charge of legal affairs who can use advanced specialized knowledge in the leading-edge areas of law, including global business, social security law and intellectual property law - Human resources of well-rounded human nature backed up by social experience

Diploma Policy

The degree of Juris Doctor is commenced to those who have fulfilled the requirements for the completion of the Professional degree programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Legal mind: Ability as a working-level legal professional to grasp appropriately legal problems out of concrete cases and solve them	①If the basic and systematic knowledge about basic laws and the legal thinking ability were gained ②If applied and classic legal knowledge and comprehensive interpretation ability for the legal problems in relation to basic laws were gained ③ If the understanding of laws different from that for positive laws was gained
	2. Awareness of mission, development of ethical view, work processing and solving: Advanced professional awareness and specialized ability to practically process and solve legal dispute cases	①If basic skills necessary for legal professionals are gained ②If the overview of lawsuits is understood through concrete problems concerning lawsuit work ③ If lawsuit work is experienced through firsthand cases or simulated trial
	3. Meeting leading-edge challenges: Ability to appropriately meet leading-edge legal challenges that arise with social transition	If specialized knowledge about the leading-edge and applied areas of law is gained
Guidelines for Assessing Learning Outcomes	To complete the program, students are required to possess four qualities: the ability to utilize the knowledge, experience, and skills they have already acquired as working adults in their work as legal professionals; rich humanity and sensitivity, as well as a strong sense of ethics as legal professionals; the ability to apply specialized legal knowledge to specific dispute resolutions and the ability to criticize existing ways of thinking and flexibly solve new problems; and the ability to fully understand cutting-edge legal fields and contribute to the development of society. To this end, drafting (writing) ability is assessed through a written examination for bar exam subjects, while in other subjects, the sensibility and ethics of a legal professional, as well as legal knowledge and application ability in cutting-edge legal fields, are assessed primarily through reports. Drafting (writing) ability is assessed based on the ability to identify problems in specific cases, interpret legal provisions, create solution standards, and construct answers using legal syllogisms. In addition, for the students in the Course for Students without Legal Background, the requirement for promotion from the first to the second year is to achieve a certain score in the common achievement assessment, which is a multiple-choice test, as determined by the department and specified in the "Course Guide". This ensures that students have a firm grasp of the basic knowledge and concepts of the Constitution, Civil Law, and Criminal Law.	

Curriculum Policy

To allow students as working adult members of society, who in reality can involve themselves in daily learning only for a very limited length of time, to effectively gain systematic knowledge of law, the Program offers systematic and repetitive education with the adoption of a three-stage system of subjects for the basic legal subjects that especially demand systematic knowledge. With this, students seek to complete the acquisition of specialized legal knowledge, thinking ability, analytical ability, expressive ability, etc. that are necessary for actual work as legal professionals.

Curriculum Design Framework	The curriculum is organized for adult members of society with working experience including those who are and who are not legal professionals passing the bar exams, so that they will be able to deliver a variety of legal services. – With the basic legal subjects, students acquire extensive legal qualities, that is, the legal mind. – With the practical basic legal subjects, which use concrete dispute cases as study materials, students learn the techniques for practically processing legal problems and directing themselves to resolution. – With the legal basic/interdisciplinary subjects, students expand their horizon to a greater understanding of law from a point of view different from that for positive laws. – With the developed/leading-edge subjects, students gain the proficiency that can work with the leading-edge legal problems arising in the actual society.
Teaching and Learning Methods	– The Program includes “Course for Students without Legal Background” intended for students with no legal study background (to be completed by 3 years) and “Course for Students with Legal Background” intended for students with legal study background (to be completed by 2 years). – The “extension system” is available to meet the need of working adult members of society who manage to work their way through school to seek to be certified as legal professionals. The use of this system permits students with no legal study background to extend the learning period to four years if the period of three years, which is the standard limit to complete the Program, is estimated to be insufficient due to their circumstances such as reasons related to their work condition. For students with legal study background, the period permitted to extend using this system is up to three years. – For students who never have learned law in earnest before the enrollment in the Program, we also highlight introduction training such as basic seminars, etc. – The Program is committed to structuring a system that allows working students to learn out of the classroom (on occasions of a business trip, etc.) through ICT (information and communications technology). – To operate as a practical legal professional, students are required to have the attitude to appropriately grasp where a legal problem lies in the case in dispute through conversation with concerned parties, then determine the course of action to take for the problem, and finally enter the actual negotiation to lead the problem to resolution. Therefore, to see whether students have acquired these capabilities, the Program places emphasis on how they react in the classes in which an interactive style is basically adopted.

Admission Policy

Desired Student Profile	He or she should be an adult member of society with working experience, etc. who wish to gain the ability to identify and logically analyze legal problems to deliver legal services in the future by linking legal knowledge and skills to the knowledge, experience and skills that they now already possess.
Student Selection Process	【Candidates with no legal study background】 ①First exam: Written exam Successful candidates are selected with the score of the written exam. The written exam gives such tasks that can appropriately evaluate the candidates' ability in reading, logical thinking, analysis and discussion. ②Second exam: Oral exam and document screening (Only for successful candidates of the first exam) Each candidate is separately interviewed to see if they have the qualities, noble goals and enthusiasm to be a legal professional. Then, the acceptance of candidates (final successful candidates) is decided up to the overall evaluation including the evaluation of the oral exam, the undergraduate performance, etc. provided in the submitted application documents, remarkable linguistic qualifications, other qualifications, and the relationship between the candidate's experience as an adult member of society and the reason for wishing to learn in the Law School Program and be a legal professional. 【Candidates with legal study background】 Candidates are required to take a legal subject essay exam as the first exam (written exam) to evaluate if they are recognized as a learned individual versed in required basic knowledge of law. The successful candidates of the first exam are decided with the score of the written exam (legal subject essay exam), and they are placed to take the second exam (oral exam and document screening) to select final successful candidates as is the case with candidates of no legal study background.

Learning Support Framework

Academic Support	Law School Program offer tutoring seminars taught by young and mid-career lawyers, with the aim of providing detailed support to students as working person majoring in law, especially those without Legal Background, to overcome the academic constraints they face, and by providing students with more opportunities to come into close contact with legal practitioners, helping them to cultivate a sense of legal practice and to reaffirm and raise their awareness as those aspiring to become legal practitioners. In the tutoring seminars, explanations are given to help students understand the content of the law, such as how to read articles, and students' drafts are corrected to improve their writing skills. In addition, individual study consultations are held by tutors as needed, and advice is given on what students need to improve their grades and how to balance their studies with work.
Opportunities for Peer Interaction	To promote interaction among students, we hold lunch meetings and bar exam report sessions for each or all grade levels as appropriate. Through these opportunities, we support the formation of independent seminar groups.
Opportunities for Student–Faculty Interaction	Each student is assigned one faculty member who is available to provide academic advice and other support. Students can also ask faculty members questions during lunch meetings. Each faculty member has set office hours, but they are also available to answer questions and provide academic advice at any time outside of these hours. Office hours are made known to students through the Course Guide. Even in on-demand courses where opportunities to interact with faculty tend to be limited, students can still interact by holding optional Q&A sessions.

Approaches to Assuring and Enhancing Educational Quality

To improve the quality of education, faculty members observe each other's classes twice a year under the leadership of the FD Planning and Steering Committee, and these discussions are held at FD meetings attended by all full-time faculty members. The FD meetings also analyze the results of the common achievement assessment test for first-year students to verify the success of Constitutional Law, Civil Law, and Criminal Law courses. The appropriateness of these activities is verified through self-evaluations conducted by the Self-Evaluation Committee in accordance with the Agreement (Internal Rules) on Self-Evaluation for the Law Department, Faculty of Humanities and Social Sciences, Business Sciences.
In addition, joint FD meetings are held with Chiba University, Kanazawa University, and Kyushu University, and participating faculty share the results with all full-time faculty members to improve teaching methods.
The appropriateness of the above-mentioned educational quality assurance and improvement measures was confirmed in the accreditation evaluation conducted by the National Institution for Academic Degrees and Quality Enhancement of Higher Education (NIAD-QE) in 2024.

MBA Program in International Business

■ Master of International Business Administration

Program Educational Objectives

The MBA Program in International Business cultivates management professionals who, as “highly specialized professionals” , understand the international society and cultural diversity and possess the knowledge, skills and qualities that can direct them to appropriate actions conforming to changing business circumstances. The Program especially seeks to cultivate the following three types of global leaders: business managers who possess the core management competences, country managers who excel in international adaptability, and project managers who excel in applied information skills.

Graduate Profile	We seek working adult members of society who are culturally sensitive and so proficient in English as to make communication emerge in the Program's highly diverse learning environment, possess proactive problem awareness and a pattern of autonomy, and seek to have a career active as a human resource of central management at the international headquarters or local business site or in cross-regional projects in a for-profit or non-profit global organization in the future.

Diploma Policy

The degree of Master of International Business Administration is commenced to those who have fulfilled the requirements for the completion of the Professional degree programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Diversity acceptance ability: Ability to consider different perspectives, carefully listen to different opinions and thereby take various possibilities into account	①If one understands the thoughts or perspectives of those who belong to different realms such as different cultures, industries and job duties ②If the possibility of problem solving is extended with the acceptance of various different views
	2. Achieving ability: Ability to search for a means to achieve tasks in a situation where they are highly uncertain and difficult to solve	①If problems, even when they are of high uncertainty, are appropriately recognized and solutions are found ②If goals are achieved by taking the initiative to proactively make actions even under difficult situations
	3. Foreseeing ability: Ability to foresee present and future factors that have effects on the problems one should solve	①If various factors that may have effects on the future are appropriately grasped, understood and sorted ②If capable of forming new ideas for the creation of social value with a long-term view
	4. Information collection ability: Ability to efficiently collect high quality information necessary for decision making	①If information to be necessary for the correct decision making is identified ②If necessary information is collected effectively and efficiently using diverse means
	5. Creative ability: Ability to combine existing concepts or address problems based on new ideas	①If the importance of creating new knowledge and value and the methodology for it are understood ②If social contribution through new knowledge creation is expected
	6. Analytical thinking ability: Ability to carry out analysis with the selection of applicable information and techniques for solving challenges	①If logical thinking method is understood and used ②If capable of solving actual social problems by applying logical thinking ability
	7. Strategic planning ability: Ability to consider multiple evaluation scales and thereby create measures expected to highly pay off	①If problems faced by the society, companies, etc. are appropriately grasped from a multifunctional standpoint or viewpoint ②If the way the society, companies, etc. should be is set and the road map to it is provided

	Competences	Evaluation perspectives
Knowledge and Skills	8. Organizational management ability: Ability to achieve the goals of a managing department with consideration for the allocation of given management resources and the awareness of personnel members	①If capable of understanding various forms of organization existing in the society and their nature ②If capable of managing organizations appropriately with the comprehension of organizational behavior and management and leadership
	9. Communication ability: Ability to eliminate ambiguous conditions in communication and acquire support and understanding from relevant persons	①If appropriate communication necessary for making various business operations proceed smoothly is made ②If mutual understanding is promoted and the initiative is taken to proactively communicate oneself to achieve goals
	10. Risk management ability: Ability to objectively grasp the probabilities of risk occurrences and their effects and take appropriate actions when they occur	①If capable of grasping potential risk factors latent in the society, companies, etc. ②If, in time of crisis, situations are grasped, instructions are given and actions are taken appropriately
Guidelines for Assessing Learning Outcomes	All students submit a Final Report and give a Final Presentation. After a faculty Q&A session, their work is comprehensively evaluated at an evaluation meeting attended by all full-time faculty members in the department. In addition to the results of this final examination, a GPA of 3.0 or higher is required for completion. These factors allow for a comprehensive and objective assessment of students' achievement of learning outcomes based on the degree awarding policy.	

Curriculum Policy

To achieve the Program's education goals and provide an education program appropriate to an internationally competitive professional graduate school, the following three concrete education policies are set up.
The first education policy is to train students to have the skill to make quick and appropriate decisions in rapidly changing international management by way of interrelating and complementing the education among the five realms (“business strategic realm”, “organizational management realm”, “international action realm”, “applied information realm”, “common realm”) that the Program has established in association with new management circumstances.
The second education policy is to offer broad subject groups in the five education realms and thereby meet the need for a variety of career plans of the students who will complete the Program with the goal of becoming international management professionals, and this is how the Program helps students have the spirit of proactively planning a career and making moves to achieve it.
The third education policy is to cultivate the practical ability to carry out job duties as international management professionals through the hands-on subjects inside and outside Japan to help students possess the ability under international management circumstances and also exert the ability effectively at headquarters or overseas local subsidiaries.

Curriculum Design Framework	To provide education programs appropriate to an internationally competitive professional graduate school, the Program's curriculum is organized to feature four distinctive characteristics in language, lectures and hands-on training. – Required subjects, elective subjects, seminar subjects, and business projects are set up. With these, students acquire the ten competences shown in Diploma policy. – Lectures, which incorporate theory and practice, are taught by professional practitioners or specialized researchers who are active in international business realms. With these, students acquire diversity acceptance ability, foreseeing ability and communication ability. – In the final semester, students work on a business project, which integrates the knowledge and skills acquired in lecture subjects to reflect them in actual practice. From the following programs, students can select one that meets each personal need: ① In-company project, ② Internship in Japan, ③ Overseas internship, ④ Research report, ⑤ Business plan development. With this business project, students acquire the creative ability, strategic planning ability, achieving ability, information collection ability, analytical thinking ability, etc. – The Program is based on an education method which encourages students to make use of their learned knowledge (debates, group work, simulations) in the Program's highly diverse and international learning environment where about one fourth of the students come from overseas countries and also Japanese students who have a degree in overseas universities are intermingled. In addition, the Program also has short overseas training programs of a week or so to help working students participate with ease. With these educational trainings, students acquire the organizational management ability, communication ability, risk management ability, etc.

Teaching and Learning Methods	– Students take required subjects, elective subjects and seminar subjects under the advice of multiple supervisory faculty members. – To support students' systematic learning so that they can more practically apply the theory that they has learned in lectures and seminars and can develop it into knowledge and skills that can be applied at worksites, the Program sets up the “Preliminary Report/Presentation” and “Interim Report/Presentation” milestones starting from when students are in the seminar stage. In addition, students carry out a business project as hands-on training under the advice of multiple supervisory faculty members during the semester term to complete the Program.

Admission Policy

Desired Student Profile	We seek working adult members of society (or those who have working experience) who ① are culturally sensitive and so proficient in English as to make communication emerge in the Program's highly diverse learning environment, ② possess proactive problem awareness and a pattern of autonomy, and ③ seek to have a career active as a human resource of central management at the international headquarters or local business site or in cross-regional projects in a for-profit or non-profit global organization in the future.
Student Selection Process	Candidates are comprehensively evaluated based on the examination of submitted application documents, an examination of English proficiency and an oral exam. – First stage selection: The examination of submitted application documents and an examination of English proficiency require the submission of the application form in the specified format, an essay describing the plan for the business project training, etc., the official transcript and recommendation letter of the university from which the candidate graduated, etc. – Second stage selection: Oral exam (only successful candidates of the first stage selection). The oral exam evaluates the candidate's job experience, the motive for applying for the Program, the analytical and communication skills, future visions, etc.

Learning Support Framework

Academic Support	MBA-IB offer a variety of learning support including the following. 1-A system of Preliminary advisor for incoming students and Chief and Secondary advisors for the Business project. 2-Financial support for participation in academic conferences, study aboard, and English proofreading 3-During students' first semester, refresher courses in Basic Economics and Basic Mathematics are provided.
Opportunities for Peer Interaction	Most courses require group assignments and presentations throughout the semester, promoting collaborative learning among students. Furthermore, the five required seminar courses are primarily conducted in groups, promoting student interaction through discussion.

Opportunities for Student–Faculty Interaction	Each student is assigned a Chief Advisor and a Second Advisor, and small-group seminar activities ensure ongoing opportunities for faculty interaction, taking advantage of the low student-to-faculty ratio.

Approaches to Assuring and Enhancing Educational Quality

1. The MBA-IB program, as a professional school, receives periodic accreditation from ABEST 21. During each accreditation, MBA-IB receives feedback for measures to improve quality of the education it offers. The faculty, led of its Education committee, takes measure to implement the feedback received.
2. Each year the Education Committee reviews the results of the student surveys for each course, and develops measures for curriculum improvement. These measures are discussed at the monthly faculty meetings.
3. MBA-IB provides support for individual faculty development opportunities.

Graduate School of Science and Technology

Degree Programs in Pure and Applied Sciences

Master's Program in Mathematics	Doctoral Program in Mathematics
Master's Program in Physics	Doctoral Program in Physics
Master's Program in Chemistry	Doctoral Program in Chemistry
Master's Program in Engineering Sciences	Doctoral Program in Engineering Sciences
Subprogram in Applied Physics	Subprogram in Applied Physics
Subprogram in Materials Science	Subprogram in Materials Science
Master's Program in Materials Innovation	Subprogram in Materials Science and Engineering
	Doctoral Program in Materials Innovation

Degree Programs in Systems and Information Engineering

Master's Program in Policy and Planning Sciences	Doctoral Program in Policy and Planning Sciences
Master's Program in Service Engineering	Doctoral Program in Risk and Resilience Engineering
Master's Program in Risk and Resilience Engineering	Doctoral Program in Computer Science
Master's Program in Computer Science	Doctoral Program in Intelligent and Mechanical Interaction Systems
Master's Program in Intelligent and Mechanical Interaction Systems	Doctoral Program in Engineering Mechanics and Energy
Master's Program in Engineering Mechanics and Energy	Doctoral Program in Life Science Innovation (Bioinformatics)
Master's Program in Life Science Innovation (Bioinformatics)	Doctoral Program in Empowerment Informatics

Degree Programs in Life and Earth Sciences

- Master's Program in Biology
- Master's Program in Agro-Bioresources Science and Technology
- Master's Program in Geosciences
- Master's Program in Environmental Sciences
- Master's Program in Mountain Studies
- Master's Program in Life Science Innovation (Food Innovation)
- Master's Program in Life Science Innovation (Environmental Management)
- Master's Program in Life Science Innovation (Biomolecular Engineering)
- Doctoral Program in Biology
- Doctoral Program in Agricultural Sciences
  - Subprogram in Advanced Agricultural Technology and Science cooperated with NARO
- Doctoral Program in Life and Agricultural Sciences
- Doctoral Program in Bioindustrial Sciences
- Doctoral Program in Geosciences
- Doctoral Program in Environmental Studies
- Doctoral Program in Life Science Innovation (Food Innovation)
- Doctoral Program in Life Science Innovation (Environmental Management)
- Doctoral Program in Life Science Innovation (Biomolecular Engineering)

Joint Master's Degree Program in Sustainability and Environmental Sciences

Educational Objectives of Graduate School of Science and Technology

In the new interdisciplinary realms in which systems, information and society are merged and combined with the foundation and application of scientific, engineering and agricultural studies that support the overall sciences and technologies, the Graduate School of Science and Technology has been designed to cultivate researchers, university faculty members and highly specialized professionals of ingenuity and of action who can identify and solve our complex and difficult problems.

Competences specified by the Graduate School of Science and Technology

Master's Program	1. Research ability	Basic knowledge and ability to set research tasks and carry out a research plan in the areas of science and technology
	2. Specialized knowledge	Advanced specialized knowledge and command of the areas of science and technology
	3. Ethical view	Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of science and technology
Doctoral Program	1. Research ability	Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of science and technology
	2. Specialized knowledge	Leading-edge and advanced specialized knowledge and command of the areas of science and technology
	3. Ethical view	Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of science and technology and deep ethical knowledge about the specific area of expertise

Degree Programs in Pure and Applied Sciences

Educational Objectives

The Degree Programs in Pure and Applied Sciences offer advanced education and research supervision concerning the foundation of pure and applied sciences and its application to science and technology to cultivate researchers, university faculty members and highly specialized professionals who have a wide perspective covering from foundation to application and outstanding research ability that can appropriately deal with the rapid changes of the modern society.

	Competences specified by the Degree Programs	Evaluation perspectives
Master's Program	1. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of pure and applied sciences	① If significant research tasks and research goals in the area of expertise are set ② If a research plan for the realization of research goals and research tasks is designed ③ If information, technical and specialized knowledge necessary to carry out a research plan are obtained and these specialized knowledge are comprehensively used
	2. Specialized knowledge: Advanced specialized knowledge and command of the areas of pure and applied sciences	① If advanced specialized knowledge in the areas of pure and applied sciences is acquired ② If the ability to apply, put into practice, and use specialized knowledge in actual research is acquired
	3. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of pure and applied sciences is acquired	① If ethical view necessary to carry out research is adopted in addition to general ethical view ② If matters with potential to develop ethical problems are understood and knowledge to address these is acquired
Doctoral Program	1. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of pure and applied sciences	① If important and significant research tasks and research goals in the area of expertise are set ② If a research plan for the realization of research goals and research tasks is designed ③ If information, technical and specialized knowledge necessary to carry out a research plan are obtained and these advanced knowledge are comprehensively used
	2. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of pure and applied sciences	① If advanced and leading-edge specialized knowledge in the areas of pure and applied sciences is acquired ② If high ability to apply, put into practice, and use specialized knowledge in actual research is acquired

Doctoral Program	3. Ethical view: Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of pure and applied sciences and deep ethical knowledge about the specific area of expertise	① If high ethical view necessary to carry out research is adopted in addition to general ethical view ② If matters with potential to develop ethical problems are understood and advanced knowledge to address these is acquired

Degree Programs in Systems and Information Engineering

Educational Objectives

The Degree Programs in Systems and Information Engineering cultivate researchers, university faculty members and highly specialized professionals who possess the ability to see from a higher global perspective and the diverse and flexible thinking ability in the interdisciplinary realms in which systems, information and society are merged and combined, as well as the ingenuity and inspiration to solve the complex and difficult problems in the real world under their leadership.

	Competences specified by the Degree Programs	Evaluation perspectives
Master's Program	1. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of systems and information engineering	① If research tasks in the areas of systems and information engineering were appropriately set ② If there are basic skills to conduct research in the areas of systems and information engineering ③ If substantial findings were achieved by carrying out research in the areas of systems and information engineering
	2. Specialized knowledge: Advanced specialized knowledge and command of the areas of systems and information engineering	① If basic specialized knowledge in the areas of systems and information engineering is retained ② If advanced specialized knowledge in specific areas of systems and information engineering is gained and command is possessed
	3. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the area of engineering	① If researcher ethics and technician ethics were understood and observed
Doctoral Program	1. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of systems and information engineering	① If leading-edge research tasks in the areas of systems and information engineering were appropriately set and there are advanced skills to conduct the research ② If original findings were achieved by carrying out leading-edge research in the areas of systems and information engineering
	2. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of systems and information engineering	① If specialized knowledge in the areas of systems and information engineering is extensively retained ② If leading-edge and advanced specialized knowledge in specific areas of systems and information engineering is gained and put into practice for research and problem solution

Doctoral Program	3. Ethical view: Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the area of engineering and deep ethical knowledge about the specific area of expertise	① If researcher ethics and technician ethics were understood and observed ② If procedures about researcher ethics and technician ethics necessary at the time of research were fully understood

Degree Programs in Life and Earth Sciences

Educational Objectives

The Degree Programs in Life and Earth Sciences cultivate researchers, university faculty members and highly specialized professionals who possess deep knowledge, research ability and research skill in the field of specialization in life science, geoscience or agricultural or environmental science, and on the other side, can see the life and human, and their foundations which are the earth, nature and society that surround them from a broad point of view, and also have the ingenious inspiration to find research tasks and the ability to solve them.

	Competences specified by the Degree Programs	Evaluation perspectives
Master's Program	1. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of life and earth sciences	If new research tasks using specialized knowledge gained in the areas of life and earth sciences are set If basic knowledge to carry out the research plan was acquired
	2. Specialized knowledge: Advanced specialized knowledge and command of the areas of life and earth sciences	If advanced specialized knowledge in the areas of life and earth sciences was gained If capable of putting the specialized knowledge into practice
	3. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of life and earth sciences	Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of life and earth sciences were gained
Doctoral Program	1. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of life and earth sciences	If leading-edge research tasks using up-to-date specialized knowledge gained in the areas of life and earth sciences are set If basic knowledge to carry out the research plan independently was acquired
	2. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of life and earth sciences	If leading-edge and advanced specialized knowledge in the areas of life and earth sciences was gained If capable of putting the specialized knowledge into practice
	3. Ethical view: Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of life and earth sciences and deep ethical knowledge about the specific area of expertise	Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of life and earth sciences were gained

Master's Program in Mathematics

Master of Science

Program Educational Objectives

The Master's Program in Mathematics cultivates researchers who have a wide perspective covering from pure to applied mathematics, educators or instructors who are sufficiently skilled in mathematics to play a role in the education industry, and highly specialized professionals, etc. who can use their mathematical science abilities to the full on the social front.

Graduate Profile	He or she should have a wide perspective necessary for being a researcher and be sufficiently skilled in mathematics to play a role in the education industry, and possess mathematical science abilities sufficient to be active on the social front as a highly specialized professional.

Diploma Policy

The degree of Master of Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Mathematical analysis ability: Ability to see the nature of issues from a wide mathematical perspective and analyze them mathematically	①If the basic understanding of problems in various research realms was gained ②If a good command of basic mathematical knowledge was gained
	7. Ability to carry out mathematical research: Ability to carry out research while setting up research tasks based on advanced knowledge	①If problems are identified based on the advanced knowledge in one's own area of expertise ②If research is carried out while its tasks are worked on in a systematic manner

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability to solve mathematical tasks: Ability to work on tasks from a wide perspective and by using advanced mathematical knowledge	①If the use of advanced mathematical knowledge is actively tried ②If capable of seeing problems from multiple perspectives and solving them
	9. Mathematical pursuit ability: Ability to work on issues from a mathematical viewpoint and pursue mathematical principles behind those issues	①If the pursuit of mathematical principles as the nature of issues is actively tried to gain new findings ②If aware of social contribution activities through mathematics
	10. Mathematical expressiveness: Communication ability to debate with those from different areas and not just one's own area	①If linguistic skill necessary for smooth communication was gained ②If the ability to explain and understand was gained to debate with those from different areas and not just one's own area
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement assessments based on the “Achievement Assessment Form”. This process objectively verifies and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. The stages and methods of achievement assessment are outlined below. – The master's thesis presentation at the time of graduation, combined with field-specific interim presentations held around the end of the spring semester of the second year, assesses whether the candidate possesses the abilities appropriate for a Master of Science degree. – The thesis examination assesses whether the candidate has produced academic research outcomes appropriate for a Master of Science degree. The thesis defense and final examination serve as the final assessment of achievement in these areas.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and two or more sub-reviewers. 【Review method】 The thesis review board administers thesis review and final exam. 【Review items】 1. The research theme must be clearly indicated with the presence of academic significance. 2. The preceding researches associated with the research theme must be appropriately presented. 3. The line of reasoning to reach the conclusion must be provided logically and clearly. 4. The line of reasoning and conclusion of the degree thesis must have novelty or ingenuity and be an academic contribution with contents that open up new findings in the area or a review article containing the student's view. 5. The thesis must have appropriate sentence expressions and thesis construction as a degree thesis. 【Level standards required for the degree thesis】 A thesis for degree grant meeting all of the above evaluation items passes as a master's thesis after the final exam is included in the judgment.

Curriculum Policy

To develop diverse human resources, the Program adopts the system of education and research supervision formed by the four areas of algebra, geometry, analysis and mathematics of information. The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in pure and applied sciences and to have the big picture in mind in natural science extending to science and technology and to engineering as well as the generic knowledge and ability that support students to be active in diverse social scenes, along with the research ability, specialized knowledge and ethical view in each area.

Curriculum Design Framework	The Program offers plenty of General Foundation Subjects, careful Major Subjects, and seminars according to each student's ability in their own area of expertise, so that they can develop a broad perspective ranging from the foundation of modern mathematics to its application to each area of the sciences and up to the leading-edge areas of modern mathematics. The research carried out under the advice of faculty members helps students develop the fundamental and applied abilities appropriate to a master's degree in science to grow to be a human resource active in the society though science. In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, Colloquium on Pure and Applied Sciences (1 credit) must be taken as a required subject from Degree Programs' Common Courses, and students are encouraged to take other Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses. The research supervision takes a multiple-instruction scheme to develop a research ability that exerts multifaceted perspectives. – With Introduction to Algebra I, Introduction to Algebra II, Special Lecture on Algebra I, Algebra I and Algebra II, students gain the ability to extract algebraic structures in mathematical problems. – With Introduction to Geometry I, Introduction to Geometry II, Special Lecture on Geometry I, Geometry I and Geometry II, students gain the ability to geometrically grasp mathematical problems. – With Introduction to Analysis I, Introduction to Analysis II, Special Lecture on Analysis I, Analysis I, Analysis II and Stochastic Analysis, students gain the ability to analyze mathematical problems in the discipline of analysis. – With Introduction to Mathematics of Information I, Introduction to Mathematics of Information II, Special Lecture on Mathematics of Information I, Mathematical Logic, Mathematical Statistics and Computer Mathematics, students gain the ability to view mathematical problems from the aspect of mathematics of information. – With Internship in Mathematics I, Internship in Mathematics II and Frontiers of Mathematics, students gain the fundamental abilities for forming their future career paths. – With the Research IA, Research IB, Research IIA and Research IIB in the area, students develop the fundamental and applied abilities appropriate to a master's degree in science to gain presentation and communication abilities.

Teaching and Learning Methods	– The presentations of research plan and research outcomes are opened when each academic year finishes, and thereby quality supervision is provided to enrich education and further promote research.

Admission Policy

Desired Student Profile	We seek candidates those who possess mathematical knowledge as equivalent to a university graduate, have the great interest and motivation to learn further advanced mathematics and the motivation to conduct research on modern mathematics and pursue to draw on their mathematical research experiences and abilities in the future to become a “researcher”, “educator” or “highly specialized professional”.
Student Selection Process	Candidates must have mathematical comprehension as equivalent to a university graduate and English proficiency necessary for carrying out mathematical research. The recommendation entrance exam places emphasis on the activities that the candidate has been engaged so far in the areas of mathematics and also the aspiration and research plan that the candidate wishes to achieve after admitted.

Learning Support Framework

Academic Support	– The graduate course “Special Research”, which provides research guidance for master's theses, is conducted with students giving presentations in the laboratory nearly every week. Within this framework, in addition to providing presentation guidance, close supervision is also provided regarding research progress and time management. – Around the end of the spring semester of the second year, students hold an interim presentation on their research for their master's thesis, providing an opportunity to receive guidance on presentation skills from faculty members other than their advisor. – Prior to the master's thesis presentation, we hold a a research symposium-style presentation entitled “Tsukuba young researchers workshop”, inviting young researchers from overseas to participate. This provides an opportunity to deliver presentations in English. – By appointing an assistant advisor, we have established a system where students can consult with someone other than their primary advisor regarding various academic matters.

Opportunities for Peer Interaction	– Around the end of the spring semester of the second year, an interim presentation session is held for research related to the master's thesis, providing an opportunity for students to understand each other's research and interact. – Part of the seminar series held by the Mathematics Department is designated as the graduate course “Frontiers in Mathematics” . Many students participate in the seminars, and the tea time held before the start provides an opportunity for students to interact with each other. – Events similar to discussion meetings, such as “Mathematical Intersections” and “RCMS Salon”, are also held to provide opportunities for student interaction. – By assigning graduate students as tutors to the “Mathematics Tutoring Program” —a learning support session for undergraduate students—we are creating opportunities for interaction between undergraduates and graduate students, as well as among graduate students themselves.
Opportunities for Student–Faculty Interaction	– Part of the seminar series held by the Mathematics Division is designated as the graduate course “Frontiers in Mathematics”. Many faculty members participate in the seminar, and a tea break before the session provides an opportunity for interaction between students and faculty. – Events such as “Mathematical Intersections” and “RCMS Salon”, similar to discussion meetings, are also held to provide opportunities for interaction between students and faculty.

Approaches to Assuring and Enhancing Educational Quality

- For research toward the Master of Science thesis, in addition to the thesis presentation at the time of graduation, an interim presentation by field is held around the end of the spring semester of the second year.
- Course evaluation questionnaires and graduation questionnaires are conducted, and feedback from students is utilized to improve lectures.
- At both the interim and final stages, an assessment of competence achievement is conducted where students perform a self-assessment, which is then verified by their academic advisor.
- At the Degree Evaluation Committee, the committee assesses students' learning outcomes and verifies the validity of the curriculum and the appropriateness of instruction.

Master's Program in Physics

Master of Science

Program Educational Objectives

The Master's Program in Physics cultivates human resources who have the specialized knowledge and a wide perspective in physics, which is the foundation of natural science, as well as the fundamental abilities to perform research in areas associated with physics and also possess the flexible ability to apply their expertise to assume a role in highly specialized professions.

Graduate Profile	He or she should possess not only the qualities in physics but also the knowledge about the areas of associated disciplines and also the ability to scientifically challenge and break through problems that should be elucidated and solved and thereby can independently drive forward research in the Doctoral Program. In the course of the history of the universe, the Program adopts a system of education that crosses over international research bases based on the viewpoint of seeing the disciplinary areas of particle physics, nuclear physics and physical cosmology as the evolution processes of the universe. We thereby seek human resources who possess the interdisciplinary ability to involve all these areas along with a high level of expertise and are capable of being internationally active concerning the history of the universe. In the course of accelerator science, he or she should be capable of being active in this field in the future, through the research and next-generation accelerator development using the B-factory, J-PARC and accelerator-based synchrotron radiation science research facility of High Energy Accelerator Research Organization, etc. In the course of synchrotron radiation materials science, he or she should gain knowledge and skill in both areas of synchrotron radiation, etc. in addition to materials science through the research utilizing synchrotron radiation facilities (for example, PF, J-PARC, SPring-8 and overseas facilities), etc. and be capable of promoting materials development at synchrotron radiation facilities or private sector companies.

Diploma Policy

The degree of Master of Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Application ability: Fundamental abilities to put physical knowledge into use for human society development by identifying a universal structure in the natural setting	①If the relationship between physics and society is considered on the basis of wide knowledge in the areas of physics ②If one can imagine an example of using the knowledge in their own area of expertise to contribute to the society
	7. Physical ability: Leading-edge scholarly knowledge and the ability to debate and conduct joint research with researchers inside and outside Japan	①If the basic specialized knowledge in the areas of physics was gained and physical phenomena are addressed with logical thinking ②If the specialized knowledge in one's own area of research was gained and research is thereby driven forward

	Competences	Evaluation perspectives
Knowledge and Skills	8. Information provision ability: Ability to provide a clear description of one's research to those from different areas and not just one's own area	①If the academic importance of one's own research is explained ②If a description of concepts peculiar to physics is made clear to those from different areas and not just one's own area
	9. Logical ability: Dedication to duty and logicality as a scientist	①If one is enthusiastic about searching for natural truth ②If one's commitment to research is scientific and sincere
Guidelines for Assessing Learning Outcomes	Learning outcomes are assessed by objectively confirming and evaluating the degree of competences acquired at each stage based on the degree awarding policy through achievement assessment based on an "Achievement Assessment Table". The stages and methods of achievement assessment are shown below. Achievement assessment is conducted at the end of the first year (mid-term examination) and at the end of the second year, and the results are confirmed by the supervising professor, etc. Knowledge and ability are assessed through the submission of a master's thesis and an oral presentation at the master's thesis presentation.	
Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and two or more sub-reviewers. 【Review method】 The thesis review board administers thesis review and final exam. The final exam includes the evaluation of the ability for presenting one's research content to those from different areas and not just one's own area. 【Review items】 1. Grasping and understanding of preceding researches associated with one's research content, and the appropriate appraisal and citation of their literature and materials 2. Clear presentation of the backgrounds, purposes and methods of the research 3. Reproducibility of obtained results, or verifiability by third parties 4. Unequivocal thesis construction, and appropriate development of line of reasoning before reaching the conclusion 【Level standards required for the degree thesis】 With the adherence to research ethics, all of the above evaluation items must be met. The thesis passes as a master's thesis with the above requirements and the final exam included in the judgment.	

Curriculum Policy

The Program consists of a total of ten areas of expertise, which are theoretical particle physics, experimental particle physics, cosmology, observational cosmology, theoretical nuclear physics, experimental nuclear physics, theoretical condensed matter physics, experimental condensed matter physics, biophysics, and plasma physics, and a total of three realms, which are the history of the universe, accelerator science, and synchrotron radiation materials science.

The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in pure and applied sciences and to have the big picture in mind in science and technology, which extends over natural science and engineering, as well as the generic knowledge and ability that support students to be active in diverse social scenes, along with the research ability, specialized knowledge and ethics in each area of expertise.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, Colloquium on Pure and Applied Sciences (1 credit) must be taken as a required subject from Degree Programs' Common Courses, and students are encouraged to take other Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses. The research supervision takes a multiple-instruction scheme to develop a research ability that exerts multifaceted perspectives. – Students belong to their respective area of specialty and thereby gain a high level of expertise. – In the areas of particle physics, nuclear physics and astrophysics, the course of the history of the universe is organized for a system of education crossing over international research bases. In the areas of condensed matter physics, the Program organizes the course of synchrotron radiation materials science, where students can acquire the knowledge and skill in synchrotron radiation application which serves as a powerful technique for the search in materials science, through the cooperation of Japan Synchrotron Radiation Research Institute and Photon Factory. In addition, the course of accelerator science is organized through the education and research tie-up with High Energy Accelerator Research Organization. – Since physics is the foundation of natural science, the Program in Physics is deeply interrelated in research and education with other Programs of Graduate School, and research centers (Center for Computational Science, Tomonaga Center for the History of the Universe, Tsukuba Research Center for Energy Materials Science, Plasma Research Center, etc.) as well as major research institutes inside and outside Japan. Taking advantage of this characteristic, the Program provides various education programs, including the Cooperative Graduate School System (National Institutes for Quantum and Radiological Science and Technology, National Institute of Advanced Industrial Science and Technology, National Institute for Materials Science, RIKEN, NTT, NEC, etc.) and Tsukuba Resonance Education Program.

Curriculum Design Framework	– By taking special research subjects of each area, students acquire a wide perspective, and through the deepening of each one's original research theme, develop fundamental and applied abilities and fortitude as a researcher. – Students acquire practical abilities with information provision/communication ability development subjects in Graduate General Education Courses.
Teaching and Learning Methods	– Students widely learn the foundation of physics with Foundation Subjects for Major and gain advanced specialized knowledge in each area with Major Subjects. – “Physics Seminar” , in which students learn the latest topics of particularly extensive modern physics, is placed as a required subject. – Taking seminar and special research subjects of each area, students learn in the leading-edge research setting of their respective area of specialty under the close supervision of faculty members to deepen the scholarly knowledge of the area and carry out their research for a degree thesis. – In addition to the subjects of specialty, students take Graduate General Education Courses and Degree Programs' Common Courses to acquire communication ability, etc.

Admission Policy

Desired Student Profile	We seek candidates who have bachelor's degree level skills in physics and its associated scientific areas and English proficiency, have the great interest and motivation to conduct leading-edge research in the areas of physics and pursue to be a researcher in academia and industry.
Student Selection Process	– Candidates are selected through written and oral exams. – In the general entrance exam, candidates must have physical comprehension and basic mathematical comprehension as equivalent to a university graduate and English proficiency necessary for carrying out physical research. – The recommendation entrance exam places emphasis on the activities that the candidate has been engaged so far in the areas of physics and also the aspiration and research plan that the candidate wishes to achieve after admitted.

Learning Support Framework

Academic Support	We have implemented a secondary supervisor system. Secondary supervisors meet with students on a regular basis and provide effective learning guidance from a different perspective than the supervisor.
Opportunities for Peer Interaction	In order to promote interaction between graduate students across laboratories, we hold a social gathering for graduate students once a year.
Opportunities for Student–Faculty Interaction	In order to promote interaction between graduate students and faculty, especially faculty other than their supervisor, we hold an exchange meeting between graduate students and faculty once a year.

Approaches to Assuring and Enhancing Educational Quality

A Curriculum Committee has been established and meets monthly. An Educational Conference, attended by all faculty members, is also held monthly. The Curriculum Committee and Educational Conference evaluate students' learning outcomes and continually inspect and improve all educational activities, ensuring the quality of education and strengthening the system for achieving the goals of the degree programs.

Master's Program in Chemistry

Master of Science

Program Educational Objectives

Chemistry is a discipline that elucidates the structure and reaction of materials at the electron and molecular level to deepen the understanding of natural phenomena and that researches the fabrication of new materials and the expression of their new functionalities. The Master's Program in Chemistry is designed to cultivate human resources who can make the most of their ingenuity from a global view in this area. Particularly, the Master's Program cultivates those who will be a pillar of research in various areas associated with chemistry as highly specialized professionals.

Graduate Profile	He or she should have the clear intention and sincere attitude to contribute to the world through chemistry, and the ability to seek to solve problems by research that is contributory to social development, as well as communication ability and linguistic skill capable of negotiating in the international society.

Diploma Policy

The degree of Master of Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Specialized chemical knowledge: Theoretical and practical knowledge about physical chemistry, organic chemistry and inorganic/analytical chemistry, and the ability to put it into use in actual research scenes	If theoretical and practical knowledge about physical chemistry, organic chemistry and inorganic/analytical chemistry, and the ability to put it into use in actual research scenes were gained
	7. Logical thinking and problem-solving ability: Ability to analyze and solve problems by logical thinking	If the ability to analyze and solve problems by logical thinking was gained

	Competences	Evaluation perspectives
Knowledge and Skills	8. English proficiency specialized in chemistry: Ability to use English in carrying out a presentation and question-and-answer session and writing a paper as to chemical research	If the ability to use English in carrying out a presentation and question-and-answer session and writing a paper as to chemical research was gained
	9. Ability to drive research forward: Ability to set up research tasks and draw up long-term and short-term research plan	If the ability to set up research tasks and draw up long-term and short-term research plan was gained
	10. Research ethical view of good quality: Ability to appropriately handle and store research data and to appropriately cite other researchers' findings	If research data are appropriately handled and stored and if other researchers' findings are appropriately cited
Guidelines for Assessing Learning Outcomes	At the time of submitting the master's thesis, all academic supervisors will verify and evaluate the student's attainment of competences stipulated in the diploma policy, based on the “Achievement Evaluation Sheet”. For the oral presentation at the master's thesis defense in the final year, all academic supervisors will assess the student's acquisition of competences specified in the diploma policy, using a rubric. One year after admission, an achievement evaluation is conducted. Following confirmation and guidance from individual supervisors, all research supervisors verify and evaluate the results.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 A thesis review board, which is set up with a chief reviewer (supervisory faculty member) and two sub-reviewers, is launched. The chief and sub-reviewers must be doctor's degree holders. In addition, the chief reviewer must belong to Tsukuba (including the Cooperative Graduate School System), and the sub-reviewers, to Tsukuba (including the Cooperative Graduate School System) or a research institution approved by the professor meeting in the chemical field. 【Review method】 The chief and sub-reviewers review the submitted master's thesis. A master's thesis review board opens and arranges the oral presentation and oral exam of the master's degree candidate to evaluate the comprehension of research content and the achievement of the research. After the board finishes evaluation, the thesis reviewers have an evaluation meeting and decides on the final acceptance. 【Review items】 1. The submitted master's thesis must have a high level of completeness including the description, logical development and graphics. 2. The master's thesis content must have a sufficient high level as research in the areas of chemistry. 3. The master's thesis must have references cited appropriately. 4. The master's thesis must show the sufficient contribution of the master's degree applicant. 5. Preceding researches must be deeply understood and the disciplinary position of the research theme must be clear. 6. The master's thesis content must be deeply understood and the question-and-answer session in the presentation must be carried out appropriately. 【Level standards required for the degree thesis】 The thesis passes if approved to be on a master's thesis level in all criteria 1 to 5 and if approved to have an appropriate level of master's degree diploma with criterion 6 met in the presentation and oral exam in the master' thesis review board.

Curriculum Policy

The curriculum places four large frameworks which include the boundary areas with life sciences and engineering, etc. in addition to inorganic/analytical chemistry, physical chemistry and organic chemistry, which form the foundation of chemistry.
This system allows a research theme to involve a wide range of chemical areas. The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in pure and applied sciences and to have the big picture in mind in natural science extending to science and technology and to engineering as well as the generic knowledge and ability that support students to be active in diverse social scenes, along with the research ability, specialized knowledge and ethical view in each area.
Through this specialized research, students conduct leading-edge research to experimentally and theoretically seek to elucidate the structures and properties of various chemical substances as well as chemical reaction mechanisms, etc. at the electron and molecular level. With this, students can learn the chemical concepts covering from the foundation to application of chemical substances and also the techniques of experiment and research highly versatile in the areas in chemistry.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, Colloquium on Pure and Applied Sciences (1 credit) must be taken as a required subject from Degree Programs' Common Courses, and students are encouraged to take other Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses. The research supervision takes a multiple-instruction scheme to develop a research ability that exerts multifaceted perspectives. – The curriculum has a lineup of finely organized courses. Foundation Subjects for Major and Major Subjects help students widely learn the basic and specialized contents of chemistry to cultivate the ability to seek to solve problems. Students also take Graduate General Education Courses and Degree Programs' Common Courses to acquire communication ability and linguistic skill. – As for the research area of each student, students learn advanced contents under the personal attention of supervisory faculty members in charge.
Teaching and Learning Methods	– The curriculum places four large frameworks which include the combined areas with life sciences and engineering, etc. in addition to physical chemistry, inorganic/analytical chemistry and organic chemistry, which form the foundation of chemistry. – Through the specialized research in each area, students can learn the chemical concepts covering from the foundation to application of chemical substances and also the techniques of experiment and research highly versatile in the areas in chemistry. – Students widely learn the basic and specialized contents of chemistry to develop problem-solving ability and also gain communication ability and linguistic skill.

Admission Policy

Desired Student Profile	The Program seeks those who possess the scientific skills, logical and rational thinking abilities and linguistic skill cultivated in a bachelor's program and can challenge problems persistently toward solutions. The Program, which seeks to cultivate highly specialized professionals possessing the practical ability to contribute to the society in actual research scenes on the cutting edge, welcomes those who can be actively committed to academic disciplines and research with a strong desire to learn to attain what the Program seeks.
Student Selection Process	– In light of Desired Students, diverse candidates who possess the qualities and abilities appropriate as potential researchers or highly specialized professionals are selected. – Candidates are evaluated from multifunctional and comprehensive points of view with consideration for fairness and diversity.

Learning Support Framework

Academic Support	Through a support system consisting of co-supervisor and specialised fields (inorganic/analytical chemistry, physical chemistry, and organic chemistry), objectivity in research guidance and responsiveness to a variety of consultations are ensured. By providing opportunities to participate in lectures and seminars outside of the student's own specialised research field, as well as research presentation meetings and study groups, support is given for deepening research, along with guidance in presentation skills and writing support.
Opportunities for Peer Interaction	By providing opportunities to participate in events such as research presentation meetings and career path lectures, where students from different academic years gather, a system is established to promote interaction among students across years and groups through QandA sessions and open discussions. Through the *Semikai* (a degree-program-wide seminar), opportunities are provided for interaction among students across research fields and academic years.
Opportunities for Student–Faculty Interaction	Through the *Semikai* (a degree-program-wide seminar), opportunities are provided for interaction with faculty members other than the supervisor and co-supervisors. Meetings between graduate students and the faculty council are held to provide opportunities for interaction with faculty members other than the supervisor and co-supervisors.

Approaches to Assuring and Enhancing Educational Quality

Through ongoing reviews and improvements of overall educational activities—conducted in settings such as meetings between graduate students and faculty—we will ensure the quality of education and strengthen the framework for achieving the goals of the degree program

Master's Program in Engineering Sciences

Master of Engineering

Program Educational Objectives

In the diverse areas of engineering which range from substances, materials, devices to measurement technologies, the Master's Program in Engineering Sciences is designed to cultivate highly specialized professionals who base themselves on their sufficient fundamental abilities in science and have the applied engineering ability and the ability to make use of it to address diverse problems in reality using supple flexibility, create original technologies and cultivate potential younger talents.

Graduate Profile	In the diverse areas of engineering which range from substances, materials, devices to measurement technologies, the Program helps students develop sufficient fundamental abilities in science and cultivates highly specialized professionals who possess the high research and development ability to contribute to the society through the Program's education and research activities by way of a system of multiple supervisory faculty members with a wide variety of values. <Subprogram in Applied Physics> Highly specialized professionals with advanced specialized knowledge and abilities who lead research, technological development and engineering practice at the world's level in the areas of applied instrumentation, nanotechnology and electronic devices founded on the natural science around physics <Subprogram in Materials Science> Highly specialized professionals who possess the deep knowledge in the areas of expertise in materials engineering such as quantum physics of solid state, theoretical quantum physics, materials physics, and materials chemistry and biomaterials engineering and can contribute to the society through advanced research ability

Diploma Policy

The degree of Master of Engineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Fundamental engineering ability: Basic knowledge and academic abilities appropriate to highly specialized professionals in the areas of engineering	If one has interests in global trends in the areas of engineering and if knowledge was gained
	7. Basic academic abilities indispensable for the comprehension in the areas of engineering	If mathematical knowledge and abilities widely used in engineering were gained
	8. Specialized knowledge: Basic knowledge required for the comprehension in the areas in engineering	If one has interests in research trends in the areas of engineering and if specialized knowledge was widely gained

<table>
<tr><td rowspan="3">Knowledge and Skills</td><td>Competences</td><td>Evaluation perspectives</td></tr>
<tr><td>9. Ethical view: Ethical view required of highly specialized professionals in the areas of engineering</td><td>If researcher ethics, engineer ethics, and human research ethics as well as formalities and/or procedures necessary for research were sufficiently understood</td></tr>
<tr><td>10. Insight and problem-solving ability required to solve problems in practice in the areas of engineering</td><td>If papers or other materials in English in the areas of engineering are understood and research is carried out with the accomplishment of significant results</td></tr>
<tr><td>Guidelines for Assessing Learning Outcomes</td><td colspan="2"><Subprogram in Applied Physics>
Learning outcomes are evaluated by objectively confirming and evaluating them using the "Achievement Evaluation Table (Rubric)". After the Master's Thesis Review, the final examination will be conducted via oral questioning as outlined below.
– During the final examination, oral questioning will be conducted regarding the purpose, methodology, and progress of the research in the Master's Thesis (Research in Applied Physics). This will confirm whether the candidate possesses knowledge application skills, management skills, communication skills, and teamwork skills.
– The final examination includes an oral examination in a foreign language to confirm the candidate's ability to provide appropriate responses.
– The final examination includes oral examinations on fundamental engineering skills, basic academic skills, and specialized knowledge to evaluate the candidate's ability to provide appropriate responses.
– The final examination includes an examination on research ethics to confirm the candidate's thorough understanding.
– During the final examination, oral questioning on engineering field problems will be conducted to confirm the candidate's ability to provide appropriate responses.

<Subprogram in Materials Science>
The evaluation of learning outcomes is conducted using an Achievement Evaluation Sheet, which serves as a rubric to systematically assess the level of competence acquisition in accordance with the diploma policy at each stage of the program.
During the first and second years, presentations given in the Master's Seminar are evaluated by the primary advisor and several faculty members to assess the extent to which students have acquired the required competences. At the end of the first year's fall semester, students present an interim report on their thesis research, which is followed by self-assessment, formal review, and guidance provided by the faculty. Finally, at the end of the second year, a public presentation of the completed master's thesis is held, and a Thesis Examination Committee, consisting of the primary advisor and at least two sub-examiners, conducts a comprehensive review of the thesis research. This process also includes a final achievement assessment, which serves as the final examination for completion of the program.</td></tr>
</table>

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Set up with one chief reviewer and two or more sub-reviewers. 【Review method】 Thesis review and the final exam are administered in accordance with the method defined by each Subprogram. 1) Subprogram in Applied Physics The thesis review board administers thesis review and final exam. 2) Subprogram in Materials Science The thesis review board administers thesis review and final exam to evaluate if the student possesses the academic abilities and knowledge that become the foundations of all areas of materials engineering and the specialized knowledge of any of the areas of materials engineering and has successfully carried out research with a required level of results along with a specific theme in any of the areas of materials engineering. 【Review items】 1. The setup of research tasks and the selection of research methods must be appropriate. 2. The interpretation of results and the development of line of reasoning before reaching the conclusion must be appropriate and unequivocal. 3. The preceding researches related to research tasks must be grasped and understood with appropriate appraisal and citation. 4. With adherence to research ethics, the obtained results and conclusions must be verifiable by third parties. 5. Academic significance must be identifiable in the outcomes of research tasks. 【Level standards required for the degree thesis】 All of the above evaluation items and the criteria defined by each Subprogram must be met. 1) Subprogram in Applied Physics The thesis passes as a master's thesis with the final exam included in the judgment. 2) Subprogram in Materials Science The curriculum objectives defined in article 2, clause 3 of the school rules of Graduate Education at University of Tsukuba must be fulfilled. With this fulfillment, the thesis passes as a master's thesis with the final exam included in the judgment.

Curriculum Policy

The curriculum is organized with Foundation Subjects for Major, Major Subjects, laboratory seminars, etc., graduate school seminars, and research activities for the areas founded on the natural science around physics, which are the areas of applied instrumentation, nanotechnology and electronic devices, and the areas of expertise in materials engineering such as quantum physics of solid state, theoretical quantum physics, materials physics, and materials chemistry and biomaterials engineering.
The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in pure and applied sciences and to have the big picture in mind in science and technology, which extends over natural science and engineering, as well as the generic knowledge and ability that support students to be active in diverse social scenes, along with the research ability, specialized knowledge and ethics in each area of expertise.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, Colloquium on Pure and Applied Sciences (1 credit) must be taken as a required subject from Degree Programs' Common Courses, and students are encouraged to take other Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses. The research supervision takes a multiple-instruction scheme to develop a research ability that exerts multifaceted perspectives. – Foundation Subjects for Major are organized with Common Foundation Subjects on a Subprogram basis so that the base subjects, which serve as the foundation of the areas of technology now and in the future, are expanded from the College level. – With Major Subjects, students gain deep specialized knowledge in specific areas in Subprograms. <Subprogram in Applied Physics> – Students take Major Subjects for the specialized disciplines commonly required in each area of specialty. In the seminar of each laboratory, which permits the participation of other laboratories' students, more specialized contents are learned. – In graduate school seminars, students make presentations about the outcomes of daily routine research activities. In this setting, students cultivate their logic forming skill, communication skill and communication ability. <Subprogram in Materials Science> – The Subprogram is composed of the four areas of “quantum physics of solid state”, “theoretical quantum physics”, “materials physics” and “materials chemistry and biomaterials”. Each area's “Research IA, IB, IIA, IIB” (a total of 12 credits) are required subjects. In these subjects, in addition to the research activities according to each student's theme for master's thesis creation, students are required to make a research presentation once a year in “Master's Program Seminar”, in which the students and faculty members in the major participate. – By this, students understand the significance, outcomes and position of the research theme that each one has respectively worked on and gain the presentation and communication abilities of explaining using their own words.

Curriculum Design Framework	– Basic academic abilities and the deep specialized knowledge in specific areas are gained with Foundation Subjects for Major and Major Subjects. – A wide perspective is acquired with specialized subjects of other Programs or other Courses, and Graduate General Education Courses.
Teaching and Learning Methods	– In the Subprogram in Applied Physics, students take Biological and Medical Engineering and Material and Device Physics for Nanoscience in addition to Quantum Mechanics, Statistical Mechanics, Electromagnetism and Solid State Physics, which are common Foundation Subjects for Major, so that the base subjects, which serve as the foundations of these areas now and in the future, can be expanded from the College level. In the Subprogram in Materials Science, students take “Materials Chemistry” and “Chemical Biology” so that the base subjects serving as the foundations of the four areas of “quantum physics of solid state”, “theoretical quantum physics” , “materials physics” and “materials chemistry and biomaterials” can be expanded from the College level. – For the details on Major Subjects, see below. <Subprogram in Applied Physics> – With Major Subjects (Introductory Sciences in Advanced Surface Measurements, Charged Particle and Plasma Engineering Science, Advanced Instrumentation I, Device Engineering, etc.), students learn for the specialized disciplines commonly required in each area of specialty. – Through the research activities and seminar presentations in Research IA, etc. in the area, students gain the fundamental abilities indispensable for the understanding and expansion of the advanced areas of specialty, as well as the highly specialized fundamental abilities required of the area's researchers or highly specialized professionals, practical insight and ability to act, wide perspective, problem-solving ability, and the presentation and communication abilities to debate with experts in the world. <Subprogram in Materials Science> – With Major Subjects (Introduction to Optical Properties of Solids, Group Theory in Molecules and Solids, Metallic Functional Materials, Polymer Chemistry, Energy Materials and Environmental Materials, Biomaterials, etc.), students seek to gain the specialized knowledge universally required in the area. – Through the research activities and seminar presentations in Research IA, etc. in the area, students acquire the abilities required of highly specialized professionals, such as highly specialized fundamental abilities, practical ability, broad perspective, problem-solving ability and information provision ability.

Admission Policy

Desired Student Profile	We seek students who have the motivation to expand their learning in this area with their robust basic academic abilities and English proficiency necessary for learning advanced engineering, as well as extensive and deep curiosity, mental capability that spares no effort to make their purposes, high ethical view, robust disciplinary bases and sufficient communication ability.

Student Selection Process	The base parameters for the selection of candidates are basic academic abilities and basic knowledge as well as the deep insight based on them. Those who have the motivation and concentration for carrying out research proactively and enthusiastically are selected through written and oral exams.

Learning Support Framework

Academic Support	<Subprogram in Applied Physics> – A multiple-advisor system ensures objectivity in research guidance and facilitates diverse consultation support. – A required graduate seminar is offered for first- and second-year master's students. This provides an opportunity to present one's own research and listen to others' presentations, enabling objective review of one's research and supporting its deepening. <Subprogram in Materials Science> Through a system of multiple academic advisors, the program ensures the objectivity of research supervision and provides a structure that allows students to seek advice on a wide range of issues. Opportunities are provided for students to participate in research presentation meetings, with travel expenses covered to encourage their involvement. These events serve as valuable opportunities for students to objectively review their own research approaches and to further advance their studies. Intensive courses are also offered to help students improve their skills in academic writing and delivering presentations in English. In addition, to broaden their perspectives, the program organizes Materials Engineering Seminars, inviting speakers from both inside and outside the university to share their expertise and insights.

Opportunities for Peer Interaction	<Subprogram in Applied Physics> – We offer a required graduate seminar for first- and second-year master's students. This seminar incorporates a mechanism into the curriculum that promotes exchange opportunities among students across grades and organizations. Students present their own research, listen to others' presentations, and engage in Q&A sessions. – We have created a system that continuously generates opportunities for peer learning through teaching assistantships (TAs) for undergraduate lectures and experiments. – Through student gatherings held at the Graduate School, opportunities for interaction among students across disciplines are provided. <Subprogram in Materials Science> The program provides opportunities for students to participate in research presentation meetings beyond their own academic year, integrating these activities into the curriculum to promote interaction among students across different cohorts through Q&A sessions and discussions. In addition, it fosters continuous peer learning by implementing a Teaching Assistant (TA) and tutor system, as well as supporting student-led projects. Furthermore, the program encourages participation in student gatherings organized by academic institutes and research centers, providing opportunities for students to engage with peers from diverse academic disciplines.
Opportunities for Student–Faculty Interaction	<Subprogram in Applied Physics> – Through student gatherings held at the Graduate School, opportunities for interaction among students across disciplines are provided. – In the graduate seminars, students present and engage in Q&A sessions not only with their primary and secondary advisors but also in front of other faculty members, providing opportunities for interaction with faculty beyond their direct advisors. – An annual graduate student-faculty discussion meeting is held to promote interaction between students and faculty. <Subprogram in Materials Science> The program provides opportunities for students to engage with faculty members from various fields beyond their own area of specialization through gatherings organized by academic institutes and research centers. In addition, all faculty members involved in the degree program participate in events such as the master's thesis presentation meeting, creating opportunities for interaction and exchange of ideas between students and both their primary advisors and other faculty members. Furthermore, an annual meeting is held to facilitate open discussions and strengthen communication between students and faculty.

Approaches to Assuring and Enhancing Educational Quality

<Subprogram in Applied Physics>

- Questionnaires are conducted after lectures (specialized subjects, specialized foundation subjects, etc.) to inform verification and improvement.
- Syllabus checks are conducted annually, primarily by academic affairs committee members. Quality is ensured by prompting faculty to make revisions or improvements as necessary.
- After the master thesis examination, evaluate the students' learning outcomes and verify the validity of the curriculum and the appropriateness of guidance.

<Subprogram in Materials Science>

By having all faculty members participate in the master's thesis presentation meeting, the program ensures that the quality of education is thoroughly reviewed. Any areas identified for improvement are then discussed by the program's steering committee, and necessary actions are taken to enhance the overall educational program.

Master's Program in Materials Innovation

Master of Engineering

Program Educational Objectives

The Master's Program in Materials has committed tie-ups with research institutes in the Tsukuba region to cultivate human resources who are active in the international society using the innovation ability that is achieved by applying leading-edge materials sciences and technologies while looking into nature deeply and grasping global scale problems from the perspective of materials science and engineering.

Graduate Profile	The Program seeks to cultivate human resources who can lead the future-oriented innovative energy materials and also the innovation in electronics so that they can contribute to the creation of social values. He or she should have the capabilities to design, analyze and create materials and grasp global scale social needs to be active in the international society by getting their English proficiency into full use.

Diploma Policy

The degree of Master of Engineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Materials design ability: Foundations of quantum mechanics to learn the methodologies for designing materials	①If the basic knowledge necessary for quantum mechanics research was gained ②If the methodologies for designing materials were gained

	Competences	Evaluation perspectives
Knowledge and Skills	7. Analytical ability for materials functionalities: Analytical foundations such as synchrotron radiation materials analysis, spectroscopy, scanning probe microscopy and electron microscopy to learn the techniques for analyzing materials functionalities at the molecular and electron level	①If analytical foundations such as synchrotron radiation materials analysis, spectroscopy, scanning probe microscopy and electron microscopy were gained ②If the techniques for analyzing materials functionalities at the molecular and electron level were gained
	8. Materials creation ability: Foundations and methodologies for the synthesis of novel materials and the build of high-performance devices	①If the foundations for the synthesis of novel materials and the build of high-performance devices were gained ②If the methodologies for the synthesis of novel materials and the build of high-performance devices were gained
	9. Fundamental engineering ability: Basic knowledge, academic abilities and research ethics appropriate to highly specialized professionals in the areas of engineering	①If the basic specialized knowledge in the areas of engineering sciences was gained ②If a wide range of specialized knowledge necessary for the applied development of research in the areas of engineering sciences was gained ③ If researcher ethics and engineer ethics were understood and adhered by
	10. English communication ability: Ability to use English for the active access to researchers in the world to communicate as to research	If one has interests in global research trends in the areas of engineering sciences and if the ability to communicate in English with researchers in the world was gained
Guidelines for Assessing Learning Outcomes	The final examination (Master's thesis presentation) involves an oral presentation on the research objectives, methods, results, and discussion within the Master's thesis. This presentation is evaluated on a five-point scale for knowledge application ability, management ability, communication ability, and teamwork ability. Furthermore, during the oral examination following the presentation, the candidate's ability to provide appropriate responses regarding material design ability, analytical ability for materials functionalities, material creation ability, and fundamental engineering ability is evaluated on a five-point scale. Furthermore, through presentations and oral examinations conducted in English, students' internationality competence and English communication ability are confirmed to have been acquired.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and two or more sub-reviewers. 【Review method】 The thesis review board administers thesis review and the final exam or the confirmation of academic abilities. 【Review items】 1. The setup of research tasks and the selection of research methods must be appropriate. 2. The line of reasoning must be clearly developed in English from the objectives of research to the conclusions. 3. The preceding researches related to research tasks must be grasped and understood with appropriate appraisal and citation. 4. With adherence to research ethics, the obtained results and conclusions must be verifiable by third parties. 5. Academic significance must be identifiable in research findings. 【Level standards required for the degree thesis】 All of the above evaluation items must be met. The thesis passes with the final exam or the confirmation of academic abilities included in the judgment.

Curriculum Policy

Realms as pillars of education and research: Organized in energy materials engineering, environmental materials engineering, and electronic materials engineering.
The Program is designed to provide students with education and research supervision to develop a breadth of basic skills in pure and applied sciences and to have the big picture in mind in science and technology, which extends over natural science and engineering, as well as the generic knowledge and ability that support students to be active in diverse social scenes, along with the research ability, specialized knowledge and ethics in each area of expertise.
The education programs, which are all taught in English, are organized with Foundation Subjects for Major, which seek to enrich the disciplinary foundation, and Major Subjects, which cover leading-edge academic research.

Curriculum Design Framework	In order to cultivate the basic skills and wide perspectives as well as generic knowledge and ability in associated areas with the student's major at the core, Colloquium on Pure and Applied Sciences (1 credit) must be taken as a required subject from Degree Programs' Common Courses, and students are encouraged to take other Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses. The research supervision takes a multiple-instruction scheme to develop a research ability that exerts multifaceted perspectives.

Curriculum Design Framework	– This curriculum arrangement is set down with students' interests in mind: On the one hand, students gain the basic concepts indispensable to pursue the Doctoral Program to be active as leading researchers in the future; on the other hand, students develop practical abilities that directly connect to research and development at companies. – The seminars, including open seminars, in which students present their own research, and combined seminars, in which multiple laboratories are interrelated, help students cultivate a broad range of abilities to debate in English.
Teaching and Learning Methods	– With Materials Innovation Research IA, IB, IIA and IIB (Required subject: 3 credits each), students work on the research of their respective area of expertise and gain the basic knowledge by the end of the Master's Program. Students seek to improve the research ability to advance to the Doctoral Program and build the potential to accomplish the world's top research results in the future. – With Open Seminar IA, IB, IIA and IIB (Required subject: 1 credit each), Students present their respective research in English and make active English discussions. The resumes of presentations are created in English. Communication ability in English is gained. – With Joint Seminar IA, IB, IIA and IIB (Elective subject: 1 credit each), each student participates in research activities of other laboratories or those overseas over one semester to seek to deepen the research level in their own research theme and extend their interdisciplinary points of view. Students also experience diverse research environments by going to the seminars of other laboratories of areas different from the one that the student belongs, and are required to submit a report as to what they learn there.

Admission Policy

Desired Student Profile	We seek candidates who possess outstanding fundamental abilities and intellectual capabilities and are eager to research by actively opening up a new realm with an ambition to become an outstanding researcher in the future. The Program, which is all taught only in English, demands candidates to have sufficient English proficiency.
Student Selection Process	– Candidates are solicited all over the world, not limited to Japan. The Program seeks candidates with a variety of backgrounds regardless of differences in nationality, race and gender. The quality that the Program values more than any other is a positive attitude that the candidate had toward the basic knowledge and basic experiment in the four years of the university. The potential students to be selected out should demonstrate the abilities that will be indispensable for the world's top graduate school master's program. – Through an online interview, candidates are evaluated for their basic academic abilities, abilities to debate in English, and logic forming skills. In addition, candidates' motivation to research is judged from the aspiration they have for the Master's Program and the subsequent future.

Learning Support Framework

Academic Support	We provide support for travel expenses and registration fees for presentations at international conferences and symposia in the field of materials science. Additionally, we offer guidance on presentations (oral and poster) for such events, including practice for Q&A sessions.
Opportunities for Peer Interaction	Research exchange at the Open Seminar, and a master's thesis presentation for all participants, followed by an exchange of opinions.
Opportunities for Student–Faculty Interaction	Experience research in different fields through joint research with other laboratories, as well as a master's thesis presentation and subsequent exchange of opinions in which all students participate.

Approaches to Assuring and Enhancing Educational Quality

Students' learning outcomes are evaluated through mid-term and final assessments and master's thesis presentations, and the validity of the curriculum and the appropriateness of instruction are verified.

Doctoral Program in Mathematics

■ Doctor of Philosophy in Science

Program Educational Objectives

The Doctoral Program in Mathematics cultivates researchers and university faculty members who can be internationally active with a wide perspective covering from pure to applied mathematics, and also social instructors in education and industry circles, etc. as well as highly specialized professionals who can apply mathematical knowledge into various areas.

Graduate Profile	Researchers who can be internationally active with a wide perspective covering from pure to applied mathematics, social instructors in education and industry circles, etc., and other human resources who can apply advanced mathematical knowledge into various areas.

Diploma Policy

The degree of Doctor of Philosophy in Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Mathematical analysis ability: Ability to see the nature of issues from a higher (mathematical) perspective and analyze them mathematically	①If deep understanding was gained as to the important problems in various research realms ②If a good command of basic mathematical knowledge was gained

	Competences	Evaluation perspectives
Knowledge and Skills	7. Ability to carry out mathematical research: Ability to carry out research independently while setting up research tasks based on leading-edge advanced knowledge	①If problems are identified by oneself based on the leading-edge advanced knowledge in one's own area of expertise ②If research is carried out independently while a long-term plan is drawn up to work on its tasks
	8. Ability to solve mathematical tasks: Ability to work on tasks from a higher perspective and by using leading-edge advanced mathematical knowledge	①If the use of leading-edge advanced mathematical knowledge is actively tried ②If capable of seeing problems from a higher perspective and solving them under a long-term plan
	9. Information provision ability: Ability to provide research findings to the society through academic papers, academic lectures, etc.	①If sufficiently capable of debating on research with experts through academic papers or presentations in academia ②If one's research findings are clearly expressed to those from different areas and not just one's own area and if efforts to contribute to the society through mathematics are made
	10. Mathematical expressiveness: Ability to debate with experts in various areas inside and outside Japan	①If the ability to smoothly communicate with overseas researchers was gained ②If the ability to explain and understand was gained to make specialized debates with experts of various areas
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement assessments based on the “Achievement Assessment Form”. This process objectively verifies and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. The stages and methods of achievement assessment are outlined below. – The Doctor of Science candidate's possession of appropriate abilities is evaluated through the degree discussion session, conducted as part of the preliminary review, in addition to the degree thesis public hearing at the time of completion. – The evaluation of whether the candidate has produced research outcomes appropriate for a Doctor of Science degree is conducted through peer review of international academic papers. The final assessment of achievement in these areas is performed during the thesis examination and final examination.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and three or more sub-reviewers. 【Review method】 Prior to the receipt of a degree thesis, to determine the acceptance of the submission, the degree thesis is preliminarily reviewed. The dissertation review board administers dissertation review and the final exam or the confirmation of academic abilities. 【Review items】 1. The research theme must be clearly indicated with the presence of academic significance. 2. The preceding researches associated with the research theme must be appropriately presented. 3. The line of reasoning to reach the conclusion must be provided logically and clearly. 4. The degree dissertation must be academically contributory of high academic value in the area. 5. The thesis must have appropriate sentence expressions and thesis construction as a degree thesis. 【Level standards required for the degree thesis】 All of the above evaluation items must be met. The dissertation passes as a doctoral dissertation with the final exam or the confirmation of academic abilities included in the judgment.

Curriculum Policy

The curriculum is diversely organized with a system of education and research in the four areas of algebra, geometry, analysis and mathematics of information.

Curriculum Design Framework	Through fine research supervision according to each student's ability and the seminars in the areas of expertise, the curriculum is organized to train students to have a broad range of perspective from the foundation to application in the associated areas to leading-edge modern mathematics. – With Research in Algebra IIIA to VB, students gain advanced thinking ability for the grasping of algebraic structures. – With Research in Geometry IIIA to VB, students gain advanced thinking ability for the grasping of geometric structures. – With Research in Analysis IIIA to VB, students gain advanced thinking ability for the analysis of analytical structures. – With Research in Mathematics of Information IIIA to VB, students gain advanced thinking ability for mathematics of information. – With Internship in Mathematics III and Internship in Mathematics IV, students increase the abilities necessary for forming their future career paths.

Curriculum Design Framework	– With this area's Research IIIA, Research IIIB, Research IVA, Research IVB, Research VA and Research VB, students gain the above thinking abilities and at the same time gain the ability to carry out research while setting up research tasks independently, and the communication ability to grasp the problem awareness that those from different areas and not just one's own area have and express one's own specialized knowledge clearly to those from different areas and not just one's own area.
Teaching and Learning Methods	Carrying out leading-edge research under the advice of supervisory faculty members helps students develop the fundamental and applied abilities appropriate to a doctoral degree in science to grow to be a human resource who can conduct highly ingenious research.

Admission Policy

Desired Student Profile	He or she should possess mathematical knowledge as equivalent to a master's program completed in graduate school and have the great interest and motivation to research on mathematics and the high motivation to conduct research on leading-edge modern mathematics. In addition, we seek candidates who pursue to draw on their mathematical research abilities in the future to become a “researcher” , “educator” or “highly specialized professional” .
Student Selection Process	Selection places emphasis on the master's thesis content and post-enrollment research plan.

Learning Support Framework

Academic Support	– The graduate course “Special Research”, which provides research guidance for doctoral dissertations, is conducted with students giving presentations in the laboratory nearly every week. Within this framework, in addition to providing presentation guidance, close supervision is also given regarding research progress and time management. – By conducting the preliminary thesis review as a thesis seminar, students are provided an opportunity to receive presentation guidance from faculty members other than their primary advisor.
Opportunities for Peer Interaction	– Tea time is held before the start of the mathematics department's discussion sessions. Many students participate in these sessions, providing opportunities for interaction among students. – Graduate students serve as tutors in the “Mathematics Tutorial Workshop”, a learning support session for undergraduate students, creating opportunities for interaction between undergraduates and graduate students. – Similar events like “Mathematical Crossroads” and “RCMS Salon” are also held to provide opportunities for student interaction.

Opportunities for Student–Faculty Interaction	– Tea time is held before the start of the mathematics department's discussion sessions. Many faculty members participate in these sessions, providing opportunities for interaction between students and faculty. – Similar events such as “Mathematical Intersections” and the “RCMS Salon” are also held to provide opportunities for interaction between students and faculty.

Approaches to Assuring and Enhancing Educational Quality

- For research toward the Doctor of Science degree thesis, in addition to the thesis defense at the time of graduation, a preliminary thesis discussion session is held as part of the preliminary review process. This ensures all faculty members can confirm the academic value and provide feedback.
- At the Degree Evaluation Committee, the committee assesses students' learning outcomes and verifies the validity of the curriculum and the appropriateness of instruction.
- Course evaluation questionnaires and graduation surveys are conducted, with student feedback utilized to improve lectures.
- Competence achievement assessments are conducted twice: mid-term and upon completion. Students perform self-assessments, which are then verified by their academic advisors.

Doctoral Program in Physics

Doctor of Philosophy in Science

Program Educational Objectives

The Doctoral Program in Physics is designed to help students discover problems willingly and develop the ability to research and solve them through learning to carry out leading-edge physical research under their initiative so that the Program cultivates human resources who are capable of being active as an independent researcher in academia and also industry.

Graduate Profile	He or she should possess not only the qualities in physics but also the knowledge about the areas of associated disciplines and also the ability to scientifically challenge and break through problems that should be elucidated and solved. In academia, he or she should possess advanced specialized knowledge and real research ability and be capable of making strides in the frontier of science in the extensive areas of physics that spread out from the architecture of the universe to the materials world and in their boundary areas with other disciplines. In the industrial field, he or she should be capable of making innovations in industrial technologies by going back to the first principles of things to challenge difficult issues that no one could have solved. In the course of the history of the universe, the Program adopts a system of education that crosses over international research bases based on the viewpoint of seeing the disciplinary areas of particle physics, nuclear physics and physical cosmology as the evolution processes of the universe in order to thereby cultivate human resources who possess the interdisciplinary ability to involve all these areas along with a high level of expertise and are capable of being internationally active concerning the history of the universe. In the course of accelerator science, he or she should be capable of being active in this field in the future, through the research and next-generation accelerator development using the B-factory, J-PARC and accelerator-based synchrotron radiation science research facility of High Energy Accelerator Research Organization, etc. In the course of synchrotron radiation materials science, he or she should gain knowledge and skill in both areas of synchrotron radiation, etc. in addition to materials science through the research utilizing synchrotron radiation facilities (for example, PF, J-PARC, SPring-8 and overseas facilities), etc. and be capable of promoting materials development at universities or institutes inside and outside Japan, synchrotron radiation facilities or private sector companies.

Diploma Policy

The degree of Doctor of Philosophy in Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Creative ability: Fundamental abilities to create physical knowledge to contribute to human society development by identifying a universal structure in the natural setting	①If problems are raised in consideration of the relationship between physics and society using wide knowledge in the areas of physics ②If concrete measures contributory to the society are proposed using the knowledge in their own area of expertise

	Competences	Evaluation perspectives
Knowledge and Skills	7. Physical ability: Leading-edge scholarly knowledge and the ability to debate and conduct joint research with researchers inside and outside Japan	①If the basic specialized knowledge in the areas of physics was gained and physical phenomena are addressed with logical thinking ②If the advanced specialized knowledge in one's own area of research was gained and research is thereby carried out
	8. Ability to carry out: Ability to independently carry out ingenious research developed out of one's own area of expertise further	①If the trends in one's own area of expertise are closely watched and academic significance is grasped from a broad view ②If one's own research is judged objectively and new strides are created
	9. Information provision ability: Ability to provide a clear description of one's research to those from different areas and not just one's own area	①If the academic importance of one's own research is explained in an appealing way ②If a description of concepts peculiar to physics is made clear in a persuasive way to those from different areas and not just one's own area
	10. Logical ability: Dedication to duty, logicality and independence as a scientist	①If one is enthusiastic about searching for natural truth, and corresponding action is accompanied ②If the planning, methodology, execution and confirmation of research are scientific and sincere
Guidelines for Assessing Learning Outcomes	Learning outcomes are assessed by objectively confirming and evaluating the degree of competence acquisition based on the degree awarding policy at each stage through achievement assessment based on the "Achievement Assessment Table". The stages and methods of achievement assessment are shown below. Achievement assessment is conducted at the end of the second year (mid-term examination) and at the end of the third year, and the results are confirmed by the supervising professor, etc. Knowledge and ability are assessed through preliminary examinations, submission of doctoral thesis, and public doctoral thesis presentations.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and three or more sub-reviewers. 【Review method】 Prior to the receipt of a degree thesis, to determine the acceptance of the submission, the degree thesis is preliminarily reviewed. The dissertation review board administers dissertation review and the final exam or the confirmation of academic abilities. The final exam includes the evaluation of the ability for presenting one's research content to those from different areas and not just one's own area and the ability to have disciplinary communication with researchers from different areas and not just one's own area. 【Review items】 1. Grasping and understanding of preceding researches associated with one's research content, and the appropriate appraisal and citation of their literature and materials 2. Setting of appropriate research tasks, and the clear presentation of research method and its appropriateness 3. Reproducibility of obtained results, or verifiability by third parties 4. Unequivocal thesis construction, and appropriate development of line of reasoning before reaching the conclusion 5. International-level academic contribution 【Level standards required for the degree thesis】 With the adherence to research ethics, all of the above evaluation items must be met. As for evaluation item ⑤, the degree dissertation must be written in English in principle, and if its overview has not been presented in any international academic journal, it must be presented within one year after the date of the grant of degree. The dissertation passes as a doctoral dissertation with the above requirements and the final exam or the confirmation of academic abilities included in the judgment.

Curriculum Policy

The Program consists of a total of ten areas of expertise, which are theoretical particle physics, experimental particle physics, cosmology, observational cosmology, theoretical nuclear physics, experimental nuclear physics, theoretical condensed matter physics, experimental condensed matter physics, biophysics, and plasma physics, and a total of three realms, which are the history of the universe, accelerator science, and synchrotron radiation materials science.

Curriculum Design Framework	In the areas of particle physics, nuclear physics and astrophysics, the course of the history of the universe is organized for a system of education crossing over international research bases. In the areas of condensed matter physics, the Program organizes the course of synchrotron radiation materials science, where students can acquire the knowledge and skill in synchrotron radiation application which serves as a powerful technique for the search in materials science, through the cooperation of Japan Synchrotron Radiation Research Institute and Photon Factory. In addition, the course of accelerator science is organized through the education and research tie-up with High Energy Accelerator Research Organization. Since physics is the foundation of natural science, the Program in Physics is deeply interrelated in research and education with other Programs of Graduate School, and research centers (Center for Computational Science, Tomonaga Center for the History of the Universe, Tsukuba Research Center for Energy Materials Science, Plasma Research Center, etc.) as well as major research institutes inside and outside Japan. Taking advantage of this characteristic, the Program provides various education programs, including the Cooperative Graduate School System (National Institutes for Quantum and Radiological Science and Technology, National Institute of Advanced Industrial Science and Technology, National Institute for Materials Science, RIKEN, NTT, NEC, etc.) and Tsukuba Resonance Education Program. – Students belong to their respective area of specialty and thereby gain a high level of expertise. – By taking special research subjects of each area, students acquire a wide perspective, and through the deepening of each one's original research theme, develop fundamental and applied abilities and fortitude as a researcher. – In addition, students acquire practical abilities with information provision/communication ability development subjects in Graduate General Education Courses.
Teaching and Learning Methods	Students belong to any of the laboratories of their respective area of specialty. By taking special research subjects of each area, students acquire a wide perspective, and through the deepening of each one's original research theme, develop fundamental and applied abilities and fortitude as a researcher, so that they can proceed as independent researchers.

Admission Policy

Desired Student Profile	We seek candidates who have master's degree level skills in physics and its associated scientific areas and English proficiency, have the great interest and motivation to conduct leading-edge research in the areas of physics and pursue to be a researcher in academia and industry.

Student Selection Process	Selection places emphasis on the master's thesis content and post-enrollment research plan.

Learning Support Framework

Academic Support	We have implemented a secondary supervisor system. Secondary supervisors meet with students on a regular basis and provide effective learning guidance from a different perspective than the supervisor.
Opportunities for Peer Interaction	In order to promote interaction between graduate students across laboratories, we hold a social gathering for graduate students once a year.
Opportunities for Student–Faculty Interaction	In order to promote interaction between graduate students and faculty, especially faculty other than their supervisor, we hold an exchange meeting between graduate students and faculty once a year.

Approaches to Assuring and Enhancing Educational Quality

A Curriculum Committee has been established and meets monthly. An Educational Conference, attended by all faculty members, is also held monthly. The Curriculum Committee and Educational Conference evaluate students' learning outcomes and continually inspect and improve all educational activities, ensuring the quality of education and strengthening the system for achieving the goals of the degree programs.

Doctoral Program in Chemistry

Doctor of Philosophy in Science

Program Educational Objectives

The Doctoral Program in Chemistry cultivates highly versatile researchers who propose leading-edge research themes in the areas of chemistry, appropriately formulate research plans, smoothly driving such research forward, and can practice all of these independently with ingenuity from a global view whether in academia or industry.

Graduate Profile	He or she should have the clear intention and sincere attitude to contribute to the world through chemistry, and the ability to plan and drive forward research independently with the understanding of social needs, communication ability and linguistic skill capable of negotiating in the international society, as well as the ability to provide or pass along such research findings to the society through their academic papers, etc. and also should couple all of these abilities with a high ethical view in their research activities.

Diploma Policy

The degree of Doctor of Philosophy in Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Specialized chemical knowledge: Theoretical and practical knowledge about physical chemistry, organic chemistry and inorganic/analytical chemistry, and the ability to put it into use in actual research scenes	If theoretical and practical knowledge about physical chemistry, organic chemistry and inorganic/analytical chemistry, and the ability to put it into use in actual research scenes were gained

	Competences	Evaluation perspectives
Knowledge and Skills	7. Logical thinking and problem-solving ability: Ability to analyze and solve problems by logical thinking	If the ability to analyze and solve problems by logical thinking was gained
	8. English proficiency specialized in chemistry: Ability to use English in carrying out a presentation and question-and-answer session and writing a paper as to chemical research	If the ability to use English in carrying out a presentation and question-and-answer session and writing a paper as to chemical research was gained
	9. Ability to drive research forward: Ability to set up research tasks and draw up long-term and short-term research plan	If the ability to set up research tasks and draw up long-term and short-term research plan was gained
	10. Research ethical view of good quality: Ability to appropriately handle and store research data and to appropriately cite other researchers' findings	If research data are appropriately handled and stored and if other researchers' findings are appropriately cited
Guidelines for Assessing Learning Outcomes	For the oral presentation at the mid-term review (held from the autumn semester of the second year through the spring semester of the third year) all academic supervisors evaluate the student's acquisition of competences specified in the diploma policy, based on a rubric. At the time of doctoral thesis submission, all academic supervisors verify and evaluate the student's attainment of competences stipulated in the diploma policy, based on the “Achievement Evaluation Sheet”. For the oral presentation in the doctoral theisis defence in the final year, one chief examiner and at least two sub-examiners evaluate the student's acquisition of competences specified in the diploma policy, based on a rubric. One and a half years after admission, an achievement evaluation is conducted. Following confirmation and guidance from individual supervisors, all research supervisors verify and evaluate the results.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 A thesis review board, which is set up with a chief reviewer (supervisory faculty member) and three sub-reviewers, is launched. The chief and sub-reviewers must be doctor's degree holders. In addition, the chief reviewer must belong to Tsukuba (including the Cooperative Graduate School System), and the sub-reviewers, to Tsukuba (including the Cooperative Graduate School System) or a research institution approved by the professor meeting in the chemical field. 【Review method】 The chief and sub-reviewers review the submitted doctoral dissertation. A doctoral dissertation review board opens and arranges the oral presentation and oral exam of the doctoral degree candidate to evaluate the comprehension of research content and the achievement of the research. After the board finishes evaluation, the dissertation reviewers have an evaluation meeting and decides on the final acceptance. 【Review items】 1. The submitted doctoral dissertation must have a high level of completeness including the description, logical development and graphics. 2. The doctoral dissertation content must be on the world's high level standards as research in the areas of chemistry. 3. The doctoral dissertation must have references cited appropriately. 4. The doctoral dissertation must show the sufficient contribution of the doctoral degree applicant. 5. Preceding researches must be deeply understood and the disciplinary position of the research theme must be clear. 6. The doctoral dissertation content must be deeply understood and the question-and-answer session in the presentation must be carried out appropriately. 【Level standards required for the degree thesis】 The dissertation passes if approved to be on a doctoral dissertation level in all criteria 1 to 5 and if approved to have an appropriate level of doctoral degree diploma with criterion 6 met in the presentation and oral exam in the doctoral dissertation review board.

Curriculum Policy

The curriculum places four large frameworks which include the boundary areas with life sciences and engineering, etc. in addition to inorganic/analytical chemistry, physical chemistry and organic chemistry, which form the foundation of chemistry. This system allows a research theme to involve a wide range of chemical areas. Through this specialized research, students conduct leading-edge research to experimentally and theoretically elucidate the structures and properties of various chemical substances as well as chemical reaction mechanisms, etc. at the molecular level. With this, students learn the chemical concepts covering from the foundation to application of chemical substances and also the advanced and very specialized techniques of experiment and research.

Curriculum Design Framework	– The curriculum is finely organized to let Major Subjects include exercises and seminars, which are offered with evaluation that is very carefully arranged in several steps so that students can gain the specialized contents of chemistry and also the abilities appropriate to a doctoral degree in science. – In exercises and seminars, students are always required to raise problems and propose solutions as to their own research and experiment as well as their dissertations with leading-edge research. In this way, students are thoroughly supervised to possess the logic to be able to analyze data precisely and objectively and also the ability to formulate their own research plans. – Above all, Research Proposal, which is a required subject, helps students develop the ability to independently unearth problems and plan a research. – In addition, some exercises and Graduate General Education Courses serve to train students to gain communication ability and linguistic sill. – As for the research area of each student, students learn advanced contents under the personal attention of supervisory faculty members in charge.
Teaching and Learning Methods	– The curriculum places four large frameworks which include the boundary areas with life sciences and engineering, etc. in addition to inorganic/analytical chemistry, physical chemistry and organic chemistry, which form the foundation of chemistry. – The curriculum is finely organized to let Major Subjects include exercises and seminars, which are offered with evaluation that is very carefully arranged in several steps. – Above all, Research Proposal, which is a required subject, helps students develop the ability to independently unearth problems and plan a research.

Doctoral Program in Chemistry / Doctor of Philosophy in Science

Admission Policy

Desired Student Profile	The Program seeks those who possess the sufficient scientific skills, logical and rational thinking abilities and linguistic skill cultivated in a master's program and can challenge problems persistently toward solutions. The Program, which seeks to cultivate researchers and highly specialized professionals possessing the advanced specialized knowledge and abilities to contribute to the society by playing a role in chemistry's progression in actual cutting-edge research scenes, welcomes those who can be actively committed to learning and research with a strong desire to learn to attain what the Program aims.
Student Selection Process	In light of Desired Students, diverse candidates who possess the qualities and abilities appropriate as potential researchers or highly specialized professionals are selected. Candidates are evaluated from multifunctional and comprehensive points of view with consideration for fairness and diversity.

Learning Support Framework

Academic Support	Through a support system consisting of co-supervisor and specialised fields (inorganic/analytical chemistry, physical chemistry, and organic chemistry), objectivity in research guidance and responsiveness to a variety of consultations are ensured. By providing opportunities to participate in lectures and seminars outside of the student's own specialised research field, as well as research presentation meetings and study groups, support is given for deepening research, along with guidance in presentation skills and writing support.
Opportunities for Peer Interaction	By providing opportunities to participate in events such as research presentation meetings and career path lectures, where students from different academic years gather, a system is established to promote interaction among students across years and groups through QandA sessions and open discussions. Through the Semikai (a degree-program-wide seminar), opportunities are provided for interaction among students across research fields and academic years.
Opportunities for Student–Faculty Interaction	Faculty members of the degree program participate in the “Research Proposal”, providing opportunities for interaction with faculty outside the student's own specialty through exchanges of opinions and discussions. Through the Semikai (a degree-program-wide seminar), opportunities are provided for interaction with faculty members other than the supervisor and co-supervisors. Meetings between graduate students and the faculty council are held to provide opportunities for interaction with faculty members other than the supervisor and co-supervisors.

Approaches to Assuring and Enhancing Educational Quality

Through ongoing reviews and improvements of overall educational activities—conducted in settings such as meetings between graduate students and faculty—we will ensure the quality of education and strengthen the framework for achieving the goals of the degree program

Doctoral Program in Engineering Sciences

Doctor of Philosophy in Engineering

Program Educational Objectives

In the diverse areas ranging from substances, materials, devices to measurement technologies, the Doctoral Program in Engineering Sciences is designed to cultivate outstanding researchers who base themselves on their sufficient fundamental abilities in science and possess the deep knowledge and rich creativity to address diverse problems in reality, as well as such researchers and highly specialized professionals who have the applied engineering ability and the ability to make use of it to create original technologies and cultivate potential younger talents.

Graduate Profile	Outstanding researchers who base themselves on their sufficient fundamental abilities in science and possess the deep knowledge and rich creativity to address diverse problems in reality in leading-edge engineering, as well as highly specialized professionals who possess the advanced research and development ability to contribute to the society <Subprogram in Applied Physics> Human resources who lead research, technological development and engineering practice at the world's level in the areas of applied instrumentation, nanotechnology and electronic devices founded on the natural science around physics; researchers who possess outstanding research and development abilities with rich creativity or highly specialized professionals with advanced specialized knowledge and abilities <Subprogram in Materials Science> Human resources who possess the research ability necessary as an independent researcher with the deep knowledge in the areas of expertise in materials engineering such as quantum physics of solid state, theoretical quantum physics and materials physics, and materials chemistry and biomaterials engineering; researchers capable of carrying out advanced research and highly specialized professionals possessing the advanced research ability to contribute to the society <Subprogram in Materials Science and Engineering> Researchers of the National Institute for Materials Science supervise research as Graduate School faculty members to train human resources in the areas of materials engineering, such as metal and ceramic materials engineering, nanomaterials engineering, organic and biomaterials engineering, engineering physics, and semiconductor materials engineering; researchers who have very creative, outstanding abilities in research and development and highly specialized professionals who possess advanced applied engineering ability and the ability to make use of it to contribute to various social issues as experts of materials engineering.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Fundamental engineering ability: Knowledge and academic abilities appropriate to researchers or highly specialized professionals in the areas of engineering	If a clear description of the nature of the research content and specialized knowledge is provided to the uninitiated or those from different areas and not just one's own area

	Competences	Evaluation perspectives
Knowledge and Skills	7. Basic academic abilities: Solid basic academic abilities indispensable for applied studies in the areas of engineering	If advanced mathematical knowledge and abilities widely used in engineering were gained
	8. Specialized knowledge: Advanced specialized knowledge required for applied studies in the areas of engineering and associated areas	If a wide range of specialized knowledge in the areas of engineering and the advanced techniques for conducting leading-edge research were gained
	9. Ethical view: High ethical view required of researchers or highly specialized professionals in the areas of engineering	If researcher ethics, engineer ethics, and human research ethics as well as formalities and/or procedures necessary for research were sufficiently understood
	10. Practical insight and problem-solving ability: Insight and problem-solving ability required to solve problems in practice in the areas of engineering and associated areas	①If leading-edge research tasks were appropriately set up and research was carried out with the accomplishment of ingenious results ②If the presentation and communication abilities to debate with experts in the world were gained
Guidelines for Assessing Learning Outcomes	<Subprogram in Applied Physics> Learning outcomes are evaluated by objectively confirming and evaluating them using the "Achievement Evaluation Table (Rubric)". Following the doctoral dissertation review, the final examination will be conducted via oral questioning according to the following guidelines: – During the final examination, oral questioning will assess the research objectives, methods, and progress outlined in the doctoral dissertation (special research), confirming the candidate's ability to apply knowledge, management skills, communication skills, and teamwork capabilities. – The final examination will include oral questioning in a foreign language to confirm the candidate's ability to provide appropriate responses. – The final examination will include an oral examination on fundamental engineering skills, basic academic abilities, and specialized knowledge to evaluate the candidate's ability to provide appropriate responses. – The final examination will include an inquiry regarding research ethics to confirm the candidate's thorough understanding. – The final examination will include an oral examination on issues within the engineering field to confirm the candidate's ability to provide appropriate responses.	

Guidelines for Assessing Learning Outcomes	<Subprogram in Materials Science> The evaluation of learning outcomes is carried out using an Achievement Evaluation Sheet, which serves as a rubric to systematically verify and assess the acquisition of competences as defined by the diploma policy at each stage of the program. Each year, presentations given in the Doctoral Seminar are evaluated by the primary advisor along with several faculty members to determine the progress and level of competence acquisition. In the final year, a public presentation of the doctoral dissertation is conducted, followed by a comprehensive review of the research by a Thesis Examination Committee consisting of the primary advisor and at least three sub-examiners. This process concludes with a final achievement assessment, which serves as the final examination for completion of the doctoral program. <Subprogram in Materials Science and Engineering> – Learning outcomes will be assessed by confirming and evaluating the level of mastery of competences based on the degree awarding policy using an “Achievement Assessment Table (rubric)”. – Through Research in Materials Science and Engineering IA, I B, IIA, IIB, IIIA, and IIIB and Seminar in Materials Science and Engineering I and II, students' research achievements, basic skills, expertise, and research planning ability are evaluated from a variety of perspectives. – During the dissertation defense, including the preliminary examination, the content of the doctoral dissertation will be evaluated by a chief supervisor and three or more co-supervisors. At least one supervisor will be invited from outside this subprogram, and the evaluation will be conducted from a broad perspective. In addition to written review, the final evaluation will include a public oral presentation, ensuring a world- level of research, the high quality of the dissertation, and objectivity of the evaluation.

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and three or more sub-reviewers. 【Review method】 Preliminary review, thesis review and the final exam are administered in accordance with the method defined by each Subprogram. 1) Subprogram in Applied Physics Prior to the receipt of a degree thesis, to determine the acceptance of the submission, the degree thesis is preliminarily reviewed. The thesis review board administers thesis review and final exam. 2) Subprogram in Materials Science Prior to the receipt of a degree thesis, to determine the acceptance of the submission, the degree thesis is preliminarily reviewed. The dissertation review board does an evaluation to see if the student possesses the academic abilities and knowledge that become the foundations of all areas of materials engineering and the specialized knowledge of any of the areas of materials engineering and has successfully carried out research with outstanding results while solving the tasks that he/she independently set out in any of the areas of materials engineering through the review of dissertation and the final exam or the confirmation of academic abilities. 3) Subprogram in Materials Science and Engineering Prior to the receipt of a degree thesis, to determine the acceptance of the submission, the degree thesis is preliminarily reviewed. The thesis review board administers thesis review and final exam. 【Review items】 1. The setup of research tasks and the selection of research methods must be appropriate. 2. The interpretation of results and the development of line of reasoning before reaching the conclusion must be appropriate and unequivocal. 3. The preceding researches related to research tasks must be grasped and understood with appropriate appraisal and citation. 4. With adherence to research ethics, the obtained results and conclusions must be verifiable by third parties. 5. Academic significance must be internationally identifiable in the outcomes of research tasks.

Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 All of the above evaluation items and the criteria defined by each Subprogram must be met. 1) Subprogram in Applied Physics Before a dissertation review board is opened, one first-author dissertation must be available to be published or posted in an academic journal. The dissertation passes as a doctoral dissertation with the final exam included in the judgment. 2) Subprogram in Materials Science The curriculum objectives defined in article 2, clause 3 of the school rules of Graduate Education at University of Tsukuba must be fulfilled. With this fulfillment, the dissertation passes as a doctoral dissertation with the final exam or the confirmation of academic abilities included in the judgment. 3) Subprogram in Materials Science and Engineering A dissertation for degree grant meeting all of the above evaluation items passes as a doctoral dissertation with the final examination included in the judgment.

Curriculum Policy

The curriculum is designed to cultivate researchers and highly specialized professionals in the areas of applied instrumentation, nanotechnology and electronic devices, and the areas of quantum physics of solid state, theoretical quantum physics, materials physics, and materials chemistry and biomaterials engineering, etc., and the areas of materials engineering such as metal and ceramic materials engineering, nanomaterials engineering, organic and biomaterials engineering, engineering physics, and semiconductor materials engineering.

Curriculum Design Framework	The curriculum is organized to help students gain specialized knowledge and abilities on the world's high level standards in the areas of engineering. <Subprogram in Applied Physics> – Research is supervised from multifunctional points of view by way of a system of multiple supervisory faculty members. With this, the curriculum cultivates solid fundamental abilities and the deep specialized fundamental abilities founded on them and seeks to help students develop practical insight and the ability to act as well as the ability to solve problems. – In the seminars opened for Research in Applied Physics, students are mandatorily required to make presentations to a wide variety of audiences from different areas and not just one's own area. For the presentations, students are encouraged to use English to develop the presentation and communication abilities that allow them to debate with experts in the world. – With internship, overseas research dispatch, etc., students learn to develop a broad point of view and also the international insight to prepare them to be active worldwide.

Curriculum Design Framework	<Subprogram in Materials Science> – The Subprogram is formed by the four areas of “quantum physics of solid state”, “theoretical quantum physics”, “materials physics” and “materials chemistry and biomaterials”. However, the subjects that students should take to complete the Subprogram are only the “Research IIIA, IIIB, IVA, IVB, VA and VB” (18 credits in total), which are the required subjects of each area. In these subjects, in addition to the research activities according to each student's theme for doctoral dissertation creation, students are required to make a research presentation once a year in “Doctoral Program Seminar”, in which the students and faculty members in the major participate, and use English in this presentation to be trained to present research progress and have debates in English. – By this, students gain advanced specialized knowledge and the insight, problem-solving ability and communication ability required to actually solve problems. – To gain a wide perspective not limited to the deep specialized knowledge in specific areas, students are encouraged to take Major Subjects in the Master's Program, specialized subjects of other Programs or Courses, and Graduate General Education Courses. <Subprogram in Materials Science and Engineering> – Students learn under an international and intellectually stimulating research environment at a materials research institute. The curriculum is organized to develop specialized knowledge, basic knowledge in associated areas, the insight that enables students to draw up and set up research plans for new proofs of concept, skills of experimentally or theoretically carrying out drawn and set up research plans, high ethical view in research activities, and the English communication ability capable of internationally providing research outcomes through academia or paper presentations and capable of open and natural debates with overseas researchers. – As subjects that should be taken to achieve this commitment, the curriculum offers “Research IA and IB”, “Research IIA and IIB” and “Research IIIA and IIIB” (18 credits in total), as well as “Seminar I” and “Seminar II” (2 credits in total). – In “Research” which is pursued under a leading and international research environment, students are engaged in advanced research activities for doctoral dissertation creation. – In “Seminar”, students are trained to present research progress and have debates in English. In addition, to gain a wide range of knowledge in the areas of engineering, students are encouraged to take the Master's Program subjects “Nanomaterials I” and “Nanomaterials II” in which faculty members provide discussion of their respective area of research.

Teaching and Learning Methods	Students take special research subjects to meet the fundamental abilities indispensable for the understanding and expansion of the advanced engineering areas of specialty and the necessity of organizing a degree dissertation containing the world's level outstanding research outcomes appropriate to a doctoral degree. <Subprogram in Applied Physics> – Through “Research in Applied Physics IIIA, IIIB, IVA, IVB, VA and VB”, students gain the fundamental abilities indispensable for the understanding and expansion of the advanced areas of specialty in the areas of applied instrumentation, nanotechnology and electronic devices, as well as the highly specialized fundamental abilities required of these areas' researchers or highly specialized professionals, practical insight and ability to act, wide perspective, problem-solving ability, and the presentation and communication abilities to debate with experts in the world. <Subprogram in Materials Science> – Through “Research IIIA, IIIB, IVA, IVB, VA and VB” in the four areas of “quantum physics of solid state”, “theoretical quantum physics”, “materials physics” and “materials chemistry and biomaterials”, students gain the abilities to set up tasks in their own right, then independently carry out research and understand the significance, outcomes and position of the research theme as well as the ability to provide information in English. <NIMS Subprogram in Materials Science and Engineering> – In “Research in Materials Science and Engineering IA, IB, IIA, IIB, IIIA and IIIB”, students are engaged in the world's leading edge research and development in the areas of metal and ceramic materials engineering, nanomaterials engineering, organic and biomaterials engineering, engineering physics and semiconductor materials engineering, and thereby gain the high fundamental abilities and ethical view in research activities as well as the advanced specialized knowledge in the area, the skills to carry out research plans and the ability to solve tasks. – In “Seminar in Materials Science and Engineering I and II” , students present their respective researches and have debates in English and thereby gain the ability to internationally present research outcomes and the communication ability.

Admission Policy

Desired Student Profile	We seek candidates who have interests in engineering sciences, the robust disciplinary bases gained in the master's program, sufficient communication ability, extensive and deep curiosity, strong mental capability that spares no effort to make their purposes, high ethical view, deep long-range perspective, and outstanding foresight.
Student Selection Process	The base parameters for the selection of candidates are basic academic abilities and basic knowledge as well as the deep insight based on them. Those who have the motivation and concentration for carrying out research proactively and enthusiastically are selected through an oral exam based on the master's thesis content and the post-enrollment research plan.

Learning Support Framework

Academic Support	<Subprogram in Applied Physics> – A multiple-supervisor system is in place to ensure objectivity in research guidance and to provide a framework for addressing diverse consultation needs. – A required graduate seminar for first-year doctoral students is offered. This provides an opportunity to present one's own research and listen to others' presentations, enabling students to objectively review their research and supporting its deepening. <Subprogram in Materials Science> Through a system of multiple academic advisors, the program ensures the objectivity of research supervision and provides a structure that enables students to seek guidance on a wide range of academic and research-related issues. It offers opportunities for students to participate in research presentation meetings, with financial support for travel expenses, encouraging them to present their work and objectively review their own research approaches, thereby fostering the further advancement of their studies. Intensive courses are provided to enhance students' skills in academic writing and English presentation. In addition, to broaden their perspectives and deepen their knowledge, the program organizes Materials Engineering Seminars, inviting speakers from both within and outside the university. <Subprogram in Materials Science and Engineering> All students must present their research in English at the Materials Science and Engineering Seminar once a year. The presentation is evaluated by all faculty members in the subprogram to find whether the presentation demonstrates the level of expertise appropriate for a doctoral degree, whether it addresses social issues, whether the student has the expertise in the field of materials science and has the communication skills to discuss in English.

Opportunities for Peer Interaction	<Subprogram in Applied Physics> – We offer a required graduate seminar for first-year doctoral students. This seminar incorporates a mechanism into the curriculum that promotes exchange opportunities among students across grades and organizations. Students present their own research, listen to others' presentations, and engage in Q&A sessions. – We have created a system that continuously generates opportunities for peer learning through teaching assistantships (TAs) for undergraduate lectures and experiments. – Student gatherings held at the Faculty of Science provide opportunities for students to interact across disciplines. <Subprogram in Materials Science> The program integrates opportunities into the curriculum for students to participate in research presentation meetings beyond their own academic year. Through Q&A sessions and discussions at these events, students are encouraged to engage with peers from different cohorts, fostering interaction and collaboration across year levels. In addition, by implementing a Teaching Assistant (TA) and tutor system, as well as promoting student-led projects, the program creates a sustainable framework that continuously generates opportunities for peer learning. Furthermore, it provides occasions for interdisciplinary interaction by encouraging participation in student gatherings organized by academic institutes and research centers, enabling students to exchange ideas and build networks across diverse academic fields. <Subprogram in Materials Science and Engineering> A social meeting is held after the student seminar to encourage interaction among students. In addition, poster presentation opportunities are provided for master's students to encourgage their interaction with doctoral students.

Opportunities for Student–Faculty Interaction	<Subprogram in Applied Physics> – Student gatherings held at the Faculty of Science provide opportunities for students to interact across disciplines. – In the graduate seminar, students present and engage in Q&A sessions not only with their primary and secondary advisors but also in front of other faculty members, facilitating interaction with both their advisors and other faculty. – An annual graduate student-faculty discussion meeting is held to promote interaction between students and faculty. <Subprogram in Materials Science> The program provides opportunities for students to engage with faculty members from different areas of expertise through gatherings organized by academic institutes and research centers. All faculty members involved in the degree program participate in events such as the master's thesis presentation meeting, creating a setting where students can interact and exchange ideas not only with their own advisors but also with other faculty members. In addition, an annual meeting is held to promote open dialogue and strengthen communication between students and faculty. <Subprogram in Materials Science and Engineering> A social meeting is held after the student seminar to promote interaction between faculty and students.

Approaches to Assuring and Enhancing Educational Quality

<Subprogram in Applied Physics>

– By having all faculty members participate in the doctor's thesis presentation meeting, the program ensures that the quality of education is thoroughly reviewed. Any areas identified for improvement are then discussed by the program's steering committee, and necessary actions are taken to enhance the overall educational program.
– Questionnaires are conducted after lectures (specialized subjects, specialized foundation subjects, etc.) to inform verification and improvement.
– Syllabus checks are conducted annually, primarily by academic affairs committee members. Quality is ensured by prompting faculty to make revisions or improvements as necessary.

<Subprogram in Materials Science>

By having all faculty members participate in the doctor's thesis presentation meeting, the program ensures that the quality of education is thoroughly reviewed. Any areas identified for improvement are then discussed by the program's steering committee, and necessary actions are taken to enhance the overall educational program.

<Subprogram in Materials Science and Engineering>
By having all faculty members participate in the doctor's thesis presentation meeting, the program ensures that the quality of education is thoroughly reviewed. Any areas identified for improvement are then discussed by the program's steering committee, and necessary actions are taken to enhance the overall educational program.

Doctoral Program in Materials Innovation

Doctor of Philosophy in Engineering

Program Educational Objectives

The Doctoral Program in Materials Innovation has committed tie-ups with research institutes in the Tsukuba region to cultivate educators, researchers and highly specialized professionals who lead the innovation for building a better and advanced materials' society from a higher perspective that can see environmental and energy problems and other global scale issues using their basic knowledge in a wide range of natural sciences of different disciplines.

Graduate Profile	He or she should possess advanced abilities as to materials, lead the innovation in the future-oriented innovative energy materials, environmental materials chemistry and electronics, and create ideas for global scale social needs to be active as a leader in the international society by getting their English proficiency into full use.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Theoretical design ability: Ability to design materials based on quantum mechanics or thermodynamics	①If the ability to design materials based on quantum mechanics was gained ②If the ability to design materials based on thermodynamics was gained

	Competences	Evaluation perspectives
Knowledge and Skills	7. Analytical ability for materials functionalities: Ability to elucidate materials functionalities at the molecular and electron level using synchrotron radiation materials analysis, scanning probe microscopes and other analytical instruments	①If the ability to elucidate materials functionalities at the molecular and electron level using synchrotron radiation materials analysis, scanning probe microscopes and other analytical instruments was gained
	8. Materials creation ability: Ability to create novel materials or high-performance devices	①If the ability to create novel materials or high-performance devices was gained
	9. Fundamental engineering ability: Knowledge, academic abilities and research ethics appropriate to researchers or highly specialized professionals in the areas of engineering	①If the advanced specialized knowledge indispensable as a researcher in the areas of engineering sciences was gained ②If a wide range of specialized knowledge necessary for the applied development of research in the areas of engineering sciences was gained ③ If researcher ethics and engineer ethics were understood and adhered by
	10. English negotiation ability: Ability to use English for the active access to researchers in the world to communicate as to research	If one has deep interests in global research trends in the areas of engineering sciences and if the ability to negotiate in English with researchers in the world was gained
Guidelines for Assessing Learning Outcomes	The final examination (main thesis defense) involves an oral presentation on the research objectives, methods, results, and discussion within the doctoral dissertation (thesis). This presentation is evaluated on a five-point scale for knowledge creation ability, management ability, communication ability, and leadership ability. Furthermore, during the oral questioning following the presentation, the candidate's skill to provide appropriate responses regarding theoretical design ability, analytical ability for materials functionalities, materials creation ability, and fundamental engineering ability is assessed on a five-point scale. Furthermore, through the presentation and oral examination conducted in English, the candidate's internationality competence and English negotiation ability are confirmed to have been acquired.	

Evaluation Criteria for Degree Theses/ Dissertations	【Review board members】 Structure of thesis review board Set up with one chief reviewer and three or more sub-reviewers. 【Review method】 Prior to the receipt of a degree thesis, to determine the acceptance of the submission, the degree thesis is preliminarily reviewed. The thesis review board administers thesis review and the final exam or the confirmation of academic abilities. 【Review items】 1. The research tasks must be set up with ingenuity, and the selection of research methods must be appropriate. 2. The line of reasoning must be clearly developed in English from the objectives of research to the conclusions. 3. The preceding researches related to research tasks must be grasped and understood with appropriate appraisal and citation. 4. With adherence to research ethics, the obtained results and conclusions must be verifiable by third parties. 5. Academic significance must be internationally identifiable in research outcomes. 【Level standards required for the degree thesis】 All of the above evaluation items must be met, and before a dissertation review board is opened, one first-author dissertation must be available to be published or posted in an academic journal. The dissertation passes as a doctoral dissertation with the final exam included in the judgment.

Curriculum Policy

Realms as pillars of education and research: Organized in energy materials engineering, environmental materials engineering, and electronic materials engineering.
The curriculum seeks to develop human resources who can practice engineering application based on pure science by removing the conventional boundaries between science and engineering.

Curriculum Design Framework	– Seminars are organized to develop students' practical abilities with a variety of researchers invited as instructors from diverse scenes ranging from pure research to manufacturing and mounting worksites in a tie-up with AIST, NIMS and KEK as well as overseas academic institutes attaining outstanding successes and from industry circles. The curriculum also seeks to cultivate global human resources who are capable of challenging various issues and overcoming them.

Teaching and Learning Methods	– With Materials Innovation Research IIIA, IIIB, IVA, IVB, VA and VB (Required subject: 3 credits each), students actively deepen the research of their respective area of expertise and focus their energy on accomplishing the world's top research results by seeking to improve the research ability for completing the Doctoral Program. – Research Proposal (Required subject in the Doctoral Program's first year: 1 credit), which focuses on the setup of students' research themes, is learned in the first academic year of the Doctoral Program. In this subject, each student plans the background, significance, and expected results of research other than own research theme. Students present the proposed research plan in a seminar format in English and hold a discussion to develop the ability to draw up a research plan. The faculty members and all students in the major attend the proposal presentations, have discussions and appraise students' presentations. – In Open Seminar IIIA, IIIB, IVA, IVB, VA and VB (Required subject: 1 credit each), students participate in the lectures of external researchers active at the world's forefront and seminars with student research presentations and to submit a report as to what they learn. Students also participate in discussion in English actively to gain international communication ability in English. – With Joint Seminar IIA, IIIB, IVA, IVB, VA and VB (Elective subject: 1 credit each), each student participates in research activities of other laboratories or those overseas over one semester to seek to deepen the research level in their own research theme and extend their interdisciplinary points of view. Students also experience diverse research environments by going to the seminars of other laboratories of areas different from the one that the student belongs.

Admission Policy

Desired Student Profile	We seek candidates who possess outstanding fundamental abilities and intellectual capabilities and are eager to research with an ambition to become an outstanding researcher in the future. The Program, which is all taught only in English, demands candidates to have sufficient English proficiency.
Student Selection Process	Potential students are solicited worldwide and selected by an online interview as to the research outcomes that the candidate has earned so far and the post-enrollment research plan. Communication ability in English is evaluated.

Learning Support Framework

Academic Support	We provide support for travel expenses and registration fees for presentations at international conferences and symposia in the field of materials science. Additionally, we offer guidance on presentations (oral and poster) for such events, including practice for Q&A sessions. Additionally, regarding academic paper writing, we provide guidance on writing techniques and offer opportunities to experience the peer review process, thereby supporting students in becoming independent international researchers.
Opportunities for Peer Interaction	Research exchange at the Open Seminar.
Opportunities for Student–Faculty Interaction	Experience research in different fields through joint research with other laboratories.

Approaches to Assuring and Enhancing Educational Quality

Students' learning outcomes are evaluated in mid-term and final assessments and thesis examinations to verify the validity of the curriculum and the appropriateness of instruction.

Master's Program in Policy and Planning Sciences

Master of Science in Policy and Planning Sciences

Program Educational Objectives

The “Master's Program in Policy and Planning Sciences” cultivates international specialists “problem-solving type human resources (mode 1 type human resources) in engineering for future visions” who can do advocacy and contribute to social requirements from a technical point of view.

Graduate Profile	He or she should have the “problem-solving ability” founded on social knowledge, logical thinking ability, and various kinds of engineering skills as a “problem-solving type human resource (mode 1 type human resource) in engineering for future visions” and should be capable of being active as an IT engineer, production planning/marketing engineer, government-funded bank, financial analyst, consultant, think tank researcher, urban planning or community development consultant, managerial position at an organization, financial planner, construction or real estate project/development planner, town architect, public employee in national or municipal planning departments, etc.

Diploma Policy

The degree of Master of Science in Policy and Planning Sciences is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of policy and planning sciences	①If research tasks in the areas of policy and planning sciences are appropriately set up ②If the basic techniques for conducting research in the areas of policy and planning sciences were gained ③If research in the areas of policy and planning sciences is carried out with the accomplishment of significant results

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge: Advanced specialized knowledge and command of the areas of policy and planning sciences	①Understanding of social phenomena (Find): If social phenomena are deductively understood based on the advanced knowledge about basic theories and rules of thumb in the areas of policy and planning sciences ②Data analysis (Analyze): If social phenomena are inductively understood based on data analysis ③Institution design (Plan): If institutions for social reforms are designed based on the understanding of social phenomena ④Experiment and advocacy (Do): If concrete advocacy or social experiment is done based on a designed institution ⑤Evaluation and measurement (See): If results of social experiment or advocacies are critically measured and evaluated in one's own right to deepen the understanding of social phenomena
	8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of policy and planning sciences	①If researcher ethics and engineer ethics were understood and adhered by ②If human research ethics as well as formalities and/or procedures necessary for research were understood
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes objectively confirms and assesses the acquisition status of competences based on the degree conferral policy at each stage, according to the achievement evaluation sheet. It is conducted four times in total each semester. The evaluation sheet is designed to help students evaluate themselves if their learning has maintained balance in gaining the abilities of “understanding of social phenomena” , “data analysis” , “institution design” , “experiment and advocacy” and “measurement and evaluation” and the knowledge and skills (competences) of the areas of “assets/resources design” , “organizational/ behavioral design” and “spatial/environmental design” . This evaluation sheet is every time completed with achievement checks by an interview between the supervisory faculty member and the student. Particularly in the fourth evaluation, which is made after the mid-term presentation, the evaluation includes checks as to whether the research reflects the past advice of AG faculty members, the student exchanged opinions with AG faculty members in the question-and-answer session at the mid-term presentation, and the research goes well on the whole toward the completion of the master’s thesis. – Basic Master's Seminar in Policy and Planning Sciences, Special Master's Seminar in Policy and Planning Sciences, and Special Master's Research Work in Policy and Planning Sciences are examined and evaluated at the three stages of the research plan presentation in the first year, the mid-term presentation and the final examination board in the second year.	

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation items are proven to be met. <Criteria for degree thesis review> 1. Significance of research theme: If the problems concerning social phenomena identified and argued in the thesis for their solutions are found as academically significant or significant enough to lead to social contributions 2. Understanding of preceding researches: If existing theories and researches associated with one's research theme are accurately understood and objectively appraised. If then, the research deeply debates issues, including as to the theoretical contributions that the research could add to the literatures or as to the practical significance that the research could attain to the society, economy, urban environments, business organizations and the workers there. 3. Understanding and appropriateness of research methods: If the methods (demonstration, experiment, simulation, investigation, survey and other design and data analysis, etc.) used to pursue the research theme are deeply understood and the skills to use them well in order to pursue the research theme were sufficiently gained 4. Appropriateness of presentation and interpretation of research results: If the skill to academically present research results and the thinking ability to interpret them deductively or inductively are possessed 5. Research overall: If the research is capable of doing advocacy that could be contributable to the society or if the research successfully has developed a significant debate toward future research trends as results of an overview of steps 1 to 4 above and the objective evaluation of strengths and weaknesses of the research 6. Format of thesis: If the appropriate level as an academic paper is reached in terms of the appropriateness of sentence expressions, the presentation and citation of graphics and literatures and the creation of literature list in the thesis <Criteria for final exam> 1. 【Research ability】 If the basic knowledge and ability to set research tasks and carry out a research plan in the areas of policy and planning sciences were gained 2. 【Specialized knowledge】 If the advanced specialized knowledge and command of the areas of policy and planning sciences were gained 3. 【Ethical view】 If the ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of policy and planning sciences were gained <Level standards required for the degree thesis, review board members, review method and review items, etc.> A master's thesis review board must be organized with one chief reviewer and two or more sub-reviewers who are applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School. The chief reviewer opens a master's thesis review board, and the board reviews the thesis in accordance with the criteria for degree thesis review to judge the acceptance of the thesis. The thesis passes if approved to be on a master's thesis level in all of the above evaluation items 1 to 6 with the final (oral) exam included in the judgment.

Curriculum Policy

To develop the “problem-solving ability” founded on social knowledge, logical thinking ability and various kinds of engineering skills, the curriculum is organized on the three pillars of ① assets/resources design (finance/optimization), ② spatial/environmental design (urban planning) and ③ organizational/behavioral design (behavioral science), so that students gain the specialized knowledge and research abilities related to these pillars as well as a wide range of basic knowledge and ethical view in the areas of engineering and that the Program cultivates such human resources who can identify and solve problems from a wide perspective over multiple areas in science and technology.

Curriculum Design Framework	The curriculum is designed to help students gain the “problem-solving ability” for social problems. To cultivate the fundamental abilities in policy and planning sciences, the Foundation Subjects for Major in Degree Programs' Common Courses are organized as core subjects. Moreover, to develop the specialized knowledge and abilities ranging from the understanding of phenomena to model build and data analysis, the specialized subjects in Degree Programs' Common Courses are organized for the three areas of ① assets/resources design (finance/optimization), ② spatial/environmental design (urban planning) and ③ organizational/behavioral design (behavioral science) and the shared area involving each of these areas. Furthermore, Foundation Subjects for Major and Major Subjects are organized in Program subjects, and while using the “Division of Policy and Planning Sciences Commons” , which is physical and virtual resources shared by students and faculty members, students have both the fundamental and specialized abilities established in them by creating a master's thesis under a system of research that supervises students in a multifaceted way through a researcher group such as research units. Note that the Course in Strategic Frontiers for Regional Revitalization for working individuals, which is opened in the Program and positions “Introduction to Strategic Frontiers for Regional Revitalization” as required subjects, places a special emphasis on the cultivation of human resources who will be engaged in community development in the future. Students gain (generic knowledge and ability) through Graduate General Education Courses, Inter-disciplinary Foundation Courses, and specialized foundation subjects. Particularly, the following knowledge and abilities are expected to be gained through core subjects, and Facilitation Training subjects: – Students gain Competence of knowledge application through “Mathematics for Policy and Planning Sciences” , “Microeconomics” , “Social Simulation” , “Statistical Analysis” , “Spatial Information Science” and other core subjects and “Internship in Policy and Planning Sciences” .

Curriculum Design Framework	– Students gain Management competence, Communication competence and Teamwork competence through “Workshop in Policy and Planning Sciences I and II” in which active learning is done as group work, “Internship in Policy and Planning Sciences”, “Facilitation Training Program in Policy and Planning Sciences” subjects, and “Active Learning in Strategic Frontiers for Regional Revitalization” subjects. – Students gain Competence in Internationality through core subjects, which use plain teaching methods on the basis of international research circumstances, and “Workshop in Policy and Planning Sciences I and II”, “Internship in Policy and Planning Sciences”, “Facilitation Training Program in Policy and Planning Sciences” subjects, and “Active Learning in Strategic Frontiers for Regional Revitalization” subjects, in which students learn with the active learning method as group work with international students. (Specialized knowledge and abilities) are gained as follows: – Students gain the basic knowledge in research through Graduate General Education Courses, Inter-disciplinary Foundation Courses, and core subjects and then gain research ability through “Basic Master's Seminar in Policy and Planning Sciences I and II”, “Special Master's Seminar in Policy and Planning Sciences I and II” and “Research in Policy and Planning Sciences I and II” . – Students learn with the following subjects to develop the abilities to acquire the specialized knowledge necessary for the “problem-solving ability”, which is required for the entire areas of policy and planning sciences: “Game Theory”, “Urban and Environmental Planning”, etc. to develop the ability to understand social phenomena, “Mathematics for Policy and Planning Sciences”, “Statistical Analysis”, etc. to develop the ability to perform data analysis, “Microeconomics”, “Institutions, Policy Decision”, etc. to develop the ability to design institutions, “Social Simulation”, “Spatial Information Science”, etc. to develop the ability to do experiment and advocacy, and “Corporate Valuation”, etc. to develop the ability to make evaluation and measurement. – Through “Internship in Policy and Planning Sciences” and “Facilitation Training Program in Policy and Planning Sciences” subjects, students gain the particular ethical view that is required for functioning well in the society, and through “Basic Master's Seminar in Policy and Planning Sciences I and II”, “Special Master's Seminar in Policy and Planning Sciences I and II” and “Research in Policy and Planning Sciences I and II”, students gain the ethical view related to research.

Teaching and Learning Methods	– Students take specialized foundation subjects in Degree Programs' Common Courses in mainly the spring semester of the first year by reference to the following models: Curriculum model ① (Business) consultant or managerial position at an organization, financial planner; Curriculum model ② System engineer at an IT consulting company; Curriculum model ③ Think tank researcher. Being positioned as part of these subjects, Graduate General Education Courses and Inter-disciplinary Foundation Courses are encouraged to be taken. – By reference to the three types of curriculum models, students take in mainly the fall semester of the first year from the Major Subjects in Degree Programs' Common Courses organized as the three areas of ① assets/resources design (finance/optimization), ② spatial/environmental design (urban planning) and ③ organizational/behavioral design (behavioral science) and the shared area involving each of these areas. – Concurrently with the above, master's theses are supervised in a multifaceted way by supervisory faculty members and researcher groups such as an advisory group (AG) and research unit, and under this system of supervision, students proceed with conducting research on their respective research tasks and take 12 credits of specialized subjects in Program subjects concerning the writing of theses.

Admission Policy

Desired Student Profile	We seek candidates who possess engineering fundamental abilities (mathematical or logical thinking abilities) and the basic knowledge about one of the three areas of assets/resources design (finance/optimization), spatial/environmental design (urban planning) and organizational/behavioral design (behavioral science).
Student Selection Process	– To accept outstanding and diverse human resources inside and outside Tsukuba, candidates are solicited through multiple entrance exam means including recommendation entrance exam, general entrance exam and special entrance exam for adults at different timings and different numbers of students admitted. – Irrespective of the type of entrance exam, an oral exam is mandatorily required. – To prove foreign language proficiency, candidates are required to submit the score sheet of English language test (e.g. TOEIC, TOEFL). – In the recommendation entrance exam, the potential students to be selected out must excel academically, especially in the abilities necessary for the research in the areas of policy and planning sciences. – In the general entrance exam, the potential students to be selected out must possess certain fundamental abilities and research abilities. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to fundamental abilities and research abilities.

Learning Support Framework

Academic Support	Achievements are evaluated using an achievement evaluation sheet. Students use the sheet to document their progress in acquiring the necessary competences, which they confirm with their supervisors. "Special Master's Seminar in Policy and Planning Sciences III", as well as "Research work in Policy and Planning Sciences I and II" encourage students to manage their research progress and improve their presentation skills.
Opportunities for Peer Interaction	Opportunities for student interaction are promoted through “Facilitation Training Program in Policy and Planning Sciences” and “Workshop in Policy and Planning Sciences” , which implements active learning through group work, and interdisciplinary research activities utilizing research units.
Opportunities for Student–Faculty Interaction	Opportunities for interaction between students and faculty members are promoted through the seminars involving multiple faculty members using sub-advisors and research units, as well as supporting a seminar for multiple faculty members and graduate students as part of degree programs. Meetings for graduate students and faculty members holds every year as opportunities for interaction.

Approaches to Assuring and Enhancing Educational Quality

- The degree program leader and the curriculum committee analyze and review the assessment results of learning outcomes, striving for the continuous improvement of educational quality.
- The academic management committee continuously reviews and enhances educational activities, ensures the quality of education through initiatives such as workshops, and strengthens the system for achieving the objectives of the degree program.
- External evaluations—such as directly gathering opinions from stakeholders and conducting questionnaire surveys—are conducted to confirm whether the education being offered aligns with the qualities and competences expected of graduates of the Policy and Planning Sciences degree program.

Master's Program in Service Engineering

Master of Engineering in Service Science

Program Educational Objectives

The “Program in Service Engineering” cultivates “pioneers for the future in the areas of service (mode 2 type human resources)” as highly specialized professionals who possess both advanced specialized knowledge and well-rounded human nature.

Graduate Profile	The Program cultivates “pioneers for the future in the areas of service (mode 2 type human resources)” , that is, human resources who can challenge present and future social problems, then create and practice new methods and verify results scientifically in the areas of service. He or she should be capable of being active as a service development engineer or person in charge of business planning in a company, governmental person in charge of community service development, entrepreneur, etc.

Diploma Policy

The degree of Master of Engineering in Service Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of service engineering	①Scientific analysis ability: If the skills to scientifically analyze circumstances and give them engineering solutions were gained ②Ability to challenge problems in reality: If the positive attitude, social skills and cooperativeness to challenge problems in reality were gained
	7. Specialized knowledge: Advanced specialized knowledge and command of the areas of service engineering	Ability to apply skills: If the know-how about how to use one's skills well in diverse service fields was gained
	8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of service engineering	①If researcher ethics and engineer ethics were understood and adhered by ②If human research ethics as well as formalities and/or procedures necessary for research were understood

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes objectively confirms and assesses the acquisition status of competences based on the degree conferral policy at each stage, according to the achievement evaluation sheet. It is conducted four times in total each semester. The achievement evaluation sheet provides a visual confirmation of the acquired competences. The achievement evaluation sheet is every time completed with achievement checks by an interview between the supervisory faculty member and the student. The first evaluation sees the basic leaning of the nine required subjects, the second evaluation sees how the student gains the knowledge and skills (competences) covered in Major Subjects, and the progress of his/her master's thesis. In the third evaluation, which is made after the mid-term presentation, the evaluation includes checks as to whether the research reflects the past advice of AG faculty members, the student exchanged opinions with AG faculty members in the question-and-answer session at the mid-term presentation, and the research goes well on the whole toward the completion of the master's thesis. The fourth evaluation entaisl an evaluation of the master's thesis content and competences acquired. – Service learning: For private/public industry-academia collaboration research, students are examined and evaluated at the three stages of the research plan presentation at the end of the fall semester of the first year, the mid-term presentation at the end of the spring semester of the second year, and the final examination board at the end of the fall semester of the second year.
Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation items are proven to be met. <Criteria for degree thesis review> 1. Significance of research theme: If the theme is found to be significant to challenge present and future problems in reality in the areas of service engineering and to create and practice new service methods 2. Understanding of preceding researches: If existing theories and researches associated with one's research theme are accurately understood and appraised. If then, the issue as to how the research could contribute to the literatures or could attain practical significance in the areas of service engineering is deeply debated. 3. Understanding and appropriateness of research methods: If the methods (demonstration, experiment, simulation, investigation, survey and other design and data analysis, etc.) used to pursue the research theme are deeply understood and the skills to use them well in order to pursue the research theme were sufficiently gained 4. Appropriateness of presentation and interpretation of research results: If the skill to academically present research results and the thinking ability to interpret them deductively or inductively are possessed

Evaluation Criteria for Degree Theses/ Dissertations	5. Research overall: If the research is capable of doing advocacy that could be contributable to the areas of service engineering or if the research successfully has developed a significant debate toward future research trends as results of an overview of steps 1 to 4 above and the objective evaluation of strengths and weaknesses of the research 6. Format of thesis: If the appropriate level as an academic paper is reached in terms of the appropriateness of sentence expressions, the presentation and citation of graphics and literatures and the creation of literature list in the thesis <Criteria for final exam> 1. 【Research ability】If the basic knowledge and ability to set research tasks and carry out a research plan in the areas of service engineering were gained 2. 【Specialized knowledge】If the advanced specialized knowledge and command of the areas of service engineering were gained 3. 【Ethical view】If the ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of service engineering were gained <Level standards required for the degree thesis, review board members, review method and review items, etc.> A master's thesis review board must be organized with one chief reviewer and two or more sub-reviewers who are applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School. The chief reviewer opens a master's thesis review board, and the board reviews the thesis in accordance with the criteria for degree thesis review to judge the acceptance of the thesis. The thesis passes if approved to be on a master's thesis level in all of the above evaluation items 1 to 6 with the final (oral) exam included in the judgment.

Curriculum Policy

The curriculum is organized to provide students with specialized knowledge and research ability as to service engineering (Science of Effectiveness (quantitative analysis skill to identify services required by customers and the society), Science of Efficiency (skill to improve efficiency for an organization to secure a reasonable profit), Art of Integration (integrated skill to overcome the trade-offs arising between the said effectiveness and efficiency)) as well as a wide range of basic knowledge and ethical view in the areas of engineering, so that the Program cultivates highly specialized professionals who can identify and solve problems from a wide perspective extending over multiple areas in science and technology.
The Program in Service Engineering is designed to develop human resources who can challenge present and future social problems, then create and practice new methods and verify results scientifically in the areas of service. To attain this purpose, the Program vigorously drives forward education and research in cooperation with private/public industry and academia such as by actively having faculty members who are engaged at work in companies or national/municipal organizations. Thus, the Program builds itself up as a trinity characterized by the three aspects: the curriculum contributes to the communities as well, research findings are accumulated, and good students result under these environments.

Curriculum Design Framework	Major Subjects and Foundation Subjects for Major are organized in Degree Programs' Common Courses and in Program subjects. Students gain (generic knowledge and ability) through Graduate General Education Courses, Inter-disciplinary Foundation Courses, and Foundation Subjects for Major. Particularly, the following knowledge and abilities are expected to be gained through Program subjects: Through “Consumer Psychology”, “Regional Data Analysis”, “Big Data Analytics” and such other required subjects involving group work (matrix type course work, 9 subjects/18 credits) and “Facilitation Training Program in Service Engineering”, “Internship (Master's Program in Service Engineering)”, etc., students gain the Competence of knowledge application, Management competence, Communication competence, Teamwork competence, and Competence in Internationality. (Specialized knowledge and abilities) are gained as follows: – To gain the basic skills to scientifically analyze circumstances and give them engineering solutions, students learn through matrix type course work in addition to Graduate General Education Courses and Inter-disciplinary Foundation Courses. The research ability is gained through “Special Seminar in Service Engineering I and II” and “Special Research Work in Service Engineering I and II” (Service learning = Private/public industry-academia collaboration research). – With elective subjects, students gain specialized knowledge as to the methodology and know-how about how to use the basic skills well. – Students gain ethical view through “Facilitation Training Program in Service Engineering”, “Internship (Master's Program in Service Engineering)” and service learning = Private/public industry-academia collaboration research.

Teaching and Learning Methods	– Around the spring semester of the first year, students take nine required subjects (2 credits × 9 subjects) that cover the three services, which are real service (human to human), community service (organization to community) and virtual service (organization to humans through IT), and the three skills, which are Science of Effectiveness (quantitative analysis skill to identify services required by customers and the society), Science of Efficiency (skill to improve efficiency for an organization to secure a reasonable profit), and Art of Integration (integrated skill to overcome the trade-offs arising between the said effectiveness and efficiency). – After the fall semester of the first year, students take subjects covering the specialized knowledge about each of the three services and those covering the specialized knowledge about each of the four skills which additionally include hypothetical verification and service progression (skill to implement solutions and verify results scientifically). – After fall semester C of the first year, during which the above learning has almost completed, students get predominantly involved in practical research activities through private/public industry-academia collaboration research and take 8 credits of Major Subjects related to the writing of a thesis.

Admission Policy

Desired Student Profile	We seek candidates who possess engineering fundamental abilities (mathematical or logical thinking abilities) and the basic knowledge about one of the three areas of assets/resources design (finance/optimization), spatial/environmental design (urban planning) and organizational/behavioral design (behavioral science).
Student Selection Process	– To accept outstanding and diverse human resources inside and outside Tsukuba, candidates are solicited through multiple entrance exam means including recommendation entrance exam, general entrance exam and special entrance exam for adults at different timings and different numbers of students admitted. – Irrespective of the type of entrance exam, an oral exam is mandatorily required. – To prove foreign language proficiency, candidates are required to submit the score sheet of English language test (e.g. TOEIC, TOEFL). – In the recommendation entrance exam, the potential students to be selected out must excel academically, especially in the abilities necessary for the research in the areas of service engineering. – In the general entrance exam, the potential students to be selected out must possess certain fundamental abilities and research abilities. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to fundamental abilities and research abilities.

Learning Support Framework

Academic Support	Achievements are evaluated using an achievement evaluation sheet. Students use the sheet to document their progress in acquiring the necessary competences, which they confirm with their supervisors. "Special Seminar in Service Engineering II" , as well as "Special Research Work in Service Engineering I and II" encourage students to manage their research progress and improve their presentation skills.
Opportunities for Peer Interaction	Opportunities for student interaction are promoted through "Consumer Psychology" , "Regional Data Analysis" , "Big Data Analytics" and such other required subjects, which implements active learning through group work, and interdisciplinary research activities utilizing research units.
Opportunities for Student–Faculty Interaction	Opportunities for interaction between students and faculty members are promoted through the seminars involving multiple faculty members using sub-advisors and research units, as well as supporting a seminar for multiple faculty members and graduate students as part of degree programs. Meetings for graduate students and faculty members holds every year as opportunities for interaction.

Approaches to Assuring and Enhancing Educational Quality

- The degree program leader and the curriculum committee analyze and review the assessment results of learning outcomes, striving for the continuous improvement of educational quality.
- The academic management committee continuously reviews and enhances educational activities, ensures the quality of education through initiatives such as workshops, and strengthens the system for achieving the objectives of the degree program.
- External evaluations— such as direct feedback from participants at the Service Engineering Symposium and questionnaire surveys regarding students' research presentations and educational content—are conducted to confirm whether the education being offered aligns with the qualities and competences expected of graduates of the Service Engineering degree program.

Master's Program in Risk and Resilience Engineering

Master of Engineering

Program Educational Objectives

In these days of destabilized social conditions, one of the most important issues is to reach for secure and safe lands, districts, economy, and information society that have both “strength” and “flexibility” based on appropriate risk management, that is, a resilient system of society. The Master's Program in Risk and Resilience Engineering seeks to cultivate highly specialized professionals who possess the “ability to be flexible to unforeseen and changing circumstances from an engineering point of view, keep providing the required functionalities, and get them recovered” , which is in other words, the advanced skills that can put the results of risks analyzed and evaluated by engineering methods into use to reach for a resilient society and who can pass along the outcomes of education and research to the society with a view focused on actual social problems.

Graduate Profile	He or she should possess, based on the fundamental engineering ability, the foundations and associated information processing techniques for risk and resilience analysis and evaluation, and by adapting them from a wide point of view to the real world's problems, which are the subject of risk and resilience engineering, he or she should be able to come up with and develop concrete methods for identifying a problem and providing a solution using engineering means while fulfilling his or her given role shares in a research team or research project by bringing out sufficient communication ability, and if required, taking a leadership position.

Diploma Policy

The degree of Master of Engineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Fundamental engineering ability: Basic knowledge and academic abilities appropriate to highly specialized professionals in the areas of engineering	①If the basic knowledge in the areas of risk and resilience engineering was gained ②If the academic abilities as highly specialized professionals in the areas of risk and resilience engineering were gained
	7. Knowledge of foundations and associated techniques: Knowledge of the foundations for risk and resilience analysis and evaluation, and associated information processing techniques	①If the foundations for analyzing risks potential in complex phenomena and evaluating them from a resilience viewpoint were gained ②If the information processing techniques for analyzing risks potential in complex phenomena and evaluating them from a resilience viewpoint were gained

	Competences	Evaluation perspectives
Knowledge and Skills	8. Knowledge about problems in reality: Knowledge about problems in reality that involve risk and resilience engineering	If the knowledge about the problems in reality, to which risk and resilience engineering is applied, was gained
	9. Ability to have the big picture in mind from a wide perspective: Ability to interpret, from a wide perspective, the issues to which risk and resilience engineering is applied	If a wide perspective for interpreting the issues, to which risk and resilience engineering is applied, was gained
	10. Ability to identify and solve problems: Ability to understand the process from identifying to solving a risk-resilience problem using engineering means and come up with and develop the concrete means to provide a solution	①If problems are led to concrete solutions with the understanding of the application of specialized skill—— Solution process starting from problem identification ②If researcher ethics and engineer ethics were well understood and adhered by
	11. Global communication ability: Ability to fulfill one's given role shares, bring out sufficient communication ability, and if required, take a leadership position in a research team or research project	①If one's given role shares are fulfilled in a research team or research project ②If sufficient communication ability is brought out, and if required, a leadership position is taken in a research team or research project

Guidelines for Assessing Learning Outcomes	The quality of education is assured with the following system of achievement evaluation. Achievements are evaluated for the following six achievement evaluation items. ①Fundamentals of engineering: Basic knowledge and academic skills of advanced professionals in engineering were gained ②Knowledge of basic theories and related skills: Knowledge of fundamental theories for risk and resilience analysis and assessment, and knowledge of information processing technologies related to risk and resilience analysis and assessment were gained ③Knowledge of issues in the real world: Knowledge of real-world issues covered by risk and resilience engineering was gained ④Broad perspective overlooking circumstance: Ability to see the subject of risk and resilience engineering from a broad perspective was gained ⑤Abilities of problem setting and solving: Ability to understand the process from setting up problems to solving them by engineering means, and to devise and develop specific solutions for problems related to risk and resilience were gained ⑥Global communication ability: Ability to fulfill assigned roles in a research team or research project, demonstrate adequate communication skills, and take on leadership roles as needed was gained Achievements are evaluated by the achievement evaluation board, which is administered with an interview between each student and three or more faculty members twice every academic year. Achievements are evaluated by the achievement evaluation board, which is administered with an interview between each student and three or more faculty members twice every academic year. The feedback on the evaluation results are given to students for the use of improving subsequent learning. The evaluation is conducted objectively using an Achievement Evaluation Form (rubric) to determine whether the student has reached a level appropriate for the Master's degree in Engineering in all evaluation categories.

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation items are proven to be met. Note that the review of the research outcomes of specific tasks (the “specific task research report”) can take the place of the review of master's thesis. <Criteria for degree thesis review> 1. The thesis must be the results of the research in which the diploma applicant took the initiative in accordance with research ethics. 2. The research must contain novelty or usefulness. 3. The thesis must be appropriately constructed and the content must be correct. (1) The theme of the thesis must be appropriate. (2) The backgrounds and purposes of research must be clear. (3) The methods of research must accord with the purposes. (4) Results must be correctly drawn. (5) Discussion must be argued based on results. (6) The conclusion must be clear. (7) Citations must be appropriate. <Criteria for specific task research report review> 1. The report must be the results of the research in which the diploma applicant took the initiative in accordance with research ethics. 2. The research must contain novelty or usefulness. 3. The report must be appropriately constructed and the content must be correct. (1) The theme of the report must be appropriate. (2) The backgrounds and purposes of research must be clear. (3) The methods of research must accord with the purposes. (4) Results must be correctly drawn. (5) Discussion must be argued based on results. (6) The conclusion must be clear. (7) Citations must be appropriate. <Criteria for final exam> The evaluation is based on how the question-and-answer session goes for the explanation of the degree thesis and related matters and the results of achievement evaluation. <Level standards required for the degree thesis, review board members, review method and review items, etc.> The evaluation of degree thesis requires the approval of a master's thesis review board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer and two or more sub-reviewers must be faculty members of Degree Programs in Systems and Information Engineering. Opening a master's thesis review board, the chief reviewer evaluates the thesis in accordance with the criteria for degree thesis review and judges the acceptance of the thesis after having obtained approval of the board. The thesis passes if approved to be on a master's thesis level in all of the above evaluation items 1 to 3 with the final exam included in the judgment.

Curriculum Policy

The curriculum is organized to attain the Diploma Policy requirements listed above and cultivate human resources who possess the specialized knowledge and research ability for risk and resilience engineering (risk and resilience engineering infrastructure, information system security, urban disaster prevention and social resilience, environment and energy systems), a wide range of basic knowledge and ethical view in the areas of engineering, and can be effective immediately for the comprehensive analysis of risks latent in complex social phenomena from a wide perspective that extends over multiple areas in science and technology.

Curriculum Design Framework	In the Master's Program, Degree Programs' Common Courses are organized with Major Subjects and Foundation Subjects for Major, and Program subjects, with Major Subjects and Foundation Subjects for Major. With Program subjects, students learn with lectures and seminars to cultivate presentation and communication abilities and a wide perspective and also take the project subjects, which help students understand the process from identifying to solving problems using engineering means and develop means to provide a solution. Degree Programs' Common Courses, students learn the foundations and information processing techniques of each of the areas and take the subjects for deepening the knowledge of actual problems involving risk studies. The Program subjects help students deepen the understanding of other areas than that of his or her own area of expertise. Students attain the requirements enumerated in Diploma Policy by incorporating the learning in these subjects and the research of each student's area of expertise into a degree thesis or specific task research report.
Teaching and Learning Methods	The requirements enumerated in Diploma Policy are attained as follows. 1. “Fundamental engineering ability”, which is covered in almost all of the subjects, is gained through the subjects provided in the Degree Program. In addition, a wider range of learning is possible with Inter-disciplinary Foundation Courses. 2. “Foundations and associated techniques”, which is covered in almost all of the subjects, is gained though the subjects provided in the Degree Program. Particularly through Special Master's Research Work, students can learn more deeply the foundations and information processing techniques for analyzing risks potential in complex phenomena and evaluating them from a resilience viewpoint. 3. “Problems in reality” which is covered in almost all of the subjects, is learned particularly through specialized subjects. 4. The abilities for “wide perspective”, which are covered in almost all of the subjects, are gained particularly through the subjects taught by faculty members in the Cooperative Graduate School System with companies, research institutes, etc. In addition, students can learn more deeply through the internship subjects taught by those faculty members. 5. The abilities to “identify and solve problems” are gained through Special Master's Research Work, in which each student carries out their respective research under supervisory faculty members, and the internship subjects taught by faculty members in the Cooperative Graduate School System with companies, research institutes, etc.

Teaching and Learning Methods	6. The abilities for “communication” are gained through Special Master's Seminar, Special Master's Research Work and Project Research. In addition, students can learn more deeply through risk and resilience engineering group PBL seminars, etc., in which they are divided into groups and assigned to work on a theme. The achievement progress of the requirements is periodically checked in accordance with the achievement evaluation scheme described below, and along the degree of achievement, the student receives appropriate advice from the faculty member, who is the achievement evaluation board member responsible for the student.

Admission Policy

Desired Student Profile	We seek candidates who are interested in understanding a wide range of risks and their countermeasures and want to meet the challenge of risk and resilience in elucidating and evaluating problems in reality using their cross-disciplinary ability to have the big picture in mind from an interdisciplinary perspective. While the knowledge in a specific area is not necessarily required to learn in the Master's Program in Risk and Resilience Engineering, we welcome those who have interests in the mathematics and information processing skills, which serve as the foundation, and on the other side, have the desire to improve themselves in the communication and presentation abilities to be active in the actual world as well as the motivation in passing along their outcomes to the society through industry-academia collaboration, social collaboration, education and research outcomes, etc.
Student Selection Process	To select out enrollments, diverse candidates are sought through the recommendation entrance exam, general entrance exam, special entrance exam for adults or other enrollment selection methods. The opportunity of entrance exam is offered multiple times in the same year with the split of the number of persons admitted. For the selection of enrollment, candidates are required to take an oral exam and submit the official transcript meeting the application eligibility in correspondence with the characteristics of the area. To prove foreign language proficiency, candidates are required to submit the score sheet of English language test (e.g. TOEIC, TOEFL). – In the recommendation entrance exam, the candidates must remarkably excel academically and possess the sufficient knowledge and research abilities in the areas of risk and resilience engineering. – In the general entrance exam, the potential students to be selected out must possess certain fundamental abilities and research abilities. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to fundamental abilities and research abilities.

Learning Support Framework

Academic Support	(1) Seminar in Risk and Resilience Engineering I and II In these exercises, students meet weekly, with designated students delivering research presentations or literature reviews, followed by Q&A to deepen learning. Discussions proceed from interdisciplinary perspectives that transcend individual specializations, cultivating the broad outlook required in the field of risk and resilience and putting into practice instruction that emphasizes real-world relevance. (2) System for Enrolling in a Broad Range of Common Subjects across the Degree Program Groups The Risk and Resilience Engineering Degree Program has established a system that enables students to systematically take diverse common-subject courses offered across the degree program groups. Specifically, students may choose courses—according to their interests—related to Social Engineering, Service Engineering, Risk and Resilience Engineering, Computer Science and Engineering, Intelligent Systems, Structural and Energy Engineering, and Empowerment Informatics. Through this interdisciplinary curriculum, students build study plans aligned with their interests while cultivating a broad perspective and cross-disciplinary problem-solving skills.
Opportunities for Peer Interaction	Group Project Based Learning in Risk and Resilience Engineering In the required first-year course of the Master's Program, “Group Project Based Learning in Risk and Resilience Engineering”, groups of three to four students from different fields are formed to pursue project-based learning (PBL) on problems they define themselves. Through meetings and discussions, students engage with peers from diverse backgrounds, share specialized knowledge and perspectives, and generate new ideas and solutions. Interim, final, and poster sessions also involve other groups and upper-year students, enabling wide-ranging exchanges of views through Q&A. Through these activities, students are expected to strengthen their collaborative skills in small interdisciplinary research teams as well as their interdisciplinary thinking.

Opportunities for Student–Faculty Interaction	(1) Seminar in Risk and Resilience Engineering I and II In these exercises, students prepare their presentation materials under the supervision of their academic advisor before presenting. Multiple faculty members—not necessarily from the same field—then attend to provide evaluations and advice. This process introduces multifaceted perspectives that are not confined to a single discipline and enables diverse viewpoints to be incorporated into the research, ultimately leading to further refinement of the work. (2) Risk Engineering Research Meetings (RERM) The Degree Program has continuously held the Risk Engineering Research Meetings since 2002, originating in the former Department of Risk Engineering, and as of 2025 has hosted more than 230 sessions. At each meeting, distinguished and up-and-coming researchers and practitioners are invited, providing students with opportunities to encounter the latest research trends and societal issues and to deepen their understanding and discussion of risk assessment in an increasingly complex society. (3) Group Project Based Learning in Risk and Resilience Engineering In this course, each group is assigned a faculty advisor—distinct from the students' academic supervisor—who provides guidance and advice on topic selection and research methods. During presentation sessions, evaluations and comments are also offered by faculty members other than the group advisor, thereby promoting cross-disciplinary learning and network building. (4) Regular Faculty-Student Liaison Meetings To identify students' questions and requests regarding educational and research facilities, curriculum, assessment, and career development and job search, and to provide a forum for exchanging opinions and information between students and faculty, liaison meetings are held twice a year (spring and fall). These meetings help improve the educational environment and enhance students' motivation to learn. (5) Internship Opportunities through the Resilience Research and Education Promotion Consortium The Degree Program provides internship opportunities at institutions participating in the Consortium, where students gain practical experience under the guidance of researchers and faculty members with specialized knowledge and skills, affiliated with the Cooperative Graduate School system. Through this experience, which bridges theory and practice, students strengthen both their research capabilities and their practical competence.

Approaches to Assuring and Enhancing Educational Quality

(1) Achievment Evaluation System

- The achievement evaluation system is used to assess students' learning outcomes and to verify the validity of the curriculum and the appropriateness of instruction.
- An achievement evaluation board is established to ensure the quality of education and to strengthen the framework for achieving the objectives of the degree program through continuous review and improvement of all educational activities.
- This achievement evaluation system is improved at all times in accordance with the PDCA cycle defined below.

Plan: Plan an achievement evaluation system and draw up implementation details, standards, etc.

Do: Evaluate the achievements of each student individually by multiple faculty members.

Check: Cross-check how the achievement evaluation system is formulated against how it is actually used.

Act: Improve detected problems in the system or usage.

(2) Workshops for Newly Appointed Faculty

The FD (Faculty Development) Committee organizes workshops for new faculty members upon appointment. These workshops include explanations of the educational philosophy by the program leader and introduce unique educational improvement measures (e.g., achievement evaluation) of the Risk and Resilience Engineering Degree Program. Participants also bring their PCs to learn how to use internal university platforms (TIPS, RISS, FAIR, TWINS, etc.) with hands-on access support.

(3) Implementation and Utilization of Course Evaluations

The FD Committee conducts course evaluations using TWINS, aggregates the results, and shares them with all faculty members. This allows faculty to appropriately understand students' opinions regarding course management and to use this feedback for improving their teaching practices.

Master's Program in Computer Science

Master of Engineering

Program Educational Objectives

The Master's Program in Computer Science organizes its education and research to cultivate individuals with deep expertise in diverse areas of computer science as well as the knowledge, specialized research ability and practical work ability that work on global demands and standards, and possess both ingenuity and flexibility and can use all of these to contribute to solving the problems in a specific field by informatics approaches.

Graduate Profile	To develop researchers and highly skilled professionals who possesses specialized knowledge and engineering abilities in a wide range of areas in computer science as well as the communication and presentation abilities for his or her area of expertise and the fundamental abilities for carrying out research and development and applying these knowledge and abilities to solve various real-world problems.

Diploma Policy

The degree of Master of Engineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: The ability to identify new research questions by oneself, and to prepare and execute a plan of action to answer these questions using advanced specialized knowledge and skills in a wide range of areas in computer science	①Whether research tasks in the areas of computer science are appropriately set up ②Whether specialized skills for conducting research and development in the areas of computer science were gained ③Whether research plans in the areas of computer science are drawn up and steadily carried out with effective outcomes

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge: Advanced specialized knowledge and skills in a wide range of areas in computer science, and the ability to use them	①Whether the fundamental knowledge in the areas of systems and information engineering is gained ②Whether the advanced specialized knowledge and skills in the areas of computer science are gained ③Whether the specialized knowledge and skills that one possesses are appropriately used
	8. Ethical view: Refined ethical view in a wide range of areas in computer science	①Whether researcher ethics and engineer ethics are understood and adhered by ②Whether human research ethics as well as formalities and/or procedures necessary for research are understood
Guidelines for Assessing Learning Outcomes	– Learning outcomes are evaluated based on "the seminar of the first year", “Mid-term Presentation of Master’s Thesis”, and “achievement evaluation sheet”. – In the seminar of the first year, the student presents the research outcomes and research plan that are available at that point and receives evaluation and feedback. – At the end of the first year, the student checks the achievement evaluation sheet together with supervisors to check the achievements at that point of time and review the learning plan for the second year. – At the “Mid-term Presentation of Master’s Thesis” in the second year, the student presents the research outcomes for Master’s thesis creation and receives interim evaluation and feedback. – At the final exam, final thesis examination is administered with the student’s presentation about the degree thesis content, and the review board checks the achievement evaluation sheet to evaluate their learning outcomes.	

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all the following evaluation standards are met. Note that the review of the research outcomes of specific tasks (the “specific task research report”) can take the place of the review of master's thesis. <Criteria for degree thesis review> 1. Whether the thesis provides a clear description of the significance and positioning of the research based on the understanding of research and development trends and previous studies in the areas of computer science 2. Whether the thesis shows research outcomes accompanied by new perspectives, findings, interpretations or applied values in comparison with conventional research 3. Whether the research results are adequately discussed and sufficiently verified in reliability 4. Whether research backgrounds, purposes, methods, results, discussions and the line of reasoning are developed logically and demonstratively 5. Whether the thesis is organized in a format and style of presentation appropriate as a Master's thesis with sentence expressions appropriately used and literatures, graphics, etc. correctly cited with proper referencing. <Criteria for specific task research report review> 1. Whether an appropriate problem set for solving problems in the field of computer science using advanced ICT is presented 2. Whether the process of practical development project planned and managed by the student to build software and system is clearly described 3. Whether the results of the research are logically and empirically demonstrated to contribute to the solution of the problem. 4. Whether the report is organized in a format and style of presentation appropriate as a research report with sentence expressions appropriately used and literatures, graphics, etc. correctly cited with proper referencing

Evaluation Criteria for Degree Theses/ Dissertations	<Criteria for final exam> 【Research ability】Whether advanced specialized knowledge and skills in a wide range of areas in computer science was gained 【Research ability】Whether new tasks are identified and a plan to solve them is drawn up and steadily carried out in one's own right 【Specialized knowledge】Whether the advanced specialized knowledge and skills in a wide range of areas in computer science and the ability to use them were gained 【Ethical view】Whether the refined ethical view in a wide range of areas in computer science was gained 【Communication competence】Whether the ability to express things accurately and clearly and make debates of expertise was gained <Level standards required for the degree thesis or specific task research report, review board members, review method and review items, etc.> A master's thesis review board must be organized with one chief reviewer and two or more sub-reviewers who are applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School. However, where required, faculty members of other Degree Programs or other university graduate schools or laboratory researchers, etc. can serve as sub-reviewers. The chief reviewer must be the research supervisor. As the sub-reviewers, two or more applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School must be included. The chief reviewer opens a master's thesis review board, and the board reviews the thesis or research report in accordance with the criteria to judge the acceptance of the thesis or research report. The thesis passes if approved to be on a master's thesis level in all of the above evaluation items 1 to 5 with the final (oral) exam included in the judgment.

Curriculum Policy

The curriculum is organized to provide students with the specialized knowledge and research ability in mathematical informatics engineering, intelligence software, software systems, computer engineering, media engineering and intelligence/information engineering. These fields cover from the basal technologies intended for the generation, processing, and utilization of “information” , such as computers, networks, and security, to the applied technologies, such as web applications, user interfaces, speech recognition/image analysis and high-performance computing. In addition, students gain a wide range of basic knowledge and ethical view in the areas of engineering. The program also offers research supervision to aid in the development of Master's thesis. The facility cultivates human resources able to identify and solve problems from a wide perspective extending over multiple areas in science and technology.

Curriculum Design Framework	– The Master's Program in Computer Science organizes Major Subjects and Foundation Subjects for Major in Degree Programs’ Common Courses and in Program subjects. – With the “required subjects in Program subjects” and “Foundation Subjects for Major in Degree Programs’ Common Courses”, students gain fundamental engineering abilities. – With “Degree Programs’ Common Courses” , students gain the Specialized knowledge in the areas of computer science. – With the “required subjects in Program subjects”, students are engaged in research activities in the area of expertise under the advice of supervisors. Through these, students gain the Specialized knowledge in the areas of computer science, the Research ability for the area of expertise, presentation ability, and Ethical view in addition to the Knowledge application competence, Management competence, Communication competence and Teamwork competence. – With the “Foundation Subjects for Major in Degree Programs’ Common Courses”, students gain Knowledge application competence, Management competence, Communication competence, presentation ability, Internationality competence, the Specialized knowledge in the areas of computer science, and the Research ability for the area of expertise. – With seminars and “Mid-term Presentation of Master’s Thesis”, students gain presentation experience. – With “Project-based learning (PBL) classes”, students gain software development skills and cultivate Communication ability and teamwork skills. – With “Graduate General Education Courses”, “Interdisciplinary Foundation Courses”, “Degree Programs’ Common Courses”, etc. students gain the specialized knowledge in a wide range of areas including the areas of information science. – Through TA (Teaching Assistant) activities, supervising the research activities of junior students in their laboratories, etc., students gain management experience. – In addition to research activities based on the “required subjects in Program subjects”, students acquire the Ethical view through e-learning courses.

Teaching and Learning Methods	– Each student sets up research tasks in their respective areas of expertise and proceeds with conducting research under the advice of supervisors. – Students take “specialized foundation subjects in Degree Programs’ Common Courses” and “Graduate General Education Courses” to gain generic knowledge, abilities, etc., and “Interdisciplinary Foundation Courses”, “Degree Programs’ Common Courses” and “Program subjects” to gain specialized knowledge and ability, etc. – ” Project-based learning (PBL) classes” help students improve group skill and communication ability. – Obtained research findings are presented in seminars and “Mid-term Presentation of Master’s Thesis” to have feedback not only from their supervisors but also from participating students and faculty members and to be presented in research meetings inside and outside Japan or in academic journals, etc. – “Internship classes”, with which students participate in internships at companies, research institutes, etc., helps students improve communication ability, etc. – By completing a certain number of English classes, students will receive the “Computer Science English Program Certificate of completion” which will enhance their Internationality competence.

Admission Policy

Desired Student Profile	The Master's Program in Computer Science widely seeks candidates inside and outside Japan who possess basic skills in the areas of information science and mathematics and have a keen desire to gain the specialized knowledge, engineering skills, fundamental research and development abilities and practical abilities in the areas of information science or the areas of mathematics of information in the Graduate School.
Student Selection Process	– To accept outstanding and diverse human resources inside and outside Tsukuba, candidates are solicited through multiple entrance exam channels including recommendation entrance exam, general entrance exam and special selection of working students at different timings and different numbers of students admitted. – To prove foreign language proficiency, candidates are required to submit the score sheet of English language test (e.g. TOEIC, TOEFL). – In the general entrance exam, recommendation entrance exam and special entrance exam for working students, candidates are evaluated through document screening and an oral exam so that the candidates can be comprehensively evaluated, including their communication and presentation abilities, etc.

Learning Support Framework

Academic Support	– The supervisors will motive students to study by creating a study plan at the time of enrollment using an achievement evaluation sheet and reviewing it as necessary. – The "Computer Science English Program Certificate of completion" system, which certifies students who have completed a certain number of designated English courses, will enhance students' motivation to study English.
Opportunities for Peer Interaction	– Promote interaction among students through a tutoring system for international students. – Promote interaction among students by providing opportunities for discussion among students, as well as with faculty members, during seminars. – Provide opportunities for interaction among students through TA (Teaching Assistant) activities and research guidance for junior students in laboratories.
Opportunities for Student–Faculty Interaction	– Provide opportunities for interaction with faculty members by organizing regular student-faculty liaison meetings. – Promote interaction with faculty members through participation in small seminars in laboratories and research projects led by faculty members. – Provide opportunities for interaction with faculty members by assisting in classes through TA (Teaching Assistant) activities.

Approaches to Assuring and Enhancing Educational Quality

– Conduct course evaluation surveys and share the results within the degree program so that faculty members can reflect their teaching, thereby ensure and improve the quality of education.
– In addition to university-wide Faculty Development (FD) lectures and workshops, organize independent FD lectures and workshops on specific topics as needed.

Master's Program in Intelligent and Mechanical Interaction Systems

Master of Engineering

Program Educational Objectives

The Master's Program in Intelligent and Mechanical Interaction Systems investigates engineering systems based on mathematical models representing the complex phenomena of humans, society, and nature, as well as theories in various fields such as mathematics, physics, and informatics working in harmony to contribute to the real world. This program cultivates high-level professionals with the fundamental knowledge and ethical views in the field of engineering, who possess the technical expertise and the research abilities to identify and solve problems from a wide perspective.

Graduate Profile	Students develop advanced knowledge and skills in the field of Intelligent and Mechanical Interaction Systems in addition to fundamental knowledge and academic abilities appropriate for high-level professionals able to contribute to society by identifying and solving relevant problems in the field of engineering.

Diploma Policy

The degree of Master of Engineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research skills: To possess the fundamental skills necessary to set up a compelling research topic in the field of Intelligent and Mechanical Interaction Systems and to be able to conduct the research and produce significant outcomes.	①To be able to set up a compelling research topic in the field of Intelligent and Mechanical Interaction Systems. ②To possess the fundamental skills necessary to conduct research in the field of Intelligent and Mechanical Interaction Systems. ③To be able to carry out research in the field of Intelligent and Mechanical Interaction Systems and produce significant outcomes.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge skills: The ability to develop fundamental knowledge and academic abilities appropriate for high-level professionals in the field of engineering and the advanced specialized knowledge to command the field of Intelligent and Mechanical Interaction Systems.	①To possess fundamental knowledge in the field of Systems and Information Engineering. ②To possess the mathematical knowledge and abilities widely used in the field of Intelligent and Mechanical Interaction Systems. ③To possess the advanced specialized knowledge needed to command the field of Intelligent and Mechanical Interaction Systems.
	8. Ethical skills: Ability to build an ethical view and ethics awareness appropriate for highly skilled professionals in the field of engineering.	①To understand and comply with research and engineering ethics. ②To obtain ethical knowledge of research involving human subjects and to understand and implement the procedures necessary for such research.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement evaluation based on the Achievement Evaluation Criteria Table, in order to objectively assess and verify the level of competence acquisition in accordance with the Diploma Policy at each stage. The stages and methods of the achievement evaluation are as follows. – In the Seminar in Intelligent and Mechanical Interaction Systems I, students will present the research outcomes of their first year. Their performance will be evaluated based on the presentation. – In the Seminar in Intelligent and Mechanical Interaction Systems II, students will present the research outcomes that will form the foundation of their master's thesis. Their performance will be evaluated based on the presentation. – The student's supervisor will review and verify the Achievement Evaluation self-check to ensure that all evaluation criteria are met. – Achievement Evaluation items are reviewed as part of the final examination, which is a requirement for the awarding of the degree. The examination is conducted by the Achievement Review Board, which confirms the evaluation plan prepared by the student's research supervisor in accordance with the Standards of Achievement Level Assessment.	

Guidelines for Assessing Learning Outcomes	<Criteria for the final examination> 1. (Generic competences) The student should have acquired knowledge utilization skills, management skills, communication skills, teamwork skills, and international skills appropriate to those who have completed the Master's Program in Intelligent and Mechanical Interaction Systems. 2. (Research ability) The student should have obtained the ability to set up an appropriate research topic, conduct the research, and produce signifi cant outcomes in the field of Intelligent and Mechanical Interaction Systems. 3. (Specialized knowledge) The student should have obtained fundamental knowledge and academic abilities appropriate for high-level professionals in the field of engineering and advanced specialized knowledge and operational skills in the field of Intelligent and Mechanical Interaction Systems. 4. (Ethical view) Th e student should have acquired an ethical perspective and ethical knowledge appropriate for high-level professionals in the area of engineering.
Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if it satisfies all the following criteria. <Criteria for thesis examination> 1. The dissertation should describe the significance and positioning of the research in the engineering field and should be based on the understanding of previous research in related fields. 2. The dissertation should contain original research outcomes that contribute to the development of the engineering field, and should be suitable for publication at academic conferences. 3. The reliability of the research results should be verified. 4. The research results should be appropriately discussed, and valid conclusions should be drawn from the discussions. 5. The background, purpose, methods, results, discussions, and conclusions of the dissertation should be summarized and organized in a format appropriate for a Master's degree thesis. <Required standards for thesis submission, the system of review board members, evaluation method, and review items > The Master's dissertation review board shall consist of one chief reviewer and two or more sub-reviewers who are faculty members of the Graduate School of Systems and Information Engineering degree programs. However, faculty members of other degree programs or other universities' graduate schools or laboratory researchers can serve as sub-reviewers when required. The chief reviewer must be the research supervisor of the student. The sub-reviewers must include faculty members from the Graduate School of Systems and Information Engineering degree programs. The Master's dissertation review board evaluates the thesis following the criteria for degree thesis review to provide a pass/fail judgment. The dissertation will be approved when it is deemed to have reached a Master's dissertation level regarding the five evaluation items described above, including an oral exam in the judgment.

Curriculum Policy

The curriculum is organized to cultivate high-level professionals who possess the specialized knowledge and research ability needed to identify and solve problems from a wide perspective extending over multiple areas of science and technology. Courses in the Intelligent and Mechanical Interaction Systems are designed to cover system design, human-machine-robot systems, measurement and control engineering, communication systems, as well as a wide range of fundamental knowledge and ethical view in the field of engineering.

Curriculum Design Framework	The primary goal of the curriculum is to develop research abilities in the field of Intelligent and Mechanical Interaction Systems. Students gain basic and specialized knowledge, ethical view, and competences through Major Subjects in the Degree Programs' Common Courses, as well as Major Subjects and Foundation Subjects for Major in the Degree Program's Courses. Whenever needed, the curriculum is supplemented by the Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, and Graduate General Education Courses. – Students acquire the ability to implement knowledge mainly through Special Research Courses including: Research in Intelligent and Mechanical Interaction Systems I, II, Seminars (Seminar in Intelligent and Mechanical Interaction Systems I, II), and Collaboratory Research Workshops (Collaboratory Research Workshop in Intelligent and Mechanical Interaction Systems Ia, Ib, IIa, IIb). – Management competences are obtained through Special Research Seminars and Research Proposal Writing Workshops (Research Proposal Writing Workshop in Intelligent and Mechanical Interaction Systems I, II). – Communication competences are trained through Special Research, Seminars, and Research Presentation Workshops (Oral Presentation Workshop in Intelligent and Mechanical Interaction Systems Ia, Ib, IIa, IIb). – Teamwork competences are obtained through Special Research, Research Paper Presentation Workshops, Collaboratory Research Workshops, Laboratory Work (Laboratory Work in Intelligent Interaction Systems a, b, Laboratory Work in Mechanical Interaction Systems), teaching assistant experience, and external activities. – Competence in Internationality is gained mainly through Special Research, TOEIC Exercise (TOEIC Exercise in Intelligent and Mechanical Interaction Systems I, II), and Research Presentations in English. – Research ability is achieved through Special Research, Fundamentals of Intelligent and Mechanical Interaction Systems, Tools and Practices Subjects (Statistical Data Analysis for Intelligent and Mechanical Interaction Systems, Tools and Practices for Intelligent Interaction Systems a, b, Tools and Practices for Mechanical Interaction Systems), Foundation Subjects in Mathematics (Fundamentals of Mathematics in Intelligent and Mechanical Interaction Systems, Fundamental Theory of Intelligent Interaction Systems, Fundamental Mathematical System of Mechanical Interaction Systems), TOEIC Exercise, Laboratory Work, Collaboratory Research Workshops, and Research Proposal Writing Workshops.

Curriculum Design Framework	– Specialized knowledge is accomplished through Special Research, Foundation Subjects in Mathematics, Degree Programs' Common Courses (mainly in the field of Intelligent and Mechanical Interaction Systems), and Collaboratory Research Workshops. – An ethical view is principally gained through Special Research, Fundamentals Subjects, and e-learning courses for ethics.
Teaching and Learning Methods	– Students of various academic backgrounds focus on taking lectures to gain the fundamental knowledge and skills necessary for conducting research upon enrollment. At the same time, students are guided to learn how to identify socially and academically significant research topics by themselves. – Each student will learn independently more specialized knowledge and skills through courses while working on their research topic. In addition, by taking advantage of the multiple supervisor system, students will be able to receive guidance and participate in the research seminars of sub-supervisors and develop their abilities to analyze problems from a broader perspective. – Students are guided to present their research findings in seminars and academic conferences and seek the evaluations of many researchers from an early stage. Such interactions help students improve their presentation and communication abilities and empower them to drive forward their research and gain further advanced specialized knowledge and skills. – Concurrently, each student performs an Achievement Evaluation self-check as needed to encourage the acquisition of lacking knowledge or skills in order to complete the program.

Admission Policy

Desired Student Profile	We seek candidates who possess mathematical skills, English language skills, and mathematical thinking ability necessary for learning and researching in the field of Intelligent and Mechanical Interaction Systems. Students are expected to acquire research skills, specialized knowledge, and ethical view appropriate for a Master's degree holder and a researcher or professional in the field of Intelligent and Mechanical Interaction Systems.

Student Selection Process	The primary policy is to seek widely talented and outstanding applicants, regardless of whether they are from within the university, off-campus, or from the workforce. The selection process considers a variety of candidates through the Entrance Examination by Commendation, the General Entrance Examination, and a Special Selection Process for Working Individuals. The recruitment capacity is divided into multiple entrance examinations conducted within the same academic year. An oral examination is mandatory regardless of the type of entrance examination. In addition to these requirements, submission of the official academic transcripts will be needed for the August selection (General Entrance Examination and Special Selection Process for Working Individuals.). To prove foreign language proficiency, candidates are required to submit the score sheet of English language test (e.g. TOEIC, TOEFL). – The Entrance Examination by Commendation (conducted in July) seeks candidates who wish to enroll in the Master's Program in Intelligent and Mechanical Interaction Systems as their first choice, who have excelled academically, and possess the abilities necessary to conduct research in the field of Intelligent and Mechanical Interaction Systems. – The first General Entrance Examination (conducted in August) seeks candidates who possess robust academic abilities in mathematics and English, who have a clear reason for applying to the Master's Program in Intelligent and Mechanical Interaction Systems and excel in the specificity and inspiration with regard to the research plan. In the second general entrance examination (conducted in February), candidates are evaluated based on their graduation research (or equivalent) in addition to the requirements of the first general entrance examination. – The Special Selection Process for Working Individuals (conducted in August and February) evaluates the research or social experience of the candidates in addition to the evaluation items of the entrance examinations. The admission judgment is organized independently from that for the general entrance examination; therefore, the program actively accepts working individuals (or those with social experiences) who possess the motivation and abilities to join the program.

Learning Support Framework

Academic Support	To promote independent and effective learning, the program implements multiple support initiatives. The Achievement Evaluation self-check allow students to visualize their learning outcomes and assess their progress, while enabling academic supervisors to accurately monitor learning status and provide appropriate guidance. In addition, the Global Multi-Mentor System (GMMS), offers opportunities for interaction with external researchers, fostering multifaceted critique and discussion that advance students' research activities. The “Learning × Career” Hybrid Support System (LCHS) enhances research motivation by facilitating exchanges with corporate researchers and alumni, while also supporting students in developing a commitment to pursue specialized career paths, through progression to the doctoral program. Collectivelly, these support systems encourage autonomous learning, improve the quality of research, and guide students in designing career paths that effectively leverage their expertise.
Opportunities for Peer Interaction	To enhance students' motivation for learning and improve the quality of their research, the program provides structured opportunities for interaction among students. In graduate seminars, students take turns presenting their research topics to their peers in a clear and structured manner, followed by in-depth discussions. Full-day, face-to-face poster presentation sessions are organized, allowing all students to share their research outcomes and actively exchange opinions. These activities not only deepen mutual understanding among students but also foster the development of communication skills and critical thinking. Furthermore, both the Global Multi-Mentor System (GMMS) and the “Learning × Career” Hybrid Support System (LCHS) are designed to engage multiple students simultaneously. By facilitating dialogue with external researchers and industry professionals, these systems promote information sharing, collaborative learning, and mutual intellectual stimulation. Collectively, these initiatives strenghten peer effects, revitalizing the learning environment and advancing the overall quality of research.

Opportunities for Student–Faculty Interaction	To enhance students' motivation for learning and improve the quality of their research, structured opportunities for interaction with faculty members are provided. In graduate seminars, students present their research and receive constructive feedback and probing questions from faculty, allowing them to refine the focus, methodology, and logical structure of their studies. During face-to-face poster presentation sessions, faculty and students engage in discussions of research outcomes, contributing to greater accuracy and depth in research findings. Furthermore, group projects conducted within the Laboratory Work course enable students to collaborate closely under faculty supervision, cultivating practical research skills and teamwork abilities. In addition, the Graduate School Roundtable provides a forum for open dialogue between faculty and students, facilitating consultations on both research activities and career planning. Moreover, through the Global Multi-Mentor System (GMMS) and the “Learning × Career” Hybrid Support System (LCHS), faculty collaborate with external researchers and industry professionals to provide students with multidimensional guidance. Collectively, these initiatives foster close interaction between students and faculty members, enhancing the learning environment and advancing the quality and rigor of research.

Approaches to Assuring and Enhancing Educational Quality

To ensure the quality of education in the Master's Program and promote continuous improvement, multiple systems and mechanisms have been established. For newly appointed faculty members, Faculty Development (FD) programs provide support for enhancing teaching abilities, including guidance on educational content and instructional methods. In addition, regular faculty training sessions including FD focused on achievement evaluation, are conducted to further elevate the quality of educational activities. The Achievement Evaluation Committee evaluates students' learning outcomes and examines both the validity of the curriculum and the appropriateness of academic supervision. Furthermore, a PDCA Committee continuously monitors and improves all educational activities, incorporating feedback provided by industry representatives, obtained during poster presentation sessions. Through these coordinated efforts, the quality of education is maintained, and the framework for achieving the program's learning objectives is strengthened.

Master's Program in Engineering Mechanics and Energy

Master of Engineering

Program Educational Objectives

The Master's Program in Engineering Mechanics and Energy, which help students possess advanced specialized knowledge in engineering areas of machinery, architecture, social infrastructure, energy, aerospace, etc. and also to take a multidisciplinary approach to associated surrounding areas, cultivates researchers and highly specialized professionals capable of proposing their own solution methods for the essential problems that they extract and transmitting their outcomes effectively inside and outside Japan.

Graduate Profile	He or she should have interests in the areas of engineering such as machinery, architecture, social infrastructure, energy and aerospace and set their sights to be an engineer or researcher who has the fertile minds to contribute to mankind's strides. Furthermore, he or she should be willing to learn to take a multidisciplinary approach to associated surrounding areas in addition to gaining advanced specialized knowledge.

Diploma Policy

The degree of Master of Engineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Ability to extract problems in the areas of engineering mechanics and energy and propose and carry out solution methods	①If research tasks in the areas of engineering mechanics and energy are appropriately set up ②If the basic skills for conducting research in the areas of engineering mechanics and energy were gained ③ If research is carried out successfully in the areas of engineering mechanics and energy
	7. Specialized knowledge: Basic academic abilities, advanced specialized knowledge and command of them in the areas of engineering mechanics and energy	①If the basic specialized knowledge in the areas of systems and information engineering was gained ②If advanced specialized knowledge and command of it in the areas of engineering mechanics and energy were gained

<table>
<tr><td rowspan="2">Knowledge and Skills</td><td>Competences</td><td>Evaluation perspectives</td></tr>
<tr><td>8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of engineering</td><td>If researcher ethics and engineer ethics were understood and adhered by</td></tr>
<tr><td>Guidelines for Assessing Learning Outcomes</td><td colspan="2">The assessment of learning outcomes is conducted through achievement evaluation based on the Achievement Evaluation Sheet, allowing an objective evaluation of the extent to which students have acquired the competences specified in the Diploma Policy. The learning outcomes related to the master's thesis are evaluated at the following stages:
– In Seminar in Engineering Mechanics and Energy I (1st year), students present the research achieved during the first year and receive evaluation and feedback.
– In Seminar in Engineering Mechanics and Energy II (2nd year), students clarify the academic positioning of their research topics, present their research achieved during the second year, and receive evaluation and feedback.
– In both the spring and fall semesters, Achievement Evaluation Sheet is confirmed and evaluated.
– During the thesis examination and final defense, students present the content of their thesis and undergo a degree evaluation, while also being evaluated using the Achievement Evaluation Sheet.</td></tr>
<tr><td>Evaluation Criteria for Degree Theses/ Dissertations</td><td colspan="2">A thesis is accepted if all of the following evaluation items are proven to be met.
<Criteria for degree thesis review>
1. With the review of the research trends and preceding researches in the associated areas, the significance and positioning of the research must be clarified.
2. Original research findings that contribute to engineering strides must be contained.
3. Research findings must be sufficiently verified in reliability.
4. The conclusion of the research must be based on objective evidence and rational deduction.
5. All of the above items must be incorporated with an appropriate thesis structure and unequivocal descriptions.
In addition, the thesis must be accompanied by a theme that accurately explains the thesis content.
<Criteria for final exam>
The student is asked to explain his or her degree thesis content, and at his or her explanation, the above criteria 1 to 5 must be confirmed to be met. In addition, the student must have gained the following abilities, knowledge, etc.
1. Competence of knowledge application: Ability to put advanced knowledge to use in society
2. Management competence: Ability to appropriately address challenges from every angle
3. Communication competence: Ability to express expert knowledge accurately and clearly
4. Teamwork competence: Ability to cooperate and actively contribute to the achievement of goals as a team</td></tr>
</table>

Evaluation Criteria for Degree Theses/ Dissertations	5. Competence in Internationality: Awareness to contribute to international society 6. Research ability: Ability to extract problems in the areas of engineering mechanics and energy and propose and carry out solution methods 7. Specialized knowledge: Basic academic abilities, advanced specialized knowledge and command of them in the areas of engineering mechanics and energy 8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of engineering <Level standards required for the degree thesis, review board members, review method and review items, etc.> A master's thesis review board must be organized with one chief reviewer and two or more sub-reviewers who are applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School. However, where required, faculty members of other Degree Programs or other university graduate schools or laboratory researchers, etc. can serve as sub-reviewers. The chief reviewer must be the research supervisory faculty member. The chief reviewer opens a master's thesis review board, and the board reviews the thesis in accordance with the criteria for degree thesis review to judge the acceptance of the thesis. The thesis passes if approved to be on a master's thesis level in all of the above evaluation items with the final (oral) exam included in the judgment.

Curriculum Policy

The curriculum is organized with the objective of fulfilling the Diploma Policy (DP).
More specifically, students deeply learn the foundations and leading-edge technologies in engineering areas of machinery, architecture, social infrastructure, energy, aerospace, etc. and also learn widely in multiple areas in science and technology so that the Program can cultivate human resources who have the big picture in mind that an ordinary vertically-sectioning engineering major would not give.

Curriculum Design Framework	The Master's Program in Engineering Mechanics and Energy organizes Major Subjects and Foundation Subjects for Major in Degree Programs' Common Courses, and Major Subjects and Foundation Subjects for Major in Program subjects. In addition to the required subjects of 12 credits, Foundation Subjects for Major and Major Subjects are organized in the areas of “mechanics, disaster prevention and reliability engineering”, “solid mechanics and materials engineering”, “fluids and environment engineering” and “thermal fluid and energy engineering”. Students need to take 18 credits or more from these subjects. The required Major Subjects serve to cultivate presentation and communication abilities and a wide viewpoint, and from Degree Programs' Common Courses, students learn the foundations and leading-edge technologies of each of the areas.

	Moreover, to deepen the knowledge about the actual problems in engineering mechanics and energy, the curriculum also organizes the project subjects, which help students understand the process from identifying to solving problems using engineering means and develop means to provide a solution. Students attain the requirements enumerated in DP by incorporating the learning in these subjects and the research of each student's area of expertise into a master's thesis. Note that students are encouraged to take subjects offered in other Degree Programs, Graduate General Education Courses, Inter-disciplinary Foundation Courses, etc. that aim to develop a wider range of knowledge and research ability. (Generic knowledge and ability) – Competence of knowledge application is gained through Degree Programs' Common Courses, Program subjects, special researches, special seminars, etc. – Management competence is gained through special researches, special seminars, drawing up master's thesis research plans, etc. – Communication competence is gained through special researches, special seminars, Internship, academic conference presentations, etc.. – Teamwork competence is gained through special researches, special seminars, internships, teaching assistant experience, laboratory activities, etc. – Competence in Internationality is gained through special researches, special seminars, internships, EME international seminar series, joint research with foreigners (including international students), international conference presentations, English research paper publication, etc. (Specialized knowledge and ability) – Research ability is gained through special seminars, special researches, academic conference presentations, research paper publication, master's thesis, etc. – Advanced knowledge in the area of expertise is gained through Degree Programs' Common Courses, Program subjects, academic conference presentations, research paper publication, master's thesis, etc. – A cross-disciplinary point of view is gained through Degree Programs' Common Courses and Program subjects, special researches, special seminars, etc. – The ability to extract problems and propose their own solution methods is gained through special seminars, special researches, etc. – The ability to transmit outcomes inside and outside Japan is gained through special seminars, special researches, academic conference presentations, master's thesis, etc. – Ethical view is gained through special seminars, special researches, e-learning for ethics, etc.

Teaching and Learning Methods	– Students learn in accordance with the curriculum model for subjects. – Each student learns under their initiative for more specialized knowledge and skills through classes, etc. while working on research tasks. – Students set up research tasks in each area of expertise and proceed with a master's thesis research under the advice of supervisory faculty members. – Students are supervised to present obtained research findings in seminars, academic conferences, etc. and to seek the evaluations of many researchers. This helps students improve their presentation and communication abilities and also empowers them to drive forward their research and gain more advanced specialized knowledge and skills.

Admission Policy

Desired Student Profile	We seek potential engineers or researchers with the fertile minds to contribute to mankind's strides, who have an interest in machinery, architecture, social infrastructure, energy, aerospace, and such other engineering areas, based on a bachelor's degree level of sufficient academic abilities in mathematics, physics and English.
Student Selection Process	The entrance exams are designed to be convenient for those who graduated from other universities, working individuals and international students so that the Program actively accepts outstanding human resources outside Tsukuba. To select out enrollments, diverse candidates are sought through recommendation entrance exam, general entrance exam and special entrance exam for adults or other enrollment selection methods. The opportunity of entrance exam is offered multiple times in the same year with the split of the number of persons admitted. In the general selection process, candidates are evaluated based on the result of oral exam, and the foreign language proficiency proven by the TOEIC official score certificate, the TOEFL official score reports, etc. In the recommendation entrance exam and special entrance exam for adults, candidates are comprehensively evaluated with oral exam results. – In the recommendation entrance exam, the candidates must remarkably excel academically and possess the sufficient knowledge and research abilities in the areas of engineering mechanics and energy. – The general entrance exam selects those who possess the basic academic abilities and research abilities that enable the completion of a bachelor's degree program in engineering with honors. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to the above basic academic abilities and research abilities.

Learning Support Framework

Academic Support	The supervisror provides both laboratory-based activities and individual guidance, consistently monitoring the student's progress. The co-supervisors meet with the student in both the spring and fall semesters to receive reports and provide advice regarding course enrollment plans, research plans and their progress, as well as career paths (mainly job-hunting). In these meetings, the student presents Achievement Evaluation Sheet and Course and Research Plan Sheet, thereby objectifying their own situation before entering into the discussion.
Opportunities for Peer Interaction	Students make research presentations and engage in question-and-answer sessions during Daigakuin Seminar, thereby gaining an understanding of the research activities undertaken by their peers while also receiving mutual feedback and critique. A student-faculty meeting is held for all students in the degree program, providing a forum for sharing common awareness of issues and improvements regarding learning progress and student life. Many students also enroll in project-based learning (PBL) courses, where they have opportunities to collaborate with other participants in tackling assigned tasks.
Opportunities for Student–Faculty Interaction	The supervisor conducts both laboratory-based activities and individual guidance, maintaining continuous oversight of each student's progress. The co-supervisors meet with students in the spring and fall semesters to receive reports and provide advice on course enrollment plans, research plans and their progress, as well as career paths (primarily job-hunting). In addition, a student-faculty meeting is held for all students in the degree program, where opinions are exchanged on lectures, research, student life, and related matters.

Approaches to Assuring and Enhancing Educational Quality

The PDCA Committee verifies the implementation status of confirmation and feedback from their supervisor and co-supervisors, and monitors to ensure that both supervisors and students are carrying them out properly. Evidence supporting the Achievement Evaluation Sheet and course grade assessments are collected and stored, and are utilized for improving course content, syllabi, and achievement assessment methods. Appropriate measures are also taken in response to requests raised by students at the student-faculty meeting.

Master's Program in Life Science Innovation (Bioinformatics)

Master of Bioinformatics

Program Educational Objectives

The Master's Program in Life Science Innovation cultivates highly specialized professionals who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	To contribute to solve problems in the global society through a bioinformatics approach, one needs to gain qualities required to be active in the international society, including the communication ability, linguistic skill, the knowledge in the bioinformatics and associated areas, and the abilities to scientifically challenge and break through the problems that should be solved. The Master's Program in Life Science Innovation is designed to cultivate “highly specialized professionals and those who possess the basic abilities for carrying out a master's thesis research with their sights to become a researcher who can practice the process from identifying to solving problems in bioinformatics using their expanded knowledge and skills cultivated for life science and information science” .

Diploma Policy

The degree of Master of Bioinformatics is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Innovation ability: Ability to open up new developments in the areas of life science	①If the basic concepts about the areas of life science were widely gained and problems are interpreted from a higher perspective ②If one has the motivation to gain new skills and knowledge instead of being bound by one's area of expertise ③ If the social needs in the areas of life science are understood ④ If appropriate research plans are drawn up and carried out to solve bioinformatics issues
	7. Specialized knowledge: Advanced knowledge and command of an area of expertise	①If leading-edge specialized knowledge about bioinformatics was gained ②If gained knowledge was put to use to solve issues

	Competences	Evaluation perspectives
Knowledge and Skills	8. Advanced practical English: Practical English proficiency that works in the areas of life science	①If an accurate description of one's understandings or opinions about problems in the areas of life science is provided in English ②If written research proposals, reports, etc. are created in English
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Master's Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is administered, through document review and an oral examination, to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – In the second year, Achievement Evaluation II and the Final Examination are administered, through document review and an oral examination, to verify that the student has fully achieved the competences specified in the Diploma Policy.	
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree thesis must be the results of work in which the diploma applicant took the initiative and must contain unprecedented research findings that contribute to make strides in the areas of bioinformatics. The degree thesis must be written logically and scientifically and must be constructed in an appropriate format as a degree thesis. 【Review board members】 A thesis is reviewed by an exclusive board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the two or more sub-reviewers, one or more faculty members qualified to supervise the research in the Program must be included. The three or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the three or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain their degree thesis content and then questioned by exclusive board members about what they have explained. During this examination, in which the applicant is required to make a presentation about their degree thesis logically and scientifically, the applicant is evaluated to see if they can convince the reviewers sufficiently by answering the reviewers' questions using the specialized knowledge of the areas of bioinformatics with insight.	

Curriculum Policy

Under the education and research environment where there is the active participation by not only the faculty members of Tsukuba but also by collaborative graduate school faculty members from the research institutes or such which belong to the Tsukuba Life Science Promotion Association, students learn about unsolved issues of the society and get engaged in research activities to pursue to open up new strides in the areas of bioinformatics. The Master's Program in Life Science Innovation, whose purpose is to cultivate globally active highly specialized professionals, offers all lectures in English and organizes lectures and seminars taught by researchers who are active in the front lines and belong to overseas research institutes. To cultivate the ability to have the big picture in mind from a cross-disciplinary perspective, students benefit from the General Foundation Subjects which cover all-around basic concepts in the areas of life science. As part of the career training, the curriculum includes internship subjects and other subjects such as for learning the operations of research organizations, etc. Moreover, Major Subjects for cultivating the expert abilities in bioinformatics are also organized.

Curriculum Design Framework	− The curriculum in the bioinformatics realms are composed of Major Subjects, the General Foundation Subjects shared by the six realms of the Master's Program in Life Science Innovation (Disease Mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics, Biomolecular Engineering), and Graduate General Education Courses. With the Major Subjects, in addition to the lectures for cultivating the expert abilities in bioinformatics, students are supervised for bioinformatics research in the laboratory of each student. − Competence of knowledge application is gained with master's thesis creation, etc. − Management competence is gained with “Regulatory Science”, etc. − Communication competence is gained with “Master's Research in Life Science Innovation”, etc. − Teamwork competence is gained with “Team Learning in Life Science Innovation（Basic)”, etc. − Competence in Internationality is gained with “Master's Life Science Innovation Seminar”, etc. − Innovation ability is gained with Major Subjects, “Master's Research in Life Science Innovation”, etc. − Specialized knowledge is gained with Major Subjects, etc. − Advanced practical English is gained with General Foundation Subjects, Major Subjects, etc.

Teaching and Learning Methods	– After learning how to gather information and understanding social needs under the supervision of supervisory faculty members, students draw up and carry out an appropriate research plan for solving bioinformatics issues and round up the results into research outcomes. – Students acquire English presentation skills in the process of presenting their research outcomes at the T-LSI student workshop and other events. – Through General Foundation Subjects and Graduate General Education Courses, students widely gain the basic concepts in the areas of life science and improve communication ability in English in order to be capable of using knowledge not bound by one's area of expertise. – Practical abilities as working individuals are cultivated through internships. – Specialized knowledge is gained through Major Subjects.

Admission Policy

Desired Student Profile	We seek candidates who possess the motivation to make innovations in the areas of bioinformatics and have the sufficient qualities to gain the specialized knowledge necessary to attain such innovations, and advanced practical English.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess bachelor's degree level knowledge necessary for learning in the Master's Program in Life Science Innovation and the ability to write about research backgrounds and future prospects in English. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation to drive innovation in the field of Bioinformatics and their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for studying in the Master's Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Master's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Policy and Planning Sciences

■ Doctor of Philosophy in Policy and Planning Sciences

Program Educational Objectives

The Doctoral Program in Policy and Planning Sciences cultivates “problem identify-and-solve type human resources in engineering for future visions” (university faculty members, highly specialized professionals, researchers, etc.) who possess the knowledge about the entire three areas of assets/resources design (finance/optimization), spatial/environmental design (urban planning) and organizational/behavioral design (behavioral science) as well as the engineering skills worthy of being called those of an expert in at least one area and can complete the process of identifying and solving problems in their own right and produce research outcomes that are highly appraised internationally.

Graduate Profile	He or she should have the “problem-solving ability” founded on social knowledge, logical thinking ability, and various kinds of engineering skills and the “problem-identifying ability” which can objectify more abstract events as a “problem identify-and-solve type human resource in engineering for future visions” and should be capable of being active as an engineering, economic or interdisciplinary university faculty member, governmental organization employee, international public employee, IT engineer, production planning/marketing engineer, government-funded bank, financial analyst, consultant, think tank researcher, urban planning or community development consultant, construction or real estate project/development planner, town architect, public employee in national or municipal planning departments, etc.

Diploma Policy

The degree of Doctor of Philosophy in Policy and Planning Sciences is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of policy and planning sciences	①If research tasks in the areas of policy and planning sciences are appropriately set up and the advanced skills for carrying out such research were gained ②If leading-edge research that produces ingenious outcomes in the areas of policy and planning sciences is carried out ③If research outcomes are presented and debated in English in international conferences, etc.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of policy and planning sciences	①Understanding of social phenomena (Find): If social phenomena are deductively understood based on the advanced knowledge about basic theories and rules of thumb in the areas of policy and planning sciences ②Data analysis (Analyze): If social phenomena are inductively understood based on data analysis ③Institution design (Plan): If institutions for social reforms are designed based on the understanding of social phenomena ④Experiment and advocacy (Do): If concrete advocacy or social experiment is done based on a designed institution ⑤Evaluation and measurement (See): If results of social experiment or advocacies are critically measured and evaluated in one's own right to deepen the understanding of social phenomena
	8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of policy and planning sciences	①If researcher ethics and engineer ethics were understood and adhered by ②If human research ethics as well as formalities and/or procedures necessary for research were understood
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes objectively confirms and assesses the acquisition status of competences based on the degree conferral policy at each stage, according to the achievement evaluation sheet. The progress of learning and of the writing of doctoral dissertation is examined and evaluated by the advisory group at the four stages: Special Doctoral Seminar in Policy and Planning Sciences I (typically in spring semester of the first year), Special Doctoral Seminar in Policy and Planning Sciences II (typically in fall semester of the first year), Special Doctoral Seminar in Policy and Planning Sciences III (typically in spring semester of the second year) and Special Doctoral Seminar in Policy and Planning Sciences IV (typically in fall semester of the second year). When Special Doctoral Seminar in Policy and Planning Sciences I and III are examined, achievements are evaluated using an achievement evaluation sheet. Students use the sheet to document their progress in acquiring the necessary competences, which they confirm with their supervisors. – Further, diploma examination is administered through two stages: preliminary review with Special Doctoral Research Work in Policy and Planning Sciences I by the dissertation review board, and the final exam with Special Doctoral Research Work in Policy and Planning Sciences II.	

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation items are proven to be met. <Criteria for degree thesis review> 1. Significance of research theme: If the problems concerning social phenomena identified and argued in the thesis for their solutions are found as academically significant or significant enough to lead to social contributions 2. Understanding of preceding researches: If existing theories and researches associated with one's research theme are extensively and accurately grasped and objectively appraised. If, based on that understanding, the research deeply debates issues, including as to the unique contributions that the research could attain to the literatures or as to the contribution or value that the research could have toward the society, economy, urban environments, business organizations and the workers there. 3. Understanding and appropriateness of research methods: If the methods (demonstration, experiment, simulation, investigation, survey and other design and data analysis, etc.) used to pursue the research theme are deeply understood and the skills to use them well in order to pursue the research theme were sufficiently gained 4. Appropriateness of presentation and interpretation of research results: If the skill to academically present research results and the thinking ability to interpret them deductively or inductively are possessed 5. Research overall: If the research is academically contributory and if the research successfully has developed a significant debate toward future research trends as results of an overview of steps 1 to 4 above and the objective evaluation of strengths and weaknesses of the research 6. Originality: If the research is worthy of being called an original research that adds new knowledge to existing findings 7. Format of thesis: If the appropriate level as an academic paper is reached in terms of the appropriateness of sentence expressions, the presentation and citation of graphics and literatures and the creation of literature list in the thesis <Criteria for final exam> 1. 【Research ability】 If leading-edge research tasks are set up and research plans are independently carried out based on the latest specialized knowledge in the areas of policy and planning sciences 2. 【Specialized knowledge】 If the leading-edge advanced specialized knowledge and command of the areas of policy and planning sciences were gained 3. 【Ethical view】 If the ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of policy and planning sciences were gained <Level standards required for the degree thesis, review board members, review method and review items, etc.> A doctoral dissertation review board must be formed by one chief reviewer and three or more sub-reviewers.

Evaluation Criteria for Degree Theses/ Dissertations	The chief reviewer and two or more sub-reviewers must be applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School, and in addition, one or more of the sub-reviewers must be selected from those who do not belong to the Doctoral Program in Policy and Planning Sciences. The chief reviewer opens a doctoral dissertation review board, and the board reviews the dissertation in accordance with the criteria for degree dissertation review to judge the acceptance of the dissertation. The dissertation passes if approved to be on a doctoral dissertation level in all of the above evaluation items 1 to 7 with the final (oral) exam included in the judgment.

Curriculum Policy

To develop the “problem-identifying ability” that can identify problems and abstract and formulate them as a quality possessed by “problem identify-and-solve type human resources in engineering for future visions, the curriculum is organized on the three pillars of ① assets/resources design (finance/optimization), ② spatial/environmental design (urban planning) and ③ organizational/behavioral design (behavioral science). Thus, the Program provides students with the specialized knowledge and research abilities related to these pillars as well as a wide range of basic knowledge and ethical view in the areas of engineering and cultivates such highly specialized professionals who can identify and solve problems from a wide perspective extending over multiple areas in science and technology.

- A wide range of knowledge is gained with Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses.
- Multifaceted research supervision with the use of research units, etc.
- A management ability development program, which helps students to develop the ability to set up research tasks in their own right and build a research method, is offered to support the gain of problem-identifying ability.

Besides the standard 3-year course of study, the Program includes various alternative plans such as the early completion course which permits finishing in 1 year, an extended 5-year course of studies, as well as the S Course (taking 3 years combined with the Master's Program), the A Course (the same but taking 4 years), and the standard 5-year course.

Curriculum Design Framework	Students gain (generic knowledge and ability) as follows: - Generic knowledge is gained through Major Subjects (elective), Degree Programs' Common Courses (Master's Program), Graduate General Education Courses and Inter-disciplinary Foundation Courses.

Curriculum Design Framework	– Competence of knowledge creation is gained through “Special Doctoral Seminar in Policy and Planning Sciences I to IV” and “Special Doctoral Research Work in Policy and Planning Sciences I and II” , in which students directly work on research. – Management competence, Communication competence and Teamwork competence are gained through “Internship in Policy and Planning Sciences” and “Facilitation Training Program in Policy and Planning Sciences” subjects. – Competence in Internationality is gained through “Facilitation Training Program in Policy and Planning Sciences” subjects, in which students learn with the active learning method as group work with international students, and “Special Doctoral Seminar in Policy and Planning Sciences I to IV” and “Special Doctoral Research Work in Policy and Planning Sciences I and II” in which students directly work on research on the premises of international research circumstances. Students gain (specialized knowledge and ability) as follows Research ability is gained through “Special Doctoral Seminar in Policy and Planning Sciences” , “Special Doctoral Research Work in Policy and Planning Sciences” , etc. – The specialized knowledge necessary for research is gained through Degree Programs' Common Courses such as “Special Lecture on Policy and Planning Sciences I to II” which pass on the latest, advanced specialized knowledge about policy and planning sciences. – The ethical view particularly necessary for the activities in the society is gained through “Internship in Policy and Planning Sciences” and “Facilitation Training Program in Policy and Planning Sciences” subjects, and the ethical view for research is gained through “Special Doctoral Seminar in Policy and Planning Sciences I to IV” and “Special Doctoral Research Work in Policy and Planning Sciences I and II” in which students directly work on research.
Teaching and Learning Methods	– By reference to model ① : Graduate school faculty member and model ② : Think tank chief researcher, students take Major Subjects in mainly the first year. – Concurrently with the above, doctoral dissertations are supervised in a multifaceted way by supervisory faculty members and researcher groups such as a research unit, and under this system of supervision, students proceed with conducting research on their respective research tasks and take 12 credits of specialized subjects concerning the writing of dissertations.

Admission Policy

Desired Student Profile	We seek candidates who possess engineering fundamental abilities (mathematical or logical thinking abilities), the knowledge of the entire three areas of assets/resources design (finance/optimization), spatial/environmental design (urban planning) and organizational/behavioral design (behavioral science), and the specialized knowledge about one of these areas as well as the problem-solving ability as equivalent to those who have completed a master's degree program.

Student Selection Process	– To accept outstanding and diverse human resources inside and outside Tsukuba, candidates are solicited through multiple entrance exam means including internal assessment selection, general entrance exam and special entrance exam for adults at different timings and different numbers of students admitted. – Irrespective of the type of entrance exam, an oral exam is mandatorily required. – The internal assessment selection selects those who are expected to complete the Master's Program in Policy and Planning Sciences, who possess high fundamental abilities and research abilities. – In the general entrance exam, the potential students to be selected out must possess certain fundamental abilities and research abilities. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to fundamental abilities and research abilities.

Learning Support Framework

Academic Support	Courses for acquiring a generic knowledge and ability can be taken from a wide range of fields. Special Doctoral Seminar in Policy and Planning Sciences I and III, as well as Special Doctoral Research Work in Policy and Planning Sciences I encourage students to manage their research progress and improve their presentation skills.
Opportunities for Peer Interaction	Opportunities for student interaction are promoted through "Facilitation Training Program in Policy and Planning Sciences" course group, which implements active learning through group work, and interdisciplinary research activities utilizing research units.
Opportunities for Student–Faculty Interaction	Opportunities for interaction between students and faculty members are promoted through the seminars involving multiple faculty members using sub-advisors and research units, as well as supporting a seminar for multiple faculty members and graduate students as part of degree programs. Meetings for graduate students and faculty members holds every year as opportunities for interaction.

Approaches to Assuring and Enhancing Educational Quality

– The degree program leader and the curriculum committee analyze and review the assessment results of learning outcomes, striving for the continuous improvement of educational quality.
– The academic management committee continuously reviews and enhances educational activities, ensures the quality of education through initiatives such as workshops, and strengthens the system for achieving the objectives of the degree program.
– Through Special Doctoral Seminar in Policy and Planning Sciences I–IV, multiple faculty members—including academic advisors—regularly evaluate the content and progress of students' research. Opportunities for obtaining external and objective evaluations of students' research are also ensured through conference presentations, journal submissions, and the feedback received from these activities.

Doctoral Program in Risk and Resilience Engineering

Doctor of Philosophy in Engineering

Program Educational Objectives

In these days of destabilized social conditions, one of the most important issues is to reach for secure and safe lands, districts, economy, and information society that have both “strength” and “flexibility” based on appropriate risk management, that is, a resilient system of society.
The Doctoral Program in Risk and Resilience Engineering seeks to cultivate academically global human resources who possess the research abilities, advanced skills and practical abilities based on deep theoretical foundations and the “ability to be flexible to unforeseen and changing circumstances from an engineering point of view, keep providing the required functionalities, and get them recovered”, which is in other words, the advanced skills that can put the results of risks analyzed and evaluated by engineering methods into use to reach for a resilient society and who can pass along the outcomes of education and research to the society with a view focused on actual social problems.

Graduate Profile	He or she should possess, based on the high fundamental engineering ability, the theoretical foundations and advanced associated information processing techniques for risk and resilience analysis and evaluation, and by adapting them from a wide comprehensive point of view to the real world's problems, which are the subject of risk and resilience engineering, he or she should be able to produce and develop concrete methods for identifying a problem and providing a solution using engineering means while fulfilling his or her given role shares in a research team or research project by bringing out high communication ability and taking a leadership position, and in addition can be active also in international scenes through their high presentation ability.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Fundamental engineering ability: Knowledge and academic abilities appropriate to researchers or highly specialized professionals in the areas of engineering	①If a wide range of basic knowledge in the areas of risk and resilience engineering was gained ②If the high academic abilities as highly specialized professionals in the areas of risk and resilience engineering were gained ③ If academic outcomes were attained in the areas of risk and resilience engineering

	Competences	Evaluation perspectives
Knowledge and Skills	7. Knowledge of theoretical foundations and associated techniques: Knowledge of the theoretical foundations for risk and resilience analysis and evaluation based on the fundamental engineering ability, and associated advanced information processing techniques	①If the theoretical foundations for analyzing risks potential in complex phenomena and evaluating them from a resilience viewpoint were gained ②If the advanced information processing techniques for analyzing risks potential in complex phenomena and evaluating them from a resilience viewpoint were gained
	8. Knowledge about problems in reality: Deep knowledge about problems in reality that involve risk and resilience engineering	If the deep knowledge about the diverse problems in reality, to which risk and resilience engineering is applied, and the ability to evaluate research tasks in a variety realms were gained
	9. Ability to have the big picture in mind from a wide perspective: Ability to interpret, from a wide comprehensive perspective, the issues to which risk and resilience engineering is applied	If a wide and comprehensive perspective for interpreting the issues, to which risk and resilience engineering is applied, was gained
	10. Ability to identify and solve problems: Ability to deeply understand the process from identifying to solving a risk-resilience problem using engineering means and produce and develop the concrete means to provide a solution	①If problems are led to concrete solutions using an ingenious method with a view focused on actual social problems and with a wide understanding of the application of specialized skill——Ingenious solution process starting from problem identification ②If the skill of conducting a research project and rounding it up into research outcomes was gained ③If researcher ethics and engineer ethics were well understood and adhered by
	11. Global communication ability: Ability to fulfill one's given role shares, bring out high communication ability and take a leadership position in a research team or research project	①If the presentations about one's research and specialized knowledge are made with sufficient linguistic skill ②If capable of committing oneself to group research activities as an advisor and capable of promoting communication among students that include oneself while taking a leadership position

Guidelines for Assessing Learning Outcomes	The quality of education is assured with the following system of achievement evaluation. Achievements are evaluated for the following six achievement evaluation items. ①Fundamentals of engineering: Basic knowledge and academic skills of researchers or advanced professionals in engineering were gained ②Knowledge of basic theories and related skills: Knowledge of theoretical foundations for risk and resilience analysis and assessment based on fundamentals of engineering, and knowledge of advanced information processing technologies related to risk and resilience analysis and assessment were gained ③Knowledge of issues in the real world: In-depth knowledge of real-world issues covered by risk and resilience engineering was gained ④Broad perspective overlooking circumstance: Ability to see the subject of risk and resilience engineering from a broad and comprehensive perspective was gained ⑤Abilities of problem setting and solving: Ability to understand the process from setting up problems to solving them by engineering means in depth and to devise and develop specific solutions for problems related to risk and resilience were gained ⑥Global communication ability: Ability to fulfill assigned roles and take leadership in a research team or research project with high communication skills was gained Achievements are evaluated by the achievement evaluation board, which is administered with an interview between each student and three or more faculty members twice every academic year. The feedback on the evaluation results are given to students for the use of improving subsequent learning. The evaluation is conducted objectively using an Achievement Evaluation Form (rubric) to determine whether the student has reached a level appropriate for the Doctoral Degree in Engineering in all evaluation categories.

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation items are proven to be met. <Criteria for degree thesis review> 1. The thesis must be the results of the research in which the diploma applicant took the initiative in accordance with research ethics. 2. The research must contain novelty. 3. The usefulness that contributes to make strides in risk and resilience engineering or associated areas must be contained. 4. The dissertation must be appropriately constructed and the content must be correct. (1) The theme of the thesis must be appropriate. (2) Preceding researches are accurately investigated and the positioning of the research must be fully discussed. (3) The purposes of research must be clearly and concretely described. (4) The methods of research must accord with the purposes and be clearly and concretely described. (5) The results must be accurately and clearly drawn and be assured in reliability. (6) Discussion must be logically developed based on results. (7) The conclusion must be clear and provide a description about social significance. (8) Citations must be appropriate. <Criteria for final exam> The evaluation is based on how the question-and-answer session goes for the explanation of the degree thesis and related matters and the results of achievement evaluation. <Level standards required for the degree thesis, review board members, review method and review items, etc.> The evaluation of degree thesis requires the approval of a degree dissertation review board formed by one chief reviewer and four or more sub-reviewers. The reviewers must be doctor's degree holders. The chief reviewer and two or more sub-reviewers must be faculty members of Degree Programs in Systems and Information Engineering. One or more sub-reviewers must be selected from those who do not belong to the Doctoral Program in Risk and Resilience Engineering. Opening a doctoral dissertation review board, the chief reviewer evaluates the dissertation in accordance with the criteria for degree dissertation review and judges the acceptance of the dissertation after having obtained approval of the board. The dissertation passes if approved to be on a doctoral dissertation level in all of the above evaluation items 1 to 4 with the final exam included in the judgment.

Curriculum Policy

To attain the Diploma Policy requirements, the curriculum is organized to cultivate students who possess the advanced skills that can put the results of risks analyzed and evaluated by engineering methods into use to reach for a resilient society, can pass along the outcomes of education and research to the society with a view focused on actual social problems, and possess the research abilities, advanced skills and practical abilities based on deep theoretical foundations.

Curriculum Design Framework	To attain the Diploma Policy requirements, the curriculum places emphasis on the two subjects of special seminars and special researches in the Doctoral Program. In addition, students take other specified lecture subjects to deepen the knowledge about problems in reality by more comprehensively integrating the perspective to the complex social problems that involve risks. Students attain the requirements enumerated in DP by incorporating the learning in these subjects and the research of each student's area of expertise into a doctoral dissertation.
Teaching and Learning Methods	The requirements enumerated in Diploma Policy are attained as follows. 1. “Fundamental engineering ability”, which is covered in almost all of the subjects, is gained through the subjects provided in the Degree Program. In addition, a wider range of learning is possible with Inter-disciplinary Foundation Courses. 2. “Theoretical foundations and associated techniques” which is covered in almost all of the subjects, is gained through the subjects provided in the Degree Program. Particularly, special researches in the Doctoral Program help students gain more deeply the theoretical foundations and information processing techniques for analyzing risks potential in complex phenomena and evaluating them from a resilience viewpoint. 3. “Problems in reality” which is covered in almost all of the subjects, is learned particularly through Major Subjects. Particularly, special seminars in the Doctoral Program, in which students learn and critically appraise research presentations in various realms to gain the knowledge about diverse problems in reality, help students gain this area of ability more deeply. 4. The abilities for “wide perspective”, which are covered in almost all of the subjects, are gained particularly through the subjects taught by faculty members in the Cooperative Graduate School System with companies, research institutes, etc. In addition, Topics in Risk and Resilience Engineering in Doctoral Programs of different areas of expertise and not just one's own area, and the internship subjects taught by faculty members in the Cooperative Graduate School System help students gain this area of ability more deeply.

Teaching and Learning Methods	5. The abilities to “identify and solve problems” are gained through Special Doctoral Research Work, in which each student carries out their respective research with deep investigation under supervisory faculty members, and the internship subjects taught by faculty members in the Cooperative Graduate School System with companies, research institutes, etc. Particularly, Advanced Research help students understand widely the process of identifying problems to solving them ingeniously and gain the skill of conducting a research project and rounding it up into research outcomes. 6. Through special researches in the Doctoral Program, students gain the “global communication” ability, which is the “ability to fulfill one's given role shares, bring out high communication ability and take a leadership position in a research team or research project” . This ability can be more deeply gained through Advanced Group Project Based Learning in Risk and Resilience Engineering, in which students commit themselves to group research activities as an advisor of each group, in “Group Project Based Learning in Risk and Resilience Engineering” , in which students in the Master's Program are divided into groups and assigned to work on a theme. Furthermore, serving as a chairperson in special seminars in the Doctoral Program, the ability to promote communication among students that include oneself while taking a leadership position is cultivated. Those students who pursue to become university faculty members can use these subjects as a PFP (Preparing Future Professionals) program. The “ability to be active in international scenes through their high presentation ability”, which is part of “global communication” , is gained through special seminars in the Doctoral Program, in which students are mandatorily required to make presentations in the foreign language with regard to their research and learning. In addition, this ability can be more deeply gained through special researches in the Doctoral Program, where students carry out their research and present the outcomes at international conferences, etc. under the supervision of supervisory faculty members. The achievement progress of the requirements is periodically checked in accordance with the achievement evaluation scheme described below, and along the degree of achievement, the student receives appropriate advice from the faculty member, who is the achievement evaluation board member responsible for the student.

Admission Policy

Desired Student Profile	We seek candidates who are interested in widely understanding risks and their countermeasures and want to meet the challenge of risk and resilience in elucidating and evaluating problems in reality using their cross-disciplinary ability to have the big picture in mind from an interdisciplinary perspective. We welcome those who possess the basic abilities in the mathematics and information processing skills, which serve as the foundation of engineering, and on the other side, have the desire to improve themselves in the linguistic skill, communications and presentation abilities to be internationally active in the actual world as well as the motivation in passing along their outcomes to the society through industry-academia collaboration, social collaboration, education and research outcomes, etc.
Student Selection Process	To select out enrollments, diverse candidates are sought through the general entrance exam, special entrance exam for adults or other enrollment selection methods. The opportunity of entrance exam is offered multiple times in the same year with the split of the number of persons admitted. For the selection of enrollment, candidates are required to take an oral exam which includes a presentation, and questions and answers. In addition, within the special entrance exam for adults, the Program offers a system of both day and night courses to allow working individuals to take courses at the Tokyo campus while keeping their jobs (day and night courses program for working individuals). – The internal assessment selection selects those who are expected to complete the Master's Program in Risk and Resilience Engineering, who possess especially high fundamental abilities and research abilities. – In the general entrance exam, the potential students to be selected out must possess certain fundamental abilities and research abilities. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to fundamental abilities and research abilities.

Learning Support Framework

Academic Support	(1) Advanced Seminar in Risk and Resilience Engineering In these exercises, students meet weekly, with designated students delivering research presentations or literature reviews, followed by Q&A to deepen learning. Discussions proceed from interdisciplinary perspectives that transcend individual specializations, cultivating the broad outlook required in the field of risk and resilience and putting into practice instruction that emphasizes real-world relevance. (2) System for Enrolling in a Broad Range of Common Subjects across the Degree Program Groups The Risk and Resilience Engineering Degree Program has established a system that enables students to systematically take diverse common-subject courses offered across the degree program groups. Specifically, students may choose courses—according to their interests—related to Social Engineering, Service Engineering, Risk and Resilience Engineering, Computer Science and Engineering, Intelligent Systems, Structural and Energy Engineering, and Empowerment Informatics. Through this interdisciplinary curriculum, students build study plans aligned with their interests while cultivating a broad perspective and cross-disciplinary problem-solving skills.
Opportunities for Peer Interaction	(1) Advanced Group Project Based Learning in Risk and Resilience Engineering This doctoral-level course, Advanced Group Project Based Learning in Risk and Resilience Engineering, aims to cultivate supervisory skills by having doctoral students participate as advisors to student groups in the Master's required course, Group Project Based Learning in Risk and Resilience Engineering. By guiding the entire process—from problem formulation and project management to synthesizing outcomes and delivering presentations—students systematically acquire the leadership competences expected of research supervisors. (2) Collaboration among Teaching Assistants within the Degree Program Within the Degree Program, the Teaching Assistants (TAs) who support the cluster of required courses are organized as a unified unit called “GP-TA”, and a collaborative framework that includes faculty has been established. Specifically, regular meetings led by a coordinating faculty member are used to share approaches to course support and operational considerations, and to clarify role allocation and communication channels. GP-TAs also take the lead in sharing operational know-how and providing mutual feedback, and they participate in the planning and operation of the Risk Engineering Research Meetings, thereby contributing to improving the overall quality of educational activities across the program. These activities also serve as a forum for consultation and interaction among TAs and support smooth collaboration in a multinational cohort. As a result, stronger peer effects among students are expected, along with higher motivation to learn, more consistent quality in educational support, and improvements in the quality of each student's research.

Opportunities for Student–Faculty Interaction	(1) Advanced Seminar in Risk and Resilience Engineering In these exercises, students prepare their presentation materials under the supervision of their academic advisor before presenting. Multiple faculty members—not necessarily from the same field—then attend to provide evaluations and advice. This process introduces multifaceted perspectives that are not confined to a single discipline and enables diverse viewpoints to be incorporated into the research, ultimately leading to further refinement of the work. (2) Risk Engineering Research Meetings (RERM) The Degree Program has continuously held the Risk Engineering Research Meetings since 2002, originating in the former Department of Risk Engineering, and as of 2025 has hosted more than 230 sessions. At each meeting, distinguished and up-and-coming researchers and practitioners are invited, providing students with opportunities to encounter the latest research trends and societal issues and to deepen their understanding and discussion of risk assessment in an increasingly complex society. (3) Regular Faculty-Student Liaison Meetings To identify students' questions and requests regarding educational and research facilities, curriculum, assessment, and career development and job search, and to provide a forum for exchanging opinions and information between students and faculty, liaison meetings are held twice a year (spring and fall). These meetings help improve the educational environment and enhance students' motivation to learn. (4) Internship Opportunities through the Resilience Research and Education Promotion Consortium The Degree Program provides internship opportunities at institutions participating in the Consortium, where students gain practical experience under the guidance of researchers and faculty members with specialized knowledge and skills, affiliated with the Cooperative Graduate School system. Through this experience, which bridges theory and practice, students strengthen both their research capabilities and their practical competence.

Approaches to Assuring and Enhancing Educational Quality

(1) Achievment Evaluation System

- The achievement evaluation system is used to assess students' learning outcomes and to verify the validity of the curriculum and the appropriateness of instruction.
- An achievement evaluation board is established to ensure the quality of education and to strengthen the framework for achieving the objectives of the degree program through continuous review and improvement of all educational activities.
- This achievement evaluation system is improved at all times in accordance with the PDCA cycle defined below.

Plan: Plan an achievement evaluation system and draw up implementation details, standards, etc.

Do: Evaluate the achievements of each student individually by multiple faculty members.

Check: Cross-check how the achievement evaluation system is formulated against how it is actually used.

Act: Improve detected problems in the system or usage.

(2) Workshops for Newly Appointed Faculty

The FD (Faculty Development) Committee organizes workshops for new faculty members upon appointment. These workshops include explanations of the educational philosophy by the program leader and introduce unique educational improvement measures (e.g., achievement evaluation) of the Risk and Resilience Engineering Degree Program. Participants also bring their PCs to learn how to use internal university platforms (TIPS, RISS, FAIR, TWINS, etc.) with hands-on access support.

(3) Implementation and Utilization of Course Evaluations

The FD Committee conducts course evaluations using TWINS, aggregates the results, and shares them with all faculty members. This allows faculty to appropriately understand students' opinions regarding course management and to use this feedback for improving their teaching practices.

Doctoral Program in Computer Science

Doctor of Philosophy in Engineering

Program Educational Objectives

The Doctoral Program in Computer Science organizes its education and research to cultivate human resources with the deep expertise in diverse areas of computer science and with the knowledge, specialized research ability and practical work ability that work on an international level. Graduates through the program should possess both ingenuity and flexibility and can use all of these to contribute to solving the problems in a specific field by informatics approaches.

Graduate Profile	To develop researchers and highly skilled professionals who possesses specialized knowledge and leading-edge engineering abilities in a wide range of areas in computer science as well as the high communication and presentation abilities for his or her area of expertise and the advanced abilities for carrying out research and development and can apply these knowledge and abilities to lead various problems in the real world to reach solutions.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Research ability: Ability to identify new tasks in new areas in one's own right, then independently draw up a plan to solve them and steadily execute it with the backup of leading-edge advanced specialized knowledge and skills in a wide range of areas in computer science	①Whether new problems are identified in the areas of computer science, and whether appropriate research tasks are set up for them ②Whether advanced specialized skills for conducting research and development in the areas of computer science are gained ③Whether research plans are drawn up for new types of problems in the areas of computer science and steadily carried out with effective outcomes ④Whether English is used in the presentations and discussions of research outcomes in international scenes.
	7. Specialized knowledge: Leading-edge advanced specialized knowledge and skills in a wide range of areas in computer science, and the ability to use them	①Whether the specialized knowledge in the areas of systems and information engineering was gained ②Whether the leading-edge specialized knowledge and skills in the areas of computer science were gained ③Whether the specialized knowledge and skills that one possesses are appropriately used
	8. Ethical view: Refined ethical view in a wide range of areas in computer science	①Whether researcher ethics and engineer ethics were understood and adhered by. ②Whether human research ethics as well as formalities and/or procedures necessary for research were understood. ③Whether one has deep interests and knowledge about ethical problems in the areas of computer science.
Guidelines for Assessing Learning Outcomes	– Learning outcomes are evaluated based on the “Research in Computer Science”, “Computer Science Research Seminar”, and “achievement evaluation sheet”. – During April of the planned completion year, students check the achievement evaluation sheet together with supervisors to check the achievements at that point of time and review the learning plan. – In the required subjects “Research in Computer Science” and “Computer Science Research Seminar”, students have their research progress checked by supervisors. – In the final exam, the achievements are examined in accordance with the separately defined final thesis examination criteria, and the review board checks the achievement evaluation sheet to evaluate their learning outcomes.	

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation standards are met. <Criteria for degree thesis review> 1. Whether the dissertation provides a clear description of the significance and positioning of the research based on the understanding of international research trends and previous studies in the areas of computer science 2. Whether the novelty, creativity and applied values that contribute to make academic and social strides in the areas of computer science are sufficiently contained in the research outcomes well enough to be presented as an academic paper 3. Whether the research results are adequately discussed and sufficiently verified in reliability 4. Whether research backgrounds, purposes, methods, results, discussions and the line of reasoning are developed logically and demonstratively 5. Whether the dissertation is organized in a format and style of presentation appropriate as a doctoral dissertation with sentence expressions appropriately used and literatures, graphics, etc. correctly cited with proper referencing. <Criteria for final exam> 【Research ability】Whether leading-edge specialized knowledge and skills in a wide range of areas in computer science were gained 【Research ability】Whether a new area of tasks was identified in one's own right, and whether a plan to solve them was drawn up and executed steadily 【Specialized knowledge】Whether the advanced specialized knowledge and skills in a wide range of areas in computer science, and the ability to use them were gained 【Ethical view】Whether the refined ethical view in a wide range of areas in computer science was gained 【Communication competence】Whether the ability to express things accurately and clearly and make advanced debates of expertise was gained <Level standards required for the degree thesis, review board members, review method and review items, etc.> A doctoral dissertation review board must be formed by five or more reviewers, with at least three being professors. The chief reviewer and two or more sub-reviewers must be faculty members of the Degree Programs in Systems and Information Engineering. The chief reviewer must be the professor (research supervisor). Note that the chief reviewer and sub-reviewers must be not formed by faculty members only from the Program in Computer Science but must include at least one external reviewer or reviewer from other programs. The chief reviewer opens a doctoral dissertation review board, and the board reviews the dissertation in accordance with the criteria for degree dissertation review to judge the acceptance of the dissertation. The dissertation passes if approved to be on a doctoral dissertation level in all of the above evaluation items 1 to 5 with the final (oral) exam included in the judgement.

Curriculum Policy

The curriculum is organized to provide students with the specialized knowledge and research ability in mathematical informatics engineering, intelligence software, software systems, computer engineering, media engineering and intelligence/information engineering, which cover from the basal technologies intended for the generation, processing and utilization of “information”, such as computers, networks and security, to the applied technologies, such as web applications, user interfaces, speech recognition/image analysis and high-performance computing. In addition, students gain a wide range of basic knowledge and ethical view in the areas of engineering. The Program also offers research supervision toward the creation of a doctoral dissertation and thereby cultivates human resources who can identify and solve problems from a wide perspective extending over multiple areas in science and technology.

Curriculum Design Framework	– The Doctoral Program in Computer Science organizes “required subjects” and “Major Subjects”. – With “required subjects”, students are engaged in research activities under the advice of supervisors and conduct surveys, etc. of associated areas. – With these research activities, students gain the Knowledge application competence, Management competence, Communication competence, teamwork ability, fundamental engineering ability, the Specialized knowledge in the areas of computer science, the Research ability for the area of expertise, presentation ability, and Ethical view. – With “research seminar”, students gain communication skills, Competence in Internationality and develop presentation abilities though research presentations and debates in English. – With “Research Internship classes”, students gain Management competence, Communication competence, Leadership competence, the Internationality competence, the Specialized knowledge in the areas of computer science, the Research ability for the area of expertise and presentation ability by being engaged in research activities at other universities, laboratories, etc. – Deep specialized knowledge and engineering abilities in diverse areas are gained through “Graduate General Education Courses”, “ Interdisciplinary Foundation Courses”, “Degree Programs’ Common Courses”, etc. – Management competence is gained through TA (Teaching Assistant) and TF (Teaching Fellow) activities, supervising the research activities of junior students in their laboratories.

Teaching and Learning Methods	– Each student sets up research tasks in their respective areas of expertise and proceeds with conducting research under the advice of supervisors. – With the research seminar, each student makes a presentation of interim results of their research in English and receives feedback from participating faculty members and students. Through this exercise, students get their research brushed up and improve their skills of presenting and debating in English. – To show research findings and to hone the skills of writing papers and making presentations, students publish their research outcomes to a domestic or overseas peerreviewed journal or an international peer-reviewed conference. – “Research Internship classes” , through which students are engaged in research work at a company, university, research institute, etc., gives students opportunities to gain research experience from different environments while improving their communications skills, etc.

Admission Policy

Desired Student Profile	The Doctoral Program in Computer Science widely seeks candidates from inside and outside Japan. The candidates should possess the specialized knowledge and engineering skills in the areas of information science, and have a great interest in any of the problem realms in engineering science and a keen desire to gain the specialized knowledge, engineering skills, specialized research and development abilities and practical abilities.
Student Selection Process	– To accept outstanding and diverse human resources inside and outside Tsukuba, candidates are solicited through multiple entrance exam channels including internal assessment selection, general entrance exam and special selection of working students at different timings and different numbers of students admitted. – Irrespective of the type of entrance exam, an oral exam is mandatory. – The internal assessment selection selects those who are expected to complete the Master's Program in Computer Science and who possess high fundamental abilities and academic research abilities. – In the general entrance exam, the potential students to be selected out must possess certain fundamental abilities and research abilities. – The special selection for working students evaluates the achievements and experiences as an adult member of society in addition to fundamental abilities and academic research abilities.

Learning Support Framework

Academic Support	– The supervisors will motive students to study by creating a study plan at the time of enrollment using an achievement evaluation sheet and reviewing it as necessary.

Opportunities for Peer Interaction	– Promote interaction among students through a tutoring system for international students. – Promote interaction among students by providing opportunities for discussion among students, as well as with faculty members, during seminars. – Provide opportunities for interaction among students through TA (Teaching Assistant) activities and research guidance for junior students in laboratories.
Opportunities for Student–Faculty Interaction	– Provide opportunities for interaction with faculty members by organizing regular student-faculty liaison meetings. – Promote interaction with faculty members through participation in small seminars in laboratories and research projects led by faculty members. – Provide opportunities for interaction with faculty members by assisting in classes through TA (Teaching Assistant) activities.

Approaches to Assuring and Enhancing Educational Quality

– Conduct course evaluation surveys and share the results within the degree program so that faculty members can reflect their teaching, thereby ensure and improve the quality of education.
– In addition to university-wide Faculty Development (FD) lectures and workshops, organize independent FD lectures and workshops on specific topics as needed.

Doctoral Program in Intelligent and Mechanical Interaction Systems

■ Doctor of Philosophy in Engineering

Program Educational Objectives

The Doctoral Program in Intelligent and Mechanical Interaction Systems investigates engineering systems based on mathematical models representing the complex phenomena of humans, society, and nature, as well as theories in various fields such as mathematics, physics, and informatics working in harmony to contribute to the real world. This program cultivates high-level researchers and professionals capable of discovering and solving relevant problems from a broad perspective. Such individuals are characterized for possessing extensive knowledge, a robust ethical view, and advanced research skills in the field of engineering.

Graduate Profile	Students develop advanced knowledge and skills in the field of Intelligent and Mechanical Interaction Systems, in addition to a wide range of engineering knowledge, academic abilities, and an ethical perspective appropriate for high-level researchers and professionals in the field of engineering. Therefore, students will be able to contribute to the development of academia and society by conducting cutting-edge research and producing original results that target and solve relevant problems in the field of engineering.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Research skills: The ability to set cutting-edge research themes in the field of Intelligent and Mechanical Interaction Systems, conduct the research independently, produce original results, and present them internationally.	①To be able to set a cutting-edge research topic in the field of Intelligent and Mechanical Interaction Systems and develop advanced skills for carrying out the research. ②To be able to carry out cutting-edge research and produce original outcomes in the field of Intelligent and Mechanical Interaction Systems. ③To be able to present and discuss research outcomes in English at international conferences.
	7. Specialized knowledge skills: The ability to develop the academic skills suitable for high-level researchers and professionals in the field of engineering, in addition to advanced knowledge and operational capability in the areas of Intelligent and Mechanical Interaction Systems	①To possess a wide range of expertise in the field of Systems and Information Engineering. ②To acquire advanced and specialized knowledge in the areas of Intelligent and Mechanical Interaction Systems, and to apply such knowledge for research and problem-solving.
	8. Ethical skills: Ability to build an ethical and psychological view appropriate for high-level researchers and professionals in the field of engineering.	①To fully understand and comply with research and engineering ethics. ②To obtain ethical knowledge of research involving human subjects and fully understand and implement the procedures necessary for such research.

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement evaluation based on the Achievement Evaluation Criteria Table, in order to objectively assess and verify the level of competence acquisition in accordance with the Diploma Policy at each stage. The stages and methods of the achievement evaluation are as follows. – In Research in Intelligent and Mechanical Interaction Systems A, students will present their research outcomes, with performance evaluated based on the clarity, rigor and depth of their presentations. – In Research in Intelligent and Mechanical Interaction Systems B, students will present the results of their thesis dissertation for evaluation. Students who have published peer-reviewed papers may apply for early completion and undergo screening by the evaluation committee. – In Research in Intelligent and Mechanical Interaction Systems C, students participate in a preliminary evaluation of their thesis dissertation. – Achievement Evaluation is confirmed by the student's supervisor thorough review of the student's Achievement Evaluation self-check. – To be awarded the degree, students must pass a final examination of the Achievement Evaluation, conducted by the Achievement Review Board, which verifies the evaluation plan prepared by the supervisor in accordance with the Standards of Achievement Level Assessment. <Criteria for the final examination> 1. (Generic competences) The student should have acquired knowledge creation skills, management skills, communication skills, leadership skills, and international skills appropriate for a graduate of the Doctoral Program in Intelligent and Mechanical Interaction Systems. 2. (Research ability) The student should be able to demonstrate advanced research skills in the field of Intelligent and Mechanical Interaction Systems. They should be able to set up cutting-edge research topics independently, carry out the research, produce original outcomes, and present these results internationally. 3. (Specialized knowledge) Th e student should have obtained knowledge and academic skills appropriate for highlevel researchers or professionals in the area of engineering; and specialized knowledge and operational ability in the field of Intelligent and Mechanical Interaction Systems. 4. (Ethical view) Th e student should have acquired an ethical perspective and ethical knowledge appropriate for high-level researchers and professionals in the area of engineering; and profound ethical reasoning related to the field of Intelligent and Mechanical Interaction Systems.

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if it satisfies all of the following criteria. <Criteria for thesis examination> 1. The dissertation should provide a clear description of the significance and positioning of the research in the engineering field; and should be based on the understanding of international research trends and previous research in related fields. 2. The dissertation should contain original research outcomes that contribute to the development of the engineering field and should be suitable for publication in an academic journal paper. 3. The reliability of the research results should be verified in detail. 4. The discussion of the research results should be reasonable, and the conclusions should be based on objective evidence. 5. The background, purpose, methods, results, discussion, and conclusions of the dissertation should be summarized and organized in a format suitable for a doctoral thesis. <Required standards for thesis submission, the system of review board members, evaluation method, and review items> The doctoral dissertation review board shall consist of one chief reviewer and at least four sub-reviewers. The chief reviewer must be a faculty member of the degree program in charge of supervising the research, and at least two sub-reviewers must be members of the graduate school faculty. The review board must not be formed exclusively by faculty members from the degree program in Intelligent and Mechanical Interaction Systems. It should include at least one reviewer from a different category comprising other degree programs, different research groups, and external reviewers. The doctoral dissertation review board evaluates the thesis following the criteria for degree dissertation to provide a pass/fail judgment. The dissertation will be approved when it is deemed to have reached a doctoral dissertation level regarding the five evaluation items described above, including an oral exam in the judgment.

Curriculum Policy

The curriculum is organized to cultivate researchers able to discover and solve problems relevant to our society from a broad perspective. Courses are designed to cover areas of system design, human-machine-robot systems, measurement and control engineering, communication systems, as well as a wide range of basic knowledge and ethical perspective in the areas of engineering, science, and technology.

Curriculum Design Framework	The primary goal of the curriculum is to develop advanced research abilities in the field of Intelligent and Mechanical Interaction Systems, including general and specialized knowledge, ethical view, and research competences. The curriculum is supplemented, if necessary, by Degree Programs' Common Courses, Interdisciplinary Foundation Courses, and Graduate General Education Courses. – Students acquire the Competence of knowledge creation mainly through Special Research Courses including: Research in Intelligent and Mechanical Interaction Systems A, B, C, Research Paper Presentation Workshops (Research Paper Presentation Workshop in Intelligent and Mechanical Interaction Systems I, II and International Conference Paper Presentation Workshop in Intelligent and Mechanical Interaction Systems), and Collaboratory Research Workshops (Collaboratory Research Workshop in Intelligent and Mechanical Interaction Systems III, IV). – Management skills are obtained through Research in Intelligent and Mechanical Interaction Systems courses and Research Proposal Writing Workshops (Research Proposal Writing Workshop in Intelligent and Mechanical Interaction Systems III, IV). – Communication skills are trained through Research in Intelligent and Mechanical Interaction Systems courses, Research Proposal Writing Workshops, and presentation at academic conferences. – Leadership skills are gained mainly through Research in Intelligent and Mechanical Interaction Systems courses, Research Paper Presentation Workshops, Collaboratory Research Workshops, Research Proposal Writing Workshops, teaching assistant experience, and participation in extracurricular activities. – An international perspective is achieved through Research in Intelligent and Mechanical Interaction Systems courses, English workshops, and International Conference Paper Presentation Workshops. – Research skills are obtained through Research in Intelligent and Mechanical Interaction Systems courses, Research Paper Presentation Workshops, and Research Proposal Writing Workshops. – Specialized knowledge is accomplished through Research in Intelligent and Mechanical Interaction Systems courses, Research Paper Presentation Workshops, and Collaboratory Research Workshops. – An ethical view is gained mainly through Research in Intelligent and Mechanical Interaction Systems courses and e-learning programs on ethics.

Teaching and Learning Methods	– After enrollment, students will be guided by their supervisors to identify socially and academically relevant research problems and think about how to solve them on their own. – Each student will learn independently more specialized knowledge and skills while working on their research tasks. In addition, by taking advantage of the multiple supervisor system students will be able to receive guidance from sub-supervisors of different areas of expertise beyond the boundaries of the degree program and develop their abilities to analyze problems from a broader perspective. – Students are instructed to present the obtained research findings at seminars and academic conferences and publish research papers in academic journals. Evaluation of the students' performance will provide hints to improve and further develop their research. – Concurrently, each student conducts an Achievement Evaluation self-check periodically. Therefore, students are encouraged to acquire the lacking knowledge or skills to complete the program successfully.

Admission Policy

Desired Student Profile	We seek candidates who possess mathematical skills, English language skills, and mathematical thinking ability necessary for developing cutting-edge research. Students are expected to be able to acquire research skills, specialized knowledge, and the ethical view needed to contribute to academia and society as high-level researchers and professionals in the field of Intelligent and Mechanical Interaction Systems.
Student Selection Process	A variety of candidates are selected through internal admission selection, general entrance examination, and special entrance examination for working candidates. An oral examination is required regardless of the examination category. – The internal admission selection process allows candidates who are expected to complete the Master's Program in Intelligent and Mechanical Interaction Systems to proceed to the doctoral program. Such candidates are expected to include those who possess strong fundamental abilities and research skills and are expected to be employed by the Research Fellowship for Young Scientists by the Japan Society for the Promotion of Science (DC1 or DC2) and those suitable for early completion of the doctoral program. – The general entrance examination selection process allows candidates who possess a certain level of research skills and complementary abilities to join the doctoral program. Those candidates are expected to complete the program within the standard period.

Student Selection Process	– The special entrance examination for working candidates allows working applicants to join the doctoral program. This process evaluates the achievements and experience acquired as a functional member of society in addition to research skills and complementary abilities. This examination is conducted according to the Admission Policy and to the candidate's personal plan, which provides different alternatives such as completing the program while working, using the extension system which allows completing the course beyond the standard period to finish the program, or using the early completion program which allows finishing the program in one year.

Learning Support Framework

Academic Support	To support students' independent and advanced learning in the Doctoral Program, multiple initiatives are implemented. The Achievement Evaluation self-check allows students to visualize their research progress and learning outcomes, enabling academic supervisors to provide targeted guidance. The Global Multi-Mentor System (GMMS) offers opportunities for interaction with external researchers, promoting multifaceted critique and discussion that advance the quality and rigor of student's research. The “Learning × Career” Hybrid Support System (LCHS) fosters students' motivation for research by facilitating exchanges with corporate researchers and alumni, while also supporting the development of specialized career paths alongside their Doctoral Program.
Opportunities for Peer Interaction	In the Doctoral Program, interaction among students is actively promoted to enhance learning motivation and elevate the quality of research. In graduate seminars, students present their research, engage in discussions with peers, and cultivate communication skills and critical thinking. Both the Global Multi-Mentor System (GMMS) and the “Learning × Career” Hybrid Support System (LCHS) are designed to engage multiple students simultaneously, fostering information exchange and mutual intellectual stimulation. Collectively, these activities strenghten peer effects, contributing to a more dynamic and collaborative research environment.
Opportunities for Student–Faculty Interaction	At the University of Tsukuba, structured opportunities for interaction with faculty members are provided to support the research activities of Doctoral Program students. In graduate seminars, students present their research outcomes and receive feedback and questions from faculty, thereby refining the focus, methodology, and logical structure of their studies. In group projects conducted in the Laboratory Work course, students collaborate under faculty supervision to address research tasks and develop practical research skills. The Graduate School Roundtable provides a forum for open exchange of opinions between faculty and students, facilitating consultations on both research activities and career planning. Furthermore, through the Global Multi-Mentor System (GMMS) and the “Learning × Career” Hybrid Support System (LCHS), faculty collaborate with external researchers and industry professionals to provide students with multidimensional guidance and mentorship.

Approaches to Assuring and Enhancing Educational Quality

To ensure the quality of education in the Doctoral Program and promote continuous improvement, multiple systems and mechanisms have been established. For newly appointed faculty members, Faculty Development (FD) programs provide support for enhancing teaching abilities, including guidance on educational content and instructional methods. In addition, regular faculty training sessions including FD focused on achievement evaluation, are conducted to further elevate the quality of educational activities. The Achievement Evaluation Committee evaluates students' learning outcomes and examines both the validity of the curriculum and the appropriateness of academic supervision. Furthermore, a PDCA Committee continuously monitors and improves all educational activities, incorporating feedback provided by industry representatives, obtained during poster presentation sessions. Through these coordinated efforts, the quality of education is maintained, and the framework for achieving the program's learning objectives is strengthened.

Doctoral Program in Engineering Mechanics and Energy

■ Doctor of Philosophy in Engineering

Program Educational Objectives

The Doctoral Program in Engineering Mechanics and Energy, which helps students possess advanced specialized knowledge in engineering areas of machinery, architecture, social infrastructure, energy, aerospace, etc. as well as the ability to take a multidisciplinary approach to associated surrounding areas and to internationally provide information, cultivates university faculty members, researchers and highly specialized professionals who play a role in taking the lead in the society by administering and operating research projects appropriately and can appropriately supervise potential younger talents learning in the areas of engineering.

Graduate Profile	He or she should possess a wide range of knowledge in the areas of engineering such as machinery, architecture, social infrastructure, energy and aerospace, set their sights to be an engineer or researcher who has the fertile minds to contribute to mankind's strides, take a multidisciplinary approach to associated surrounding areas while possessing advanced specialized knowledge, and be capable of take the lead in being active in the areas.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Research ability: Ability to extract leading-edge problems in the areas of engineering mechanics and energy and propose and carry out solution methods	①If leading-edge research tasks in the areas of engineering mechanics and energy are set up independently and appropriately ②If the basic and applied skills for conducting leading-edge research in the areas of engineering mechanics and energy were gained ③ If leading-edge research in the areas of engineering mechanics and energy is carried out independently and successfully
	7. Specialized knowledge: Basic academic abilities, leading-edge advanced specialized knowledge and command of them in the areas of engineering mechanics and energy	①If the basic specialized knowledge in the areas of systems and information engineering was gained ②If leading-edge advanced specialized knowledge and command of it in the areas of engineering mechanics and energy were gained
	8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of engineering	If researcher ethics and engineer ethics were understood and adhered by
Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted through achievement evaluation based on the Achievement Evaluation Sheet, allowing an objective evaluation of the extent to which students have acquired the competences specified in the Diploma Policy. The learning outcomes related to the master's thesis are evaluated at the following stages: – In Seminar in Engineering Mechanics and Energy, students present the research and receive evaluation and feedback. – In the preliminary thesis examination, the student presents an overview of their thesis and receives evaluation and feedback. – In both the spring and fall semesters, Achievement Evaluation Sheet is confirmed and evaluated. – During the thesis examination and final defense, students present the content of their thesis and undergo a degree evaluation, while also being evaluated using the Achievement Evaluation Sheet.	

Evaluation Criteria for Degree Theses/ Dissertations	A thesis is accepted if all of the following evaluation items are proven to be met. <Criteria for degree thesis review> 1. With the review of the research trends and preceding researches in the associated areas, the significance and positioning of the research must be clarified. 2. Original research findings that contribute to engineering strides must be contained. 3. Research findings must be sufficiently verified in reliability. 4. The conclusion of the research must be based on objective evidence and rational deduction. 5. All of the above items must be incorporated with an appropriate thesis structure and unequivocal descriptions. In addition, the thesis must be accompanied by a theme that accurately explains the thesis content. <Criteria for final exam> The student is asked to explain his or her degree thesis content, and at his or her explanation, the above criteria 1 to 5 must be confirmed to be met. In addition, the student must have gained the following abilities, knowledge, etc. 1. Competence of knowledge creation: Ability to create new knowledge to be able to contribute to future society 2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective 3. Communication competence: Ability to express the nature of academic findings positively and clearly 4. Leadership competence: Ability to accomplish objectives under one's leadership 5. Competence in Internationality: High level of awareness and motivation to be internationally active and contribute to international society 6. Research ability: Ability to extract leading-edge problems in the areas of engineering mechanics and energy and propose and carry out solution methods 7. Specialized knowledge: Basic academic abilities, leading-edge advanced specialized knowledge and command of them in the areas of engineering mechanics and energy 8. Ethical view: Ethical view and ethical knowledge appropriate for highly specialized professionals in the areas of engineering

Evaluation Criteria for Degree Theses/ Dissertations	<Level standards required for the degree thesis, review board members, review method and review items, etc.> The examiners of the Doctoral Dissertation Review Committee shall consist of one main examiner and at least three associate examiners; the main examiner shall be the research advisor of this research group, and at least two associate examiners shall be the faculty members in charge of the graduate school. Note that not all of the examiners for the main and associate examiners shall be faculty members of the Degree Program in Engineering Mechanics and Energy, but at least one examiner from any of the following categories shall be added: other degree programs, other research groups, or external examiners. The chief reviewer opens a doctoral dissertation review board, and the board reviews the dissertation in accordance with the criteria for degree dissertation review to judge the acceptance of the dissertation. The dissertation passes if approved to be on a doctoral dissertation level in all of the above evaluation items with the final (oral) exam included in the judgment.

Curriculum Policy

The curriculum is organized with the objective of fulfilling the Diploma Policy (DP). More specifically, students deeply learn the foundations and leading-edge technologies in engineering areas of machinery, architecture, social infrastructure, energy, aerospace, etc. and also learn widely in multiple areas in science and technology so that the Program can cultivate human resources who have the big picture in mind that an ordinary vertically-sectioning engineering major would not give.

Curriculum Design Framework	The required subjects are organized to develop advanced research ability for engineering mechanics and energy as the first objective of the curriculum. In addition to Major Subjects, students are required to earn 2 credits or more from Degree Programs' Common Courses, subjects offered in other Degree Programs, Inter-disciplinary Foundation Courses and Graduate General Education Courses to gain a wider range of knowledge and research ability. The required subjects are organized to cultivate presentation and communication abilities and a wide perspective. Students attain the requirements enumerated in DP by incorporating the learning in these subjects and the research of each student's area of expertise into a doctoral dissertation. In addition, the opportunities to serve as a teaching assistant of lectures in the Master's Program or Colleges are actively offered to gain experience to supervise potential younger talents.

Curriculum Design Framework	(Generic knowledge and ability) – Competence of knowledge creation is gained through Major Subjects, special researches, special seminars, doctoral dissertation creation, and academic conference presentations in Degree Programs' Common Courses and Program subjects, etc. – Management competence is gained through special researches, special seminars, achievement self-check, drawing up doctoral dissertation research plans, etc. – Communication competence is gained through special researches, special seminars, internships, academic conference presentations, poster presentations, etc. – Leadership competence is gained through special researches, special seminars, internships, teaching assistant (graduate school seminars, etc.) experience, project participation experience, laboratory activities, etc. – Competence in Internationality is gained through special researches, special seminars, internships, EME international seminar series, joint research with foreigners (including international students), international conference presentations, English research paper publication, etc. (Specialized knowledge and ability) – Research ability is gained through special seminars, special researches, academic conference presentations, research paper publication, doctoral dissertation, etc. – Advanced knowledge in the area of expertise is gained through specialized subjects in Degree Programs' Common Courses and Program subjects, academic conference presentations, research paper publication, doctoral dissertation, etc. – A cross-disciplinary point of view is gained through Degree Programs' Common Courses, special seminars, special researches, academic conference presentations, etc. – The ability to extract problems and propose solution methods is gained through special researches, special seminars, internships, project participation experience, laboratory activities, etc. – The ability to transmit outcomes inside and outside Japan is gained through special researches, special seminars, internships, joint research with foreigners (including international students), international conference presentations, English research paper publication, etc. – The ability to administer and operate research projects is gained through special researches, special seminars, internships, project participation experience, laboratory activities, etc. – Ethical view is gained through special seminars, special researches, e-learning for ethics, etc.
Teaching and Learning Methods	– Students learn in accordance with the curriculum model for subjects. – Students set up research tasks in each area of expertise and proceed with a doctoral dissertation research under the advice of supervisory faculty members. – Students present obtained research findings at seminars, academic conferences, etc. Being evaluated in those opportunities, students get hints to improve or develop their research.

Admission Policy

Desired Student Profile	We seek potential engineers or researchers with the fertile minds to contribute to mankind's strides and with the goal to actively take the lead in relevant areas, who have a master's degree or have the prospect of earning it, possess the sufficient academic abilities in the areas associated with engineering mechanics and energy, and have an interest in machinery, architecture, social infrastructure, energy, aerospace, and such other engineering areas.
Student Selection Process	The entrance exams are designed to be convenient for those who graduated from other universities, working individuals and international students so that the Program actively accepts outstanding human resources outside Tsukuba. In the general entrance exam and special entrance exam for adults, candidates make a presentation about the content of research that they have conducted so far and also about the future research plan, and then are asked questions about associated matters. – The internal assessment selection selects those who are expected to complete the Master's Program in Engineering Mechanics and Energy, who possess especially high fundamental abilities and research abilities. – The general entrance exam selects those who possess the basic academic abilities and research abilities that enable the completion of a master's degree program in engineering with honors. – The special entrance exam for adults evaluates the achievements and experiences as an adult member of society in addition to the above basic academic abilities and research abilities.

Learning Support Framework

Academic Support	The supervisror provides both laboratory-based activities and individual guidance, consistently monitoring the student's progress. The co-supervisors meet with the student in both the spring and fall semesters to receive reports and provide advice regarding course enrollment plans, research plans and their progress, as well as career paths (mainly job-hunting). In these meetings, the student presents Achievement Evaluation Sheet and Course and Research Plan Sheet, thereby objectifying their own situation before entering into the discussion.
Opportunities for Peer Interaction	Students make research presentations and engage in question-and-answer sessions during Daigakuin Seminar, thereby gaining an understanding of the research activities undertaken by their peers while also receiving mutual feedback and critique. A student-faculty meeting is held for all students in the degree program, providing a forum for sharing common awareness of issues and improvements regarding learning progress and student life. Many students also serve as teaching assistants, through which they not only provide guidance to course participants but also gain opportunities to interact with students from other laboratories.

Opportunities for Student–Faculty Interaction	The supervisor conducts both laboratory-based activities and individual guidance, maintaining continuous oversight of each student's progress. The co-supervisors meet with students in the spring and fall semesters to receive reports and provide advice on course enrollment plans, research plans and their progress, as well as career paths (primarily job-hunting). In addition, a student-faculty meeting is held for all students in the degree program, where opinions are exchanged on lectures, research, student life, and related matters.

Approaches to Assuring and Enhancing Educational Quality

The PDCA Committee verifies the implementation status of confirmation and feedback from their supervisor and co-supervisors, and monitors to ensure that both supervisors and students are carrying them out properly. Evidence supporting the Achievement Evaluation Sheet and course grade assessments are collected and stored, and are utilized for improving course content, syllabi, and achievement assessment methods. Appropriate measures are also taken in response to requests raised by students at the student-faculty meeting.

Doctoral Program in Life Science Innovation (Bioinformatics)

■ Doctor of Philosophy in Bioinformatics

Program Educational Objectives

The Doctoral Program in Life Science Innovation cultivates highly specialized professionals or researchers who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, produce internationally highly appraised research outcomes, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	The Doctoral Program cultivates “researchers and highly specialized professionals who can produce research outcomes that work on a high international level and lead to making innovations in bioinformatics” using not only the deep bioinformatics knowledge and skills gained in the Master's Program but also a wide range of knowledge in the associated areas.

Diploma Policy

The degree of Doctor of Philosophy in Bioinformatics is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Innovation ability: Ability to make innovations in the areas of life science.	①If there is the awareness and motivation to create new knowledge and pass it along to the society in the areas of life science ②If the research techniques and reasoning skills for the theory and practice that lead to innovation creation in the areas of life science were gained ③ If issues that have not been revealed in bioinformatics were identified and solved ④ If there is the motivation to identify and solve cross-disciplinary research tasks in cooperation with researchers from different areas and not just one's own area
	7. Specialized knowledge: Leading-edge knowledge in the area of expertise	①If leading-edge specialized knowledge about bioinformatics was gained ②If a research plan for solving unsolved issues was drawn up based on gained specialized knowledge
	8. Advanced practical English: Command of English sufficient for performing various activities involving research in the international society	①If the presentation ability that can impact the international society when research outcomes are reported or shared in English was gained ②If the English proficiency and knowledge to debate equally with researchers active in the front lines were gained
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Doctoral Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is conducted, and one year before the expected completion, Achievement Evaluation II and the Midterm Review are held. Through document review and an oral examination, these evaluations are administered to determine whether the student has attained the required level of the competences specified in the Diploma Policy.	

Guidelines for Assessing Learning Outcomes	– Five months prior to the expected completion, Achievement Evaluation III and the Preliminary Thesis Review are conducted. Through document review and an oral examination, these evaluations are administered to verify that the student has fully achieved the competences specified in the Diploma Policy, and to determine their eligibility to take the Final Examination. – The Final Examination is conducted, in which the thesis is evaluated through a review and an oral examination. Through this process, a final assessment is made to confirm that the student has fully achieved the competences specified in the Diploma Policy at the required level.
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree dissertation must be the results of work in which the diploma applicant took the initiative and must contain research findings that are unprecedented and internationally highly appraised and that contribute to make strides in the areas of bioinformatics. The degree dissertation must be written in English logically and scientifically and must be constructed in an appropriate format as a degree dissertation. 【Review board members】 A dissertation is reviewed by an exclusive board formed by one chief reviewer and three or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the three or more sub-reviewers, two or more faculty members qualified to supervise the research in the Program must be included. The four or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the four or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain his or her degree thesis content and then questioned by exclusive board members about what he or she has explained. The presentation of dissertation content and a question-and-answer session, which are part of the final exam, are publicly administered. During this examination, in which the applicant is required to make a presentation about his or her degree dissertation in English logically and scientifically, the applicant is evaluated to see if he or she can convince the reviewers sufficiently by answering the reviewers' questions with insight and by using the advanced specialized knowledge of the areas of bioinformatics and including the latest research trends.

Curriculum Policy

Students are engaged in the research activities for identifying and solving unsolved issues for making innovations in the realms of bioinformatics. The curriculum includes internship subjects to support students in making innovations, for which they need to have the high awareness and motivation to work on research tasks in very different and/or cross-disciplinary areas in cooperation with researchers in different areas not just one's own area of expertise. In addition, to gain the cross-disciplinary way of thinking with the big picture in mind and cultivate the world's top-class advanced specialized research ability, the curriculum also organizes seminars taught by researchers who are active in the front lines and belong to overseas research institutes.

Curriculum Design Framework	– The curriculum in the bioinformatics realms are composed of Major Subjects, the foundation subjects shared by the six realms of the Master's Program in Life Science Innovation (Disease Mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics, Biomolecular Engineering), and Graduate General Education Courses. In specialized knowledge, students are supervised for bioinformatics research. – Competence of knowledge creation is gained through doctoral dissertation creation, etc. – Management competence is gained through “Doctoral Competence Development”, etc. – Communication competence is gained with “Practices in Life Science Innovation”, etc. – Leadership competence is gained through “Doctoral Research in Life Science Innovation”. – Competence in Internationality is gained through “Doctor's Life Science Innovation Seminar”, etc. – Innovation ability is gained through General Foundation Subjects, Major Subjects, etc. – Specialized knowledge is gained through “Doctoral Research in Life Science Innovation”, etc. – Advanced practical English is gained through “Doctor's Life Science Innovation Seminar” , etc.
Teaching and Learning Methods	– With the understanding of the latest research trends in bioinformatics, students identify issues that have not been revealed and draw up and carry out an appropriate research plan for solving them. Further, through critical debates with supervisory faculty members, students develop the plan into a research that leads to produce life science innovations. – Obtained research findings are presented in academic journals, etc. With this, students improve their English proficiency, and in the process, gain reasoning skills. – With General Foundation Subjects and Graduate General Education Courses, students learn the latest research trends in the areas of life science and also improve English presentation ability. – With internships, research ability is honed through the experience of creating new knowledge in cooperation with researchers in other areas not just one's own area of expertise.

Doctoral Program in Life Science Innovation (Bioinformatics) / Doctor of Philosophy in Bioinformatics

Admission Policy

Desired Student Profile	We seek candidates who have the sufficient qualities to gain the basic research abilities that are expected to make innovations in the areas of bioinformatics, the specialized knowledge necessary to achieve it, and good command of English serving for various research activities in the international society.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess master's degree level specialized knowledge (excellence in the current academic performance), and the ability to explain concretely in English about research backgrounds, research plans and about passing along research findings to the society. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation and fundamental research skills to drive innovation in the field of Bioinformatics, as well as their English proficiency (equivalent to CEFR level B2 or higher) which is necessary for conducting research activities in the Doctoral Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Doctor's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year, providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Empowerment Informatics

- Master of Human Informatics
- Doctor of Philosophy in Human Informatics

Program Educational Objectives

To cultivate global leaders that can take initiatives and design systems to empower people in the international society of people with diversified cultural background.

Graduate Profile	Human resources that have the following three practical abilities, including inter-disciplinary ability to consider issues from multifaceted perspectives, frontline ability to resolve real-world problems in industrial, governmental and academic spheres and presentation ability to communicate and appeal the essence of research achievements, in addition to basic research ability in the area of “Empowerment Informatics” as “Informatics that supplements and extends human functions and enables technology to work in harmony with people ” .

Diploma Policy

The degree of Doctor of Philosophy in Human Informatics is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulation of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

At the interim evaluation, the degree of Master of Human Informatics will is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulation of the University of Tsukuba and related university regulations, and who have passed the Qualifying Examination.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Interdisciplinary ability: ability to utilize the knowledge the area of expertise in human informatics and the one other than in one's own area for various tasks.	①If there is basic specialized knowledge which covers the areas that constitute human informatics ②If there are discussion, research or practical business obtained based on the knowledge in the area other than one's own area of expertise.
	7. Presentation ability: ability to set leading-edge research tasks in human informatics and to achieve internationally competent creative results.	①If there is creative research ability to contributes to development of human informatics and performance to be recognized as an expert ②If capable of making presentation of research outcomes in international conference and discuss about them.
	8. Frontline ability: ability to plan and explain the methods to resolve real-world problems base on ethical view and ethical knowledge appropriate for researchers in the area of human informatics or highly specialized professionals.	①If capable of trying to solve actual problems and draft a new project. ②If capable of properly grasping/analyzing the obstacle upon solving actual problems and considering the measures to overcome them. ③If capable of understanding and complying with the procedures required for researcher ethics, engineer ethics, ethics and research relating to the research tasks to people.
Guidelines for Assessing Learning Outcomes	Evaluation of learning outcomes is conducted based on the "Criteria of Achievement". – In the Seminer in Empowerment Informatics (EMP seminer) held in the first and second years, students report their research progress and receive direct evaluation and feedback from faculty. – At the end of each academic year from Year 1 through Year 4, students submit the sheet of "Evaluation of Student Achievement" to their academic advisor. Based on the advisor's achievement score, students receive an evaluation of their attainment and confirm research progress. The study plan and research plan are then revised accordingly. – In the Qualifying Examination, a review conducted in the second year, the program determines whether the student is ready to commence research for the doctoral dissertation. This is carried out through direct evaluation by subject-matter experts. – In the Assessment of Student Achievement, the program evaluates both overall attainment and whether to permit submission of the doctoral dissertation. The review is conducted as a direct evaluation based on the sheet of "Assesment of Student Achievement"	

Evaluation Criteria for Degree Theses/ Dissertations	【Master's program】 A thesis is accepted if all of the following evaluation items are proven to be met. 1. Based on understanding of preceding research in relevant area, if the significance and positioning of the said research in human informatics is described. 2. If original research findings in the areas of engineering are contained well enough to be presented in academia, etc. 3. If constant reliability is found in the research outcomes. 4. If research results are appropriately discussed and an adequate conclusion is drawn 5. If research backgrounds, purposes, methods, results, discussions, conclusions, etc. are organized in a format appropriate as a master's degree thesis <Level standards required for the degree thesis, review board members, review method and review items, etc.> A master's thesis review board shall consist of one chief examiner and two or more sub-chief examiners designated from teachers in charge of Degree Programs in Systems and Information Engineering. However, where required, faculty members of other Degree Programs or other university graduate schools or laboratory researchers, etc. can serve as sub-reviewers. The chief reviewer must be the research supervisory faculty member. As the sub-reviewers, two or more applicable faculty members of the Degree Programs in Systems and Information Engineering of the Graduate School must be included. A master's thesis review board shall examine specific theme research in accordance with the standard relating to master's thesis review and conduct acceptance decision. The thesis approved to satisfy the standard as the one for a degree regarding the above-mentioned evaluation items 1. to 5. shall be accepted after finishing interview (oral) examination. 【Doctoral Program】 The thesis for a degree shall satisfy the following evaluation items and passing the final exam shall be the requirement for granting doctorate degree. <Criteria for degree thesis review> 1. Based on understanding of international research tendency and preceding research in relevant area, if the significance and positioning of the said research in human informatics is clearly described. 2. If the appropriate amount of original research outcomes that contribute to development of human informatics for presenting as a thesis is included. 3. If Research results are sufficiently verified in reliability 4. If research results are adequately discussed and concluded based on objective evidence 5. If research backgrounds, purposes, methods, results, discussions, conclusions, etc. are organized in a format appropriate as a doctoral dissertation

Evaluation Criteria for Degree Theses/ Dissertations	<Criteria for final exam> 1. 【Interdisciplinary ability】If there is basic specialized knowledge which covers the areas that constitute human informatics 2. 【Interdisciplinary ability】If there are discussion, research or practical business obtained based on the knowledge in the area other than one's own area of expertise. 3. 【Presentation ability】If there is creative research ability to contributes to development of human informatics and performance to be recognized as an expert 4. 【Presentation ability】If capable of making presentation of research outcomes in international conference and discuss about them. 5. 【Frontline ability】If capable of properly grasping/analyzing the obstacle upon solving actual problems and considering or planning the measures to overcome them. 6. 【Frontline ability】If capable of understanding and complying with the procedures required for researcher ethics, engineer ethics, ethics and research relating to the research tasks to people. <Level standards required for the degree thesis, review board members, review method and review items, etc.> A doctoral thesis review board shall be composed of one chief examiner and three or more sub-chief examiners. Among these examiners, the chief examiner and two or more sub-chief examiners shall be designated from teachers in charge of Empowerment Informatics Program (thesis supervisors), two or more of whom shall be professors. Besides, if necessary, one person designated by the chair of Assessment of Student Achievement Committee shall participate as an observer, who shall bear responsibility for confirming that the thesis examination is properly carried out. A doctoral thesis review board shall examine thesis in accordance with the standard relating to thesis review and conduct acceptance decision. The dissertation passes if approved to be on a doctoral dissertation level in all of the above evaluation items 1 to 5 with the final (oral) exam included in the judgment.

Curriculum Policy

Based on the system of “Empowerment Informatics” as “Informatics that supplements and extends human functions and enables technology to work in harmony with people ”, the followings three areas that consider the exit points as career path:

- Supplementation･･･to supplement the reduced physical and sensory functions of disabled and senior people.
- Harmony･･･to harmonize so that engineering systems which people contact with in their daily lives can be integrated into them.
- Extensions･･･to externalize the latest creative functions that people potentially have.

Additionally, the curriculum shall be organized to cultivate the abilities required for advanced global leaders appropriate for a doctor through diversified programs. user-related elements (understanding of people), cross-disciplinary course work to acquire cross-disciplinary knowledge based on system-related elements (system engineering understanding), contents-related elements (packaging technology) practical research training to meet social needs etc.

The education/research supervision shall be provided to cultivate wide basic knowledge in Systems and Information Engineering, wide view to cover Science and Technology and generic competences to support the active role in social diversified settings, including research ability, specialized knowledge and ethical view.

Curriculum Design Framework	The curriculum shall be organized by setting enhancement of research ability relating to Empowerment Informatics as a primary purpose and in order to contribute to cultivating basic knowledge and wide view, generic competences in relevant areas. As necessary, it is recommended to register the credits from Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses. In research supervision, in order to foster the research ability with multifaceted perspectives, multidisciplinary research advisory system shall be adopted (the faculty members in other doctoral programs shall participate in the courses as necessary). Detailed courses to be taken and deployment of multiple supervisors shall be decided with consideration to the research plans of individual students and their career plans etc. 【Generic competences】 - To acquire Competence of knowledge creation mainly through Advanced Research (Research in Empowerment Informatics I, II, III, IV, V), Practicum and Practical Classes (Exercises on Presentation Skills in Empowerment Informatics, Research Paper Writing Workshop in Empowerment Informatics, Conference Paper and Journal Paper Writing Exercise in Empowerment Informatics). - To acquire Management competence mainly through Advanced Research and Empowerment Informatics Project-based Research.

Curriculum Design Framework	− To acquire communication skills mainly through Advanced Research, Introduction to Empowerment Informatics, Advanced Practical Training (Seminar in Empowerment Informatics 1,2, Exercises on Presentation Skills in Empowerment Informatics),Practical Training in Engineering Residence. − To acquire Leadership competence mainly through Advanced Research. − To acquire Competence in Internationality through Advanced Practical Training and Advanced Research. 【Specialized knowledge/ability】 − To acquire interdisciplinary ability mainly through Introduction to Empowerment Informatics, Advanced Practical Training, Advanced Research, Degree Programs' Common Courses (mainly in the area of Empowerment Informatics). − To acquire presentation ability mainly through Advanced Research, Advanced Practical Training, Empowerment Informatics Project-based Research, Conference Paper and Journal Paper Writing Exercise in Empowerment Informatics, Research Paper Writing Workshop in Empowerment Informatics. − To acquire frontline ability mainly through Introduction to Empowerment Informatics, Advanced Research and Practical Training in Engineering Residence. − For the students with diversified academic backgrounds, the courses to acquire basic knowledge and skills necessary to commence research immediately after enrollment. Concurrently, students are supervised to identify socially and academically significant research tasks in their own right. − Each student learns under their initiative for more specialized knowledge and skills through classes, etc. while working on their research tasks. Additionally, by taking advantage of multidisciplinary research advisory system, to cultivate ability to see from a higher perspective and interdisciplinary ability to grasp issues from diversified perspectives by participating seminars of sub supervisors with different specialty. − To provide instruction in order that research outcomes obtained are finally presented in academic research paper and receive evaluations from a large number of researchers. Through this, to enhance Competence of knowledge creation, promote further research and empower people to acquire higher specialized knowledge/skills. − Concurrently, each student does an achievement self-check wherever necessary to be encouraged to gain the knowledge or skills to made up for the lack to complete the Program.

Teaching and Learning Methods	– For the students with diversified academic backgrounds, the courses to acquire basic knowledge and skills relating to the elements, including understanding the characteristics of people (user-related elements), understanding system engineering (system-related elements) and understanding system structure and interaction design (contents-related elements) necessary to commence research immediately after enrollment, shall be focused on. Concurrently with the above-mentioned, such courses shall be implemented in order that students themselves can find research tasks having social impacts by satisfying interdisciplinarity, novelty and utility. – Each student learns under their initiative for more specialized knowledge and skills through classes, etc. while working on their research tasks. Additionally, by taking advantage of multidisciplinary research advisory system, to cultivate ability to see from a higher perspective to grasp issues from diversified perspectives by participating seminars of sub supervisors with different specialty. – To provide instruction in order that research outcomes obtained are finally presented as peer-reviewed academic research paper and receive evaluations of high level. Through this, to enhance Competence of knowledge creation, promote further research and empower people to acquire higher specialized knowledge/skills. – Concurrently, each student does an achievement self-check wherever necessary to be encouraged to gain the knowledge or skills to made up for the lack to complete the Program.

Admission Policy

Desired Student Profile	The desired students shall have sufficient research ability such as adaptability in the area of expertise to explore the essence and resolve real problems, multilateral and multifaceted ability to see from a higher perspective and creativity etc. to develop a new horizon for the most advanced and latest discipline, the capacity as a leader to tackle various global issues that spread in real society and strong enthusiasm and career aspiration to aim at becoming global leaders in industries.

Student Selection Process	The basic policy is to select the human resources appropriate for coexistence of academic character and practical skills. We shall correspond to diversified applicants through recommendation entrance examination and general entrance examination by dividing the number of expected applicants and implementing multiple entrance examinations in the same fiscal year. Regardless of examination categories, foreign language (submission of TOEIC official score certificate, examinee score report of TOEFL etc., upon application) and oral examination are compulsory. In oral examination, the interview relating research plan and career plan shall be performed. – In recommendation entrance examination (July), the ideal candidates shall be the ones who make our degree program their number one choice, get good grades and excellent ability necessary for research in Empowerment Informatics. – In the 1st General Examination (August), the applicants who have high basic academic skills in mathematics/English etc., have clear statement of purpose for applying our degree program and excellent ability in concreteness and conception for career plan. Furthermore, in the 2nd General Examination (February), the applicants shall be selected through evaluation of their graduate study (or the alternatives) in addition to the above-mentioned.

Learning Support Framework

Academic Support	To support students' self-directed and advanced learning, we implement multiple initiatives. By using the sheet of Evaluation of Student Achievement, students visualize their research progress and learning outcomes, enabling academic advisors to provide appropriate course guidance and supervision. We promote interaction with researchers outside the university to advance research through multifaceted critique and discussion. We also encourage engagement with industry researchers and alumni to stimulate doctoral students' research motivation and support the development of their professional career paths.
Opportunities for Peer Interaction	We promote interaction among students to enhance their motivation for learning and the quality of their research. In the EMP Seminars, students present their research and, through discussions with peers, deepen their understanding while cultivating presentation skills and critical thinking. In addition, each course provides forums where multiple students can engage in discussion, encouraging information sharing and mutual stimulation. Through these activities, we strengthen peer effects among students and help invigorate the research environment.

Opportunities for Student–Faculty Interaction	To support students' research activities, we proactively provide opportunities for interaction with faculty. In the EMP Seminars, students present their research outcomes and, by receiving guidance and fielding questions from faculty, further refine their research direction and logical structure. In Project-based Research, students collaborate under faculty supervision to tackle defined problems and develop practical research competences. At the Graduate Student Roundtable, we offer an open forum for free exchange between faculty and students, enabling consultation on research activities and career paths. Furthermore, faculty collaborate with external researchers and industry professionals to establish a framework that provides multifaceted mentorship and advice to students.

Approaches to Assuring and Enhancing Educational Quality

To ensure educational quality and continuous improvement, we establish multiple structures and mechanisms. For newly appointed faculty, we conduct Faculty Development (FD) programs on course content and pedagogy to enhance teaching competence. In addition, we provide regular faculty training, including FD on the Evaluation of Student Achievement, in order to promote qualitative improvement of educational activities. The Assesment of Student Achievement Committee evaluates students' learning outcomes and verifies the validity of the curriculum and the appropriateness of academic supervision. Furthermore, we establish a PDCA Committee to conduct ongoing review and improvement across all educational activities, thereby assuring educational quality and strengthening the framework for achieving the objectives of the EMP.

Master's Program in Biology

Master of Science

Program Educational Objectives

In the eight research areas, Taxonomy & Evolution, Ecology, Plant development & physiology, Animal development & physiology, Molecular cell biology, Genome informatics, Advanced cell biology, Advance molecular biology, the students in doctoral program, teachers in junior high schools/high schools and advanced professionals etc. who have wide knowledge and fundamental research ability, ability to explore issues and practical skills, and ability to disseminate scientific knowledge to society shall be trained.

Graduate Profile	The human resources who have the following abilities shall be fostered: – Having learned knowledge in the area of expertise and fundamental research ability. – Possible to logically grasp the biological world and phenomenon and to work on the problems set from the basic scientific perspectives and to explore the basic principle behind them. – Having acquired presentation/communication skills.

Diploma Policy

The degree of Master of Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Knowledge in natural science: comprehensive knowledge in general natural science	If capable of understanding the trend in fundamental research in various areas of natural science.
	7. Knowledge in biology: comprehensive basic knowledge in general biology in order to logically grasp the biological world and phenomenon	If having comprehensive basic knowledge in general biology in order to logically grasp the biological world and phenomenon.
	8. Research ability for biology: ability to research the problems set from the biological perspectives	If having advanced knowledge relating to the area of expertise of biology and ability to accomplish experiments

	Competences	Evaluation perspectives
Knowledge and Skills	9. Ability to explore biology research: ability to explore new problems and issues behind the research outcomes acquired	If having abilities to understand the basic school regulations behind real-life biological problems and to solve new problems
	10. Ability to disseminate biology research: presentation ability and communication skills to disseminate research outcomes	If having presentation ability and communication skills for research in the area of expertise.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement assessments based on the "Competence Achievement Evaluation Sheet". This process objectively verifies and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. The stages and methods of achievement assessment are outlined below. At the end of the first-year fall semester, the primary and secondary advisors conduct an interim assessment. This provides a comprehensive evaluation of whether the student meets the competences regarding research progress, related knowledge, and presentation skills. In the middle of the second year's fall semester, the Preliminary Review Committee conducts a preliminary thesis review (public). This confirms the student's learning status and provides guidance toward the final achievement assessment. After passing the preliminary review, students who submit their final thesis undergo a master's thesis review conducted by a thesis review committee composed of the primary supervisor and at least two secondary supervisors. Concurrently with the final review, a final achievement evaluation is conducted. At this time, students are required to document competences related to activities beyond coursework, such as research activities (international collaborative research, experience presenting at domestic/international conferences), participation in various workshops, and involvement in organizing academic societies or research meetings. This actively evaluates independent learning and research activities.	

Evaluation Criteria for Degree Theses/ Dissertations	The dissertation that satisfies all the following items shall be a pass as the thesis for master's degree after going through final examination. Further, the committee for master's thesis review (one chief examiner and two or more sub-chief examiners) shall examine the dissertation. Additionally, as appropriate the faculty member(s) of other master's programs shall be able to participate in such examination as sub examiner(s). 1. If the real problems in biology are set from perspectives of basic science or the ones that anticipate their applications. 2. If research methods of theory, experiments and survey used for exploring problems and analysis methods for data obtained are scientifically appropriate. 3. If the points of argument from problem setting to conclusion are unfolded demonstratively and logically. 4. If the academic results for the problems set are acquired. 5. If the dissertation is presentable as a thesis for master's degree.

Curriculum Policy

Based on understanding diversity of the biological world, in order to acquire the ability to elucidate the basic principle of biological phenomenon, the curriculum shall be organized focusing on the eight research areas, Taxonomy & Evolution, Ecology, Plant development & physiology, Animal development & physiology, Molecular cell biology, Genome informatics, Advanced cell biology (cooperated graduate school), advance molecular biology (cooperated graduate school) that constitute this degree's program.

Curriculum Design Framework	Centering around the students' major area, in order to contribute to cultivating basic knowledge and wide view, generic competences in relevant areas, one or more credits shall be registered from Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses. The specialized lectures as specialized courses in area of expertise and practical training and special research as selective compulsory courses shall be registered and basic knowledge and skills of the area of expertise shall be learned. – From Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses, the ability to understand approaches of natural science, and in addition, comprehensive ability, such as information science, research ethics, bioethics, communication skills and ability to disseminate research outcomes etc. shall be acquired. – By Foundation Subjects for Major, fundamental knowledge and ability to understand general biology science including biology and science communication and presentation ability shall be acquired. – By Major Subjects, basic survey/analysis skills in biological research areas of various biological scientific areas shall be learned and ability to research and explore, and to disseminate shall be acquired.

Curriculum Design Framework	– In the seminars of the area of expertise, intensive reading of the newest and latest articles shall be performed and analysis ability and presentation ability shall be acquired. – In research methods of the area of expertise, ability to acquire data through experiments and analysis and to consider the conclusions and problems of research contents shall be acquired. – Through science mediation implementation and TA experience, experience of presentation in research seminars, capacity of teamwork in research practice shall be acquired. – Through presentation in international conference, exchange with international students and collaborative research with foreign researchers, to foster awareness to contribute to international society.
Teaching and Learning Methods	– The standard learning year shall be two years. As the requirements to complete master's degree, it is necessary to acquire the following 30 or more credits, to put the research outcomes together in master's thesis and to pass the final examination. – Compulsory courses: 23 credits including Seminars and Methodology in each area, Science Presentation and Seminar in Advanced Biology shall be the compulsory courses. Especially, in Methodology, research supervision and supervision to create master's thesis shall be implemented. – Selective courses and others: up to seven credits including one or more credit(s) from Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses respectively shall be granted as credits for completion. – Upon commencing the 1st year, for all the students the advisory committee (research supervision team) composed of the team of a chief supervisor and several sub supervisors shall be established to organize validity and problems of research plan for each student. Additionally, instruction shall be provided to confirm registered courses and acquired credits etc. The advisory committee members can be participated from other master' programs, as necessary.

Admission Policy

Desired Student Profile	The desired student shall be the one who has a deep interest in biological world and phenomenon and basic academic skills for biology and strong sprit of inquiry.

Student Selection Process	By adopting various kinds of selection methods, such as general entrance examination, special selection of international students and special selection of working individuals etc., foreign students and working individuals as well as the students who enter immediately after graduation of universities shall be broadly accepted. Through the document submitted and oral examination, the following abilities shall be evaluated: – Through the document submitted and oral examination, the basic knowledge relating to biology and basic academic skills shall be evaluated. – Through the scores of English proficiency examination included in the document submitted, English ability shall be evaluated. – Through the research plan included in the document submitted or oral examination, logical thinking ability and accurate ability of expression shall be evaluated. – Through oral examination, research ability and suitability shall be evaluated.

Learning Support Framework

Academic Support	The primary and secondary advisors provide guidance on presentations and thesis writing. They also offer support for managing research time. Furthermore, they actively encourage participation in events such as the Japan-China-Korea International Graduate Student Academic Forum, Global Science Week, and academic society annual meetings, while providing instruction to enhance presentation skills.
Opportunities for Peer Interaction	In the required course Science Presentation, students deepen their interactions by presenting their own research. Additionally, Seminars involving multiple laboratories provide opportunities for student exchange. Furthermore, the Graduate Student Association organizes poster sessions and networking events, actively encouraging participation from students and faculty both within and outside the degree program. To foster interaction with students outside the university, students present their research findings at academic conferences and research meetings, thereby enhancing their motivation to learn and improving the quality of their research.
Opportunities for Student–Faculty Interaction	Orientation sessions for incoming students and thesis seminars for final-year students are held to provide opportunities for interaction with faculty members. Additionally, Graduate Student Association takes the lead in organizing poster presentations and social gatherings, actively encouraging faculty participation to foster interaction between faculty and students. Furthermore, preliminary thesis review sessions are conducted publicly, encouraging active participation from both students and faculty to create opportunities for interaction.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee shares information on final-year students' research activities (publication of papers, awards received, international collaborative research, presentations at domestic and international conferences, etc.) and discusses whether the quality of education provided to students is assured. Additionally, student surveys, graduation rates, and employment status are shared at the Education Council, where challenges and improvement measures are discussed. Furthermore, faculty participation in the Master's Thesis Preliminary Review Committee is encouraged to stimulate more active discussion.

Master's Program in Agro-Bioresources Science and Technology

Master of Agricultural Science

Program Educational Objectives

As the first stage to train the researchers etc. in agro-biological resource sciences relating to agriculture/living things/environment, the human resources who learn fundamental specialized knowledge relating agro-biological resource sciences, can contribute to stable living and sustainable development of human beings such as stable food supply and development, maintenance and sustainable use of bioresource etc., have highly creative and excellent research/development ability and additionally have distinguished ability to have responsibility for advanced professional work shall be trained.

Graduate Profile	Human resources that have fundamental knowledge relating agro-biological resource sciences, understand the procedures to solve the problems regarding the real issues relating bioresources based on the specialized knowledge of the areas in biosystem science, have both global perspectives and local ones together, and have the ability to plan/develop the concrete methods for problem solving.

Diploma Policy

The degree of Master of Agricultural Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Specialty: professional ability relating to agro-biological resource sciences.	If having acquired the specialized knowledge and research ability in the area of expertise of agro-biological resource sciences.
	7. Basic knowledge: basic knowledge relating to agro-biological resource sciences	If having acquired basic knowledge and skills relating to agro-biological resource sciences.
	8. Practical skills: practical skills to solve problems relating to agro-biological resource sciences	If capable of planning/developing and putting into practice the concrete methods by utilizing the basic and specialized knowledge to solve problems relating to bioresources.

Guidelines for Assessing Learning Outcomes	The thesis examination committee, consisting of the chief examiner and two or more sub-examiners, will review the thesis, hold an oral examination, and evaluate the degree of competence attained, and will determine whether the candidate possesses the abilities appropriate for a Master's degree in Agriculture in accordance with the above-mentioned Degree Awarding Policy (DP). Assessment of learning outcomes will be based on objective confirmation and evaluation of the degree of competence acquisition in accordance with the degree awarding policy. In addition, a public presentation will be held for each area.
Evaluation Criteria for Degree Theses/ Dissertations	The dissertation that satisfies all the following items shall be a pass as the thesis for master's degree after going through final examination. The committee for master's thesis review (human informatics) composed of one chief examiner and two or more sub examiners shall examine the dissertation through examination of thesis and oral examination. 1. The research tasks of the dissertation is clearly indicated and has academic or social significance. 2. The research purpose is clarified and the background of the research that led to setting of such purpose and preceding research is accurately understood, appropriately cited and logically explained. 3. The research method is valid. 4. The research outcomes are clearly indicated and analyzed by proper methods. 5. The research outcomes are logically considered and the conclusions with academic novelty and social utility are derived. 6. The dissertation is presentable as a thesis for master's degree.

Curriculum Policy

The program shall consist of 5 areas that are different in terms of their major research methodologies: “Agro-biological Science”, “Agricultural Economics and Sociology”, “Applied Biochemistry”, “Bioresource Environment Engineering” and “Biosystem Science” and two new programs: “Global Food Security” course as a double degree program with overseas partner institution and “International Agricultural Science” as an English program for foreign students. Basic knowledge and skills for agro-biological resource sciences and specialized knowledge, skills and research methodologies necessary to resolve the real problems relating to bioresources shall be learned.

The curriculum shall be organized in order that the students can learn the methods to analyze and summarize the data obtained by research/surveys though the said methodologies and communication skills and presentation ability can be acquired. In “Global Food Security” (double degree program) students shall acquire international views by studying abroad for one year in the overseas partner institution and ability to adapt to different culture.

Curriculum Design Framework	As a specialized fundamental course, in addition to compulsory courses common to programs and selective compulsory courses common to courses, Inter-disciplinary Foundation Courses, Degree Programs' Common Courses and Graduate General Education Courses as elective compulsory courses shall be registered and broad culture and basic knowledge and skills of agro-biological resource sciences shall be acquired. The specialized lectures as Foundation Subjects for Major in area of expertise and practical training and special research as selective compulsory courses shall be registered and basic knowledge and skills of the area of expertise shall be learned. Students will take Major Subjects, exercises, and special research in each specialized field as elective compulsory subjects to acquire basic knowledge and skills in each specialized field. Additionally, by carrying out presentation and discussion in practical training, the knowledge relating to area of expertise shall be deepened and communication skills and presentation ability shall be acquired. By carrying out special research, research/survey methods in area of expertise and analysis methods for and methods for summarizing data shall be learned and Management competence and Teamwork competences shall be acquired. – By Foundation Subjects for Major, broad basic knowledge and skills relating to agro-biological resource sciences shall be learned and understanding of the issues relating to bioresource and ability for its application to the research of the area of expertise and flexible reasoning capacity having both global views and local views shall be acquired. Additionally, the basic ability such as Competence of knowledge application, Management competence, Communication competence, Teamwork competences and Competence in Internationality etc. shall be acquired. – By the lecture courses of Major Subjects, multiple lectures, mainly the ones of the research area that each student is specialized in, shall be selected, and the basic knowledge and skills in each area of expertise and relevant areas and the ability to use them shall be acquired.

Curriculum Design Framework	– By the practical training courses of Major Subjects, the knowledge relating to the area of expertise shall be deepened, ability to research and explore shall be acquire. By carrying out presentation and discussion, communication skills and presentation ability shall be acquired. – By special research courses of Major Subjects, the basic research ability, such as research/survey methods by using specialized methodologies and analysis methods for and methods for summarizing data etc. shall be learned. Additionally, while each student proceeds his/her research along the theme in the area of expertise, the ability to consider/develop concrete methods to solve problems relating to bioresource and Management competence and Teamwork competences shall be acquired. – By summarizing and presenting the research outcomes as master's degree, the above-mentioned abilities shall be enhanced and internationally accepted communication skills and presentation ability and practical skills to use knowledge, tackle diversified problems relating to bioresource, and to contribute to human beings/society shall be acquired.
Teaching and Learning Methods	– The standard learning year shall be two years. As the requirements to complete master's degree, it is necessary to acquire the following 30 or more credits, to put the research outcomes together in master's thesis and to pass the final examination. (1) Foundation Subjects for Major: – Research method for agro-biological resource sciences or international research method for agro-biological resource sciences (one selective required course) – One credit from Degree Programs' Common Courses, Inter-disciplinary Foundation Courses and Graduate General Education Courses respectively. (2) Major Subjects: – Major Subjects (lecture courses): two or more credits in the area of expertise and the relevant ones that each student is specialized in (two selective required credits). – Major Subjects (Special research courses): four courses, 12 credits (selective compulsory courses) of special research in the area of expertise that each student is specialized in, as research supervision/thesis supervision courses.

Admission Policy

Desired Student Profile	The desired student shall be the one who has a deep interest in agro-biological resource sciences relating to agriculture/living things/environment, has a high motivation to learn independently, has basic knowledge relating to agro-biological resource sciences, basic academic skills of natural science or social economics as the foundation of research methodologies, linguistic skil necessary for learning such as reading and understanding literature in English, ability for logical thinking to scientifically analyze various kinds of information toward problem solving and ability to express to accurately convey his/her opinion, and who desires to enter the doctoral course and to become a researcher to carry out highly specialized research, or the student who aims at contributing to society by taking advantage of broad expertise by acquiring master's degree and playing an active part on a global stage.

Student Selection Process	By adopting various kinds of selection methods, such as general entrance examination, special selection of working individuals etc. and special selection of international students and working individuals as well as the students who enter immediately after graduation of universities shall be broadly accepted. Through the document submitted and oral examination, the following abilities shall be evaluated – Through the document submitted and oral examination, the basic knowledge relating to agro-biological resource sciences and basic academic skills shall be evaluated. – Through the scores of English proficiency examination (TOEFL, TOEIC, IELTS) included in the document submitted, English ability shall be evaluated. – Through the research plan included in the document submitted or oral examination, logical thinking ability and accurate ability of expression shall be evaluated. – Through oral examination, interest in agro-biological resource sciences area and motivation toward research and independence shall be evaluated. In order to enter “Global Food Security” course of double degree program, it is also necessary to pass the selective examination implemented by the partner institution after entering this master's degree program.

Learning Support Framework

Academic Support	In seminars and special research in each field, we provide learning support for literature search, collection, and organization skills, presentation skills, and writing skills. We encourage students to take basic specialized courses and common graduate school courses aimed at improving their learning skills. We also provide guidance on research skills in the Advisory Committee. We offer lectures on how to write English papers, etc.
Opportunities for Peer Interaction	Orientations for enrollment and completion are held for all students in the same year, providing opportunities for interaction. At the master's thesis presentations held by each field, students from outside the field and first-year students also attend and are able to participate in question and answer sessions. Active participation in the master's thesis presentations is encouraged, and to ensure opportunities for participation, presentations are held in a format that does not overlap between the five fields. Furthermore, the Japan-China-Korea International Graduate Student Academic Forum, hosted by the research group, is planned and run by the students themselves. This experience provides an opportunity for international exchange with students from Japan and abroad.

Opportunities for Student–Faculty Interaction	Opportunities for interaction are provided for all students in the year, including orientation at the time of enrollment, course guidance sessions in the first and second years, and master's thesis information sessions. Opportunities for interaction with faculty members are also provided during advisory committee problem-solving meetings. Furthermore, there are opportunities for interaction with faculty members beyond the scope of degree programs, such as the "Presentation Skills Improvement Course" held as part of the Japan-China-Korea International Graduate Student Academic Forum hosted by the Research Group, where faculty members from the Research Group act as advisors and provide guidance and advice.

Approaches to Assuring and Enhancing Educational Quality

During the education meeting held at the beginning of the academic year, an FD seminar hosted by the degree program is held, where all members discuss an overview of the previous year and the policies for that year. Feedback is received from participating faculty members regarding FD seminars hosted by the university and research groups. The academic affairs faculty member carefully examines the syllabus and provides feedback on improvements to each faculty member. The degree program curriculum committee, which is made up of the degree program leader, academic affairs committee member, FD committee member, etc., conducts a class evaluation survey. The results are carefully examined and the survey results are fed back to each faculty member. Based on the survey results, each faculty member makes improvements to improve the quality of education. The degree program curriculum committee also makes improvements not only to individual subjects but also to improve the quality of education in the curriculum as a whole. Regarding the evaluation of learning outcomes, the Degree Program Curriculum Committee will evaluate students' learning outcomes and verify the validity of the curriculum and the appropriateness of instruction.

Master's Program in Geosciences

Master of Science

Program Educational Objectives

To train the human resources who understand various natural phenomena on the earth both in the past and at present, have a broad basic knowledge and a specialized research ability to contribute to the settlement of various issues on a global scale, and have scientific intelligence necessary to overcome such issues in modern society.

Graduate Profile	– A person with both a wide basic knowledge in science and geosciences and excellent expertise. – A person with an outstanding ability for area work or experiments/data analysis. – A person with problem-solving skills concerning geoscientific issues. – A person with foreign language and communication abilities that can be accepted in the society. – A person who understands the needs of society for geosciences, and has a basic knowledge and an ability to take actions which re immediate assets to firms etc. – A person with a high ethical perspective for research activities.

Diploma Policy

The degree of Master of Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Knowledge and comprehensive ability: a wide knowledge and comprehensive ability related to science and geoscience.	①If having a wide knowledge related to science and geoscience. ②If understanding the basic principle behind various events related to science and geoscience.
	7. Planning ability: a planning ability to plan research tasks and carry out a research plan.	①If capable of setting the research tasks related to science and geoscience. ②If capable of drafting and carrying out a research plan related to science and geoscience.
	8. Problem-solving ability: an ability to tackle various issues and solve problems by understanding the basic principle behind it.	①If capable of recognizing various problems related to science and geoscience. ②If capable of solving various problems related to science and geoscience.

	Competences	Evaluation perspectives
Knowledge and Skills	9. Expressiveness: an ability to express themselves based on basic foreign language skills and communication skills.	①If having basic foreign language skills. ②If having communication skills to enable students to express the research outcomes relating to sciences and geoscience by themselves.
	10. Creativity: an ability to tackle various issues and apply the results obtained from the research.	①If capable of tackling various issues related to science and geoscience and achieving research outcomes. ②If having creativity to apply the research outcomes related to science and geoscience.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement-level assessments based on the "Achievement Assessment Rubric". At each of the following stages, the level of acquisition of competences stipulated in the Degree Award Policy is objectively verified and evaluated: – Semester-by-semester reviews of research progress conducted by the Advisory Committee – A midterm review conducted at the degree program – A research presentation session conducted at the degree program and the final review conducted by the Thesis Examination Committee	
Evaluation Criteria for Degree Theses/ Dissertations	The dissertation that satisfies all the following items shall be a pass as the thesis for master's degree after going through final examination. Additionally, the thesis shall be examined by the committee for master's thesis review (composed of one chief examiner and two or more sub examiners). While the instructor shall be the sub-examiner in charge of master's program in geoscience, the instructors in charge of other degree programs can participate in such examination. 1. If the submitted master's thesis is high in degree of completion including descriptions, logic expansion and charts. 2. If the level of the contents of master's thesis is high enough as the research in the area of geosciences. 3. If the references are appropriately cited for the master's thesis. 4. If contribution to the research contents of master's thesis by the applicant of master's degree has been sufficiently recognized. 5. If academic rank, contents and future developments of master's thesis are sufficiently understood. 6. If questions and answers are properly carried out in presentation.	

Curriculum Policy

In this Degree Program, subject to the students who have the knowledge to graduate from faculty/department, the curriculum shall be organized aiming at training the human resources that research the process and mechanism of various phenomena in global environment, or earth evolution from the birth of the Earth up to the present and have an ability to gain a comprehensive understanding from various aspects including human environment. For this purpose, this Degree Program is composed of necessary area of expertise (including cooperated graduate school). In all such areas, the curriculum has been organized in order to learn the specialized knowledge relating to specific area necessary to achieve the diploma policy mentioned above and acquire foreign language skills, communication skills, problem-solving ability, ethical view and a wide basic knowledge in the area of geosciences.

Curriculum Design Framework	As a specialized fundamental course, in addition to compulsory courses common to programs and selective compulsory courses common to courses, Inter-disciplinary Foundation Courses, Degree Programs' Common Courses and Graduate General Education Courses as elective compulsory courses shall be registered and broad culture and basic knowledge and skills of agro-biological resource sciences shall be acquired. The specialized lectures as specialized courses in area of expertise and practical training and special research as selective compulsory courses shall be registered and basic knowledge and skills of the area of expertise shall be learned. – Regarding setting of course classification, the curriculum shall be divided into “Foundation Subjects for Major” and “Major Subjects”. “Foundation Subjects for Major” shall deal with the contents common to degree programs, and the basic knowledge relating to geosciences shall be acquired. In “Major Subjects”, specialized lectures/practical training in each area shall be provided, through whose completion specialized knowledge in specific research areas can be acquired. – The students aiming at acquisition of master's degree can receive highly intensive tutorial in a series of curricula until completion of the degree, by the advisory committee composed of the chief supervisor mainly in charge of research instruction and the sub supervisor(s) who cooperate(s) with such research instruction as advisor(s). – Through Foundation Subjects for Major, intellect utilization ability and the ability to have a wide vision shall be acquired. – Through area experiments, Management competence, Communication competence, Teamwork competences, research ability, problem-solving ability and ability to explore shall be acquired. – Through the courses related to foreign languages, Competence in Internationality and research ability shall be acquired. – Through special Topics/General Lectures in the area of expertise, research ability, problem-solving ability and ability to explore shall be acquired.

Curriculum Design Framework	– Through practical training courses, research ability, problem-solving ability, ability to explore, presentation/communication skills shall be acquired. – Through internship, Communication competence, Teamwork competences and the ability to have a wide vision shall be acquired. – Through special research and practical training, all of ten kinds of competences shall be acquired.
Teaching and Learning Methods	– In the 1st year, the Foundation Subjects for Major and the Major Subjects related to each area of expertise (special courses/comprehensive courses/practical training courses etc.) shall be taken. In the 2nd year, the Major Subjects related to each area of expertise shall be continuously taken. – As the selective courses, one or more credits shall be approved from Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses. – Special Research I in the 1st year and Special Research II in the 2nd year shall be taken and the research toward creation of master's thesis shall be carried out. – Upon commencing the 1st year, for all the students the advisory committee (research supervision team) composed of the team of a chief supervisor and several sub supervisors shall be established to organize validity and problems of research plan for each student. Additionally, instruction shall be provided to confirm registered courses and acquired credits etc. The advisory committee shall participate in other master' programs, as necessary.

Admission Policy

Desired Student Profile	In any of the area of expertise of geosciences, the desired student shall have basic specialized have the knowledge to graduate from faculty/department, motivation to deeply explore various natural phenomena on the earth both in the past and at present and have acquired interdisciplinary knowledge for their comprehensive settlement. Especially, the student who has a deep interest in scientifically observing and analyzing natural phenomena and lab tests/observation and field work such as area observation and survey shall be welcomed. It is required that the student shall be willing to study basic science steadily and endeavor to think logically from international vision.
Student Selection Process	– The basic knowledge and basic academic skills relating to geosciences shall be evaluated by document screening and written examination. – The motivation for research and ability to think logically shall be evaluated by oral examination.

Learning Support Framework

Academic Support	Through the advisory committee system, multiple faculty members provide complementary support for students' learning. In addition, financial support is provided through university-wide schemes or program-specific mechanisms to ensure that students can fully engage in their academic activities.

Opportunities for Peer Interaction	By actively promoting discussions and collaboration beyond individual laboratory boundaries at the academic field level, the program encourages interaction with faculty members other than the primary and secondary academic advisors. Opportunities for dialogue are also provided at the degree program level.
Opportunities for Student–Faculty Interaction	Each faculty member reviews their syllabus annually, renewing their awareness of the importance of educational quality. In addition, quality is assured through repeated checks at the degree program level. These efforts are particularly evident in the quality of master's theses, and improvement measures are considered through the thesis review process.

Approaches to Assuring and Enhancing Educational Quality

- The students' learning outcomes are evaluated at educational meetings, advisory committee se-ssions, and five annual research presentation meetings. Through these evaluations, the validity of the curriculum and the appropriateness of academic supervision are examined.
- A Faculty Development (FD) Committee on Academic Affairs has been established to ensure the quality of education by continuously reviewing and improving all educational activities, thereby strengthening the framework for achieving the objectives of the degree program.

Master's Program in Environmental Sciences

Master of Environmental Sciences

Program Educational Objectives

It is necessary for highly specialized professionals who solve local and global issues to have a research/survey ability to analyze/understand the background of the problems from the higher/cross-sectional views, and further, an ability to suggest the solution of the said problems. In details, by fostering specialization and creativity on an international level cultivated from fusion of sciences, engineering, agricultural science and social science etc, and cultivating ability to see from a higher perspective, to practice, ability for immediate assets and communication skills, the capacity as a global leader shall be fostered.

Graduate Profile	– The person with management skill: the person who has high specialization in each area of expertise and multidisciplinary perspective relating to general environmental sciences and is essential for various business management such as overseas activities by firms. – The practical person with specialization: the person who can smoothly carry out international cooperation projects etc. for which high specialization/survey ability is required in international institutions, international cooperation agencies and overseas division etc. in firms etc. – The person with leadership ability: the person who can effectively carry out international negotiation/negotiation between stakeholders etc. through group skills and high scientific communication skills, while making full use of high specialization and analysis ability/problem-solving ability in order to solve local and global-scale environmental issues.

Diploma Policy

The degree of Master of Environmental Sciences is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Comprehensive ability/analysis ability: an ability to understand analyze and expect based on basic/applied science/technology relating to the issues.	①If capable of understanding the targeted issue through basic skills and applied skills of sciences, engineering, agricultural science and social science. ②If capable of carrying out analysis and expectation that leads to problem solving by grasping the issue quantitatively and qualitatively.
	7. Ability to correspond to issues: an ability to collect information from academic/social vision relating to the issues and to correspond to such issues.	①If capable of appropriately collecting academic and social information relating to the issue. ②If capable of taking appropriate measures for and coping with the issues based on collected information relating to the issue.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability to suggest: an ability to investigate the solutions based on academic knowledge/social request relating to the issues.	①If capable of see systems/policies etc. from a higher perspective as well as from an academic vision relating to the issue. ②If capable of investigating the target for problem-solving with an academic and social vision relating to the issue.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement assessments based on the "Achievement Assessment Sheet". This process objectively verifies and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. The stages and methods of achievement assessment are outlined below. The acquisition status of competences is confirmed once at the end of the first year, once during the mid-term presentation in the second year, and once at the time of master's thesis submission, based on the "Achievement Evaluation Sheet".	
Evaluation Criteria for Degree Theses/ Dissertations	As the evaluation standard, the dissertation that satisfies all the following items shall be a pass as the thesis for master's degree after going through final examination. 1. The issue that can directly or indirectly contribute to solving environmental issues. 2. Having examined the conventional research outcomes relating to the issue sufficiently. 3. Indicating new knowledge in theoretical and demonstrative aspects for the issue. As an evaluation method, the final examination for master's thesis shall be held in public and degree of completion of the thesis shall be evaluated. As the system of examination committee, the oral examination (final examination) by the expert committee composed of three examiners. Furthermore, the knowledge and academic skills in the said area and completeness of research shall be evaluated. The requirements for judgement as being a pass shall be as follows: completing interdisciplinary curriculum, acquiring the prescribed credits and carrying out research for master's thesis.	

Curriculum Policy

This master's degree program shall intend to understand the mechanism of environmental issues caused on a local and global scale and to suggest their solutions and establish the curriculum to foster the ability to collect/analyze information, communication skills, to put things into practice and to suggest in addition to sciences, engineering, agricultural science and social science. In detail, in order to acquire comprehensive/analysis ability, ability to correspond to issues and ability to suggest required for diploma, especially the ability to solve the problems including water resources/aquatic environment, living resources/biodiversity, urban problems, disaster/disaster prevention etc., emphasis shall be put on fostering the ability necessary for contribution of problem solving based on the foundation and specialty of sciences, engineering, agricultural science and social science, with the ability to see from a higher perspective.

Curriculum Design Framework	All the courses shall be held in English in principle. By generally introducing active learning, the educational environment where students with diverse nationalities and academic backgrounds improve themselves through friendly rivalry. As a specialized fundamental course, in addition to compulsory courses common to programs and selective compulsory courses common to courses, Inter-disciplinary Foundation Courses, Degree Programs' Common Courses and Graduate General Education Courses as elective compulsory courses shall be registered and broad culture and basic knowledge and skills of agro-biological resource sciences shall be acquired. The specialized lectures as specialized courses in area of expertise and practical training and special research as selective compulsory courses shall be registered and basic knowledge and skills of the area of expertise shall be learned. – Compulsory courses: all the students shall acquire the basic knowledge and academic skills by completing introduction/exercises/practices courses relating to the basics of environmental sciences and comprehend, analyze and consider environmental issues in an interdisciplinary way. By firmly linking classroom lectures and practical training activities, practical ability in order to solve environmental issues shall be cultivated. – Seminar courses: the courses that are related to the master's thesis research, which shall be evaluated in accordance with the unified standard, while taking advantage of the characteristics of each office. – Selective courses: Major Subjects established by special studies and the courses in other educational institutions including domestic and overseas universities in order to enhance specialization in each area. Within the issues, discussion among students and cooperative work shall be promoted and new inventive power as well as international understanding shall be fostered. – Practical training courses: Through training inside and outside Japan in which environment-related internships and inspections and workshops etc. are combined in the government, firms and NPOs etc., the ability as a practitioner shall be cultivated.

Teaching and Learning Methods	– Foundation Subjects for Major : Introduction to Environmental Sciences (2 credits) and Exercises in Environmental Sciences (1 credit) shall be taken as compulsory subjects, which shall be provided in English. – Major Subjects: Lab Seminar in Environmental Sciences 1S ～ 2F (2 credit for each), Thesis Seminar in Environmental Sciences 1S・1F (2 credit for each) and Thesis Seminar in Environmental Sciences 2S・2F (3 credit for each), 18 credits in total shall be taken as compulsory courses. Besides, as selective courses, the courses of 6 or more credits shall be taken. – One or more credit from Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses shall be taken as compulsory courses. – Upon commencing the 1st year, for all the students the advisory committee (research supervision team) composed of the team of chief supervisor and several sub supervisors shall be established to organize validity and problems of research plan for each student. Additionally, instruction shall be provided to confirm registered courses and acquired credits etc. The advisory committee shall participate in other master' programs, as necessary.

Admission Policy

Desired Student Profile	– The person with basic academic skills regarded as distinguished in the course level in any area of sciences, engineering, agricultural science and social science. – The person with motivation to receive interdisciplinary education. – The person who has a deep interest in environmental issues and an interest in practical education toward their solutions. – The person with sense of mission, sense of justice, sense of ethics, ability to persistently continue and flexible and strong mental power etc., as well as a wide vision in order to play an active role in international society and basic quality. – The person with motivation to improve international communication skills such as carrying out presentation in academic conferences/international seminars. – The person with motivation to contribute to contribute to international society by making use of expertise of environment sciences in English in the future. – In addition to the above-mentioned, as for the working professionals, practical skills and management ability acquired by business experience so far shall also be evaluated.
Student Selection Process	– The knowledge/quality, ability, motivation and English ability in the above-mentioned “Desired Students” shall be examined. – The students' abilities shall be observed regarding if they can logically and clearly explain the principle of research plan and relationship with the existing research etc.

Learning Support Framework

Academic Support	For academic advising, student life, employment, and harassment-related consultations, support systems are established through designated committees: the Curriculum Committee, Student Counseling Support Committee, Employment Committee, and Harassment Countermeasures Committee. Additionally, writing support and presentation guidance are provided through the required course “Lab Seminar in Environmental Sciences” and "Thesis Seminar in Environmental Sciences” for all students.
Opportunities for Peer Interaction	We have established an online platform for information exchange accessible to all students enrolled in the degree program, promoting interaction among students. Furthermore, we utilize a tutor system for international students to encourage interaction among all students, including international students. Additionally, we ensure ample time for group work in lectures and seminars for required courses such as Exercise in Environmental Sciences.
Opportunities for Student–Faculty Interaction	We have established an online platform for information exchange accessible to all students enrolled in degree programs and all professors, promoting interaction between students and faculty members. We regularly schedule forums for discussion and exchange involving both students and faculty memebers, such as interim presentations for master's theses.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee conducts reviews of all educational activities and evaluates student learning outcomes to verify the validity of the curriculum and the appropriateness of instruction. Specifically, the Curriculum Committee annually confirms that there are no discrepancies between the content of each course and the competences students can acquire. Furthermore, student feedback is gathered through faculty advisors and shared within the degree program via the Curriculum Committee and the Faculty Meeting. Faculty Development Committee is established within the degree program to systematically and proactively ensure and improve educational quality. Additionally, a framework is established to continuously address mid-term educational quality needs, verify the effectiveness of initiatives, and identify challenges through bodies such as the Degree Program Future Review Committee.

Master's Program in Mountain Studies

Master of Science in Mountain Studies

Program Educational Objectives

To address complex issues arising from natural variations and human activities in mountainous regions, the program cultivates highly specialized professionals through integrated learning across multiple fields such as the geosphere, hydrosphere, and human sphere. These professionals deepen scientific understanding of mountainous areas and contribute to the sustainable development of local communities. The program aims to balance conservation of the natural environment with sustainable regional development and to produce leaders capable of tackling diverse challenges in mountain regions.

Graduate Profile	Individuals who have integratively acquired knowledge and skills in natural and social sciences related to mountainous regions, possess a strong interest in balancing the conservation of the natural environment and the development of local communities, and are capable of contributing to solving these challenges.

Diploma Policy

The degree of Master of Science in Mountain Studies is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Knowledge and technical skills: an ability to acquire basic knowledge and skills relating to mountain studies and make full use of them.	If having acquired basic specialized knowledge and skills relating to mountain studies
	7. Problem solving ability: an ability to scientifically understand various problems in mountainous areas and to establish specific measures to solve such problems.	If having understood various problems in mountainous areas and established concrete measures for problem solving.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability for coordination and self-expression: communication skills to be able to communicate sufficiently and express themselves accurately.	If having acquired communication skills to express themselves accurately.
	9. Leadership ability: an ability to coordinate and cooperate in order to solve problems in mountainous areas and to exhibit leadership.	If capable of coordination and cooperation for problem solving of mountainous areas and exhibiting leadership.
	10. International character: an ability to be able to deal with various issues of mountainous areas in international vision.	If having acquired ability to deal with various issues of mountainous areas in international vision.
Guidelines for Assessing Learning Outcomes	In addition to required and elective assignments, evaluation includes reviewing academic conference outputs (posters, presentations) and Q&A sessions. Master's thesis progress is assessed annually in December by an advisory committee at a joint mountain science conference of four universities (mid-term review in year 1, preliminary review in year 2). The final presentation is public and evaluated by mountain science faculty for competence, with top students nominated for awards. Those expected to meet credit requirements undergo thesis review and oral exam by a committee of one chief and at least two associate examiners. The committee assesses each student's competence according to the degree awarding policy for the Master of Mountain Studies.	
Evaluation Criteria for Degree Theses/ Dissertations	The dissertation that satisfies all the following items shall be a pass as the thesis for master's degree after going through final examination. Additionally, the thesis shall be examined by the committee for master's thesis review (composed of one chief examiner and two or more sub examiners). While the instructor shall be the sub-examiner in charge of master's program in mountain studies, the instructors in charge of other degree programs can participate in such examination. 1. If the submitted master's thesis is high in degree of completion including descriptions, logic expansion and charts. 2. If the contents of the master's degree thesis have international vision and their levels are high enough as the research in the area of mountain studies. 3. If the references are appropriately cited for the master's thesis. 4. If the contents of research for master's thesis can correspond to solution of various problems in mountainous areas.	

Evaluation Criteria for Degree Theses/ Dissertations	5. If academic rank, contents and future developments of master's thesis are sufficiently understood. 6. If conducting questions and answers appropriately based on communication skills for appropriate presentation and sufficient communication in presentation.

Curriculum Policy

Basic knowledge and skills for mountain studies and specialized knowledge, skills and research methodologies necessary to resolve the real problems relating to bioresources shall be learned. The curriculum shall be organized in order that the students can learn the methods to analyze and summarize the data obtained by research/surveys though the said methodologies and communication skills and presentation ability can be acquired.

Curriculum Design Framework	As a specialized fundamental course, in addition to compulsory courses common to programs and selective compulsory courses common to courses, Inter-disciplinary Foundation Courses, Degree Programs' Common Courses and Graduate General Education Courses as elective compulsory courses shall be registered and broad culture and basic knowledge and skills of agro-biological resource sciences shall be acquired. The specialized lectures as specialized courses in area of expertise and practical training and special research as selective compulsory courses shall be registered and basic knowledge and skills of the area of expertise shall be learned. – In order to be able to acquire both the broad scope of education and high degree of expertise essential for mountain environment conservation and management, Major Core Subjects and Foundation Subjects for Major shall be established. The Major Core Subjects shall include courses from three different areas: geological, biological and anthropological areas. The Major Core Subjects within each area will equip students with highly specialized skills and knowledge for specific areas. At the same time, students should take courses across multiple areas to cultivate interdisciplinary and practical imaginative ability and the ability to identify issues. – By compilating the above-mentioned learning and the research of the area of expertise as the master's degree thesis, the items provided in the policy of degree award shall be achieve.

Teaching and Learning Methods	The standard learning year shall be two years. As the requirements to complete master's degree, it is necessary to acquire the following 30 or more credits, to put the research outcomes together in master's thesis and to pass the final examination. – Foundation Subjects for Major shall be organized for the purpose of acquiring basic knowledge, approaches and practical skills relating to mountain studies and Introduction to Mountain Studies and Exercises shall be offered through the collaboration with other universities. The compulsory courses shall include Introduction to Mountain Science A,B (1 credit for each), Mountain Science Area Course A, B (1 credit for each), Area Safety Management (1 credit), Graduate General Education Courses (1 or more credits), Inter-disciplinary Foundation Courses and Degree Programs' Common Courses (1 credit for each), 8 credits in total. The selective courses shall be registered from Mountain Environment Internship I, II, Advanced Research Area Course, Advanced Lecture in Mountain Studies for one or more credits. – Major Core Subjects shall be provided for the purpose of acquiring highly specialized knowledge/skills etc. in geological, biological and anthropological areas. The compulsory courses shall be from Mountain Studies Seminar IA, IB, IIA, IIB, Mountain Science Research I, II, and Introduction to Environmental Sciences, 15 credits in total. The selective courses shall be taken from Major Subjects of Master's Program in Mountain Studies, 2 or more credits of each area (geological, biological and anthropological areas). – Research instruction shall be provided by one chief supervisor and 2 or more sub supervisors. At least one sub instructor may be selected from collaborative universities. Additionally, the advisory committee (AC) composed of one chief instructor and 2 or more sub instructors shall be established to organize validity and problems of research plan for each student by holding meetings to investigate problems. Furthermore, instruction shall be provided to confirm registered courses and acquired credits etc.

Admission Policy

Desired Student Profile	– The persons who have interest in mountainous areas and motivation to contribute to solving problems that mountainous areas confront to are required. – The persons who have basic academic skill relating to natural science and social science, and motivation to acquire the knowledge and skills etc. over the plural areas of mountain studies in addition to specialized knowledge. – The persons from a broad areas shall be accepted including working professionals.
Student Selection Process	– The knowledge/quality, ability, motivation and English ability in the above-mentioned “Desired Students” shall be examined. – The students' abilities shall be observed regarding if they can logically and clearly explain the principle of research plan and relationship with the existing research etc.

Learning Support Framework

Academic Support	At the biannual mandatory "Special Seminar on Mountain Studies", students presenting are specifically coached to deliver presentations understandable to those from different fields. Additionally, as support for time management, multiple faculty members assist in managing time during various activities in the required field training course.
Opportunities for Peer Interaction	The Mountain Studies degree program includes two specialized field training courses, where students typically conduct research and presentations in small groups, promoting interaction among students. Additionally, at the joint Mountain Studies academic conference held with three partner universities (Shinshu University, Shizuoka University, and Yamanashi University), a social gathering is organized to encourage interactions among students from different fields and institutions.
Opportunities for Student–Faculty Interaction	The Mountain Studies degree program organizes social gatherings with faculty not only after the entrance and graduation ceremonies but also following various presentations to increase opportunities for interaction. Additionally, master's thesis supervision is generally conducted in small seminar groups within research labs, promoting close interaction with the primary advisor and other faculty members.

Approaches to Assuring and Enhancing Educational Quality

The Mountain Studies degree program establishes a Mountain DP Learning Confirmation Committee, composed of administrative staff and the Degree Program Leader, to monitor each student's course enrollment and learning progress. By continuously reviewing and improving the overall educational activities, the program ensures educational quality and strengthens the framework for achieving the degree program's objectives.

Master's Program in Life Science Innovation (Food Innovation)

Master of Food Innovation

Program Educational Objectives

This program shall train “the persons with basic ability for doctoral thesis research and highly specialized professionals in order to acquire the ability to explore the functionality of food, the ability to process foods to efficiently manifest their effects, the nutritional and physiological ability to evaluate the effects of their functionality on the human body, and the functional food market and aim to become globally active human resources who can create new value for food”. Innovative functional food development is expected to contribute to realization of a healthy and long-lived society, and promotion of life innovation that contributes to international competitiveness and economic growth.

Graduate Profile	Highly specialized professionals who acquire cross-sectional and bird's eye view of life science relating to life science innovation, acquire world-class advanced specialized research capabilities and open new developments in life science research using bioresources in the areas of R&D and management of functional foods and medicinal cosmetics.

Diploma Policy

The degree of Master of Food Innovation is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Innovation ability: Ability to open up new developments in the areas of life science	①If the basic concepts about the areas of life science were widely gained and problems are interpreted from a higher perspective ②If one has the motivation to gain new skills and knowledge instead of being bound by one's area of expertise ③If the social needs in the areas of life science are understood ④If appropriate research plans are drawn up and carried out to solve Food Innovation Science issues
	7. Specialized knowledge: Advanced knowledge and command of an area of expertise	①If leading-edge specialized knowledge about Food Innovation Science was gained ②If gained knowledge was put to use to solve issues

	Competences	Evaluation perspectives
Knowledge and Skills	8. Advanced practical English: Practical English proficiency that works in the areas of life science	①If an accurate description of one's understandings or opinions about problems in the areas of life science is provided in English ②If written research proposals, reports, etc. are created in English
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Master's Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is administered, through document review and an oral examination, to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – In the second year, Achievement Evaluation II and the Final Examination are administered, through document review and an oral examination, to verify that the student has fully achieved the competences specified in the Diploma Policy.	
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree thesis must be the results of work in which the diploma applicant took the initiative and must contain unprecedented research findings that contribute to make strides in the areas of Food Innovation Science. The degree thesis must be written logically and scientifically and must be constructed in an appropriate format as a degree thesis. 【Review board members】 A thesis is reviewed by an exclusive board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the two or more sub-reviewers, one or more faculty members qualified to supervise the research in the Program must be included. The three or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the three or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain their degree thesis content and then questioned by exclusive board members about what they have explained. During this examination, in which the applicant is required to make a presentation about their degree thesis logically and scientifically, the applicant is evaluated to see if they can convince the reviewers sufficiently by answering the reviewers' questions using the specialized knowledge of the areas of Food Innovation Science with insight.	

Curriculum Policy

Under the education and research environment where there is the active participation by not only the faculty members of Tsukuba but also by collaborative graduate school faculty members from the research institutes or such which belong to the Tsukuba Life Science Promotion Association, students learn about unsolved issues of the society and get engaged in research activities to pursue to open up new strides in the areas of Food Innovation Science. The Master's Program in Life Science Innovation, whose purpose is to cultivate globally active highly specialized professionals, offers all lectures in English and organizes lectures and seminars taught by researchers who are active in the front lines and belong to overseas research institutes. To cultivate the ability to have the big picture in mind from a cross-disciplinary perspective, students benefit from the General Foundation Subjects which cover all-around basic concepts in the areas of life science. As part of the career training, the curriculum includes internship subjects and other subjects such as for learning the operations of research organizations, etc. Moreover, Major Subjects for cultivating the expert abilities in food innovation are also organized.

Curriculum Design Framework	– Curriculum of food innovation area shall be composed of Major Subjects, basic courses common to six program areas of this Degree Program (Disease mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics and Biomolecular Engineering) and Graduate General Education Courses. In Major Subjects, other than the lectures to cultivate professional ability relating to food innovation, students shall receive research supervisor relating to food innovation in the laboratory to which each student belongs. – Competence of knowledge application is gained with master's thesis creation, etc. – Management competence is gained with “Regulatory Science”, etc. – Communication competence is gained with “Master's Research in Life Science Innovation”, etc. – Teamwork competence is gained with “Team Learning in Life Science Innovation (Basic)”, etc. – Competence in Internationality is gained with “Master's Life Science Innovation Seminar”, etc. – Innovation ability is gained with Major Subjects, “Master's Research in Life Science Innovation”, etc. – Specialized knowledge is gained with Major Subjects, etc. – Advanced practical English is gained with General Foundation Subjects, Major Subjects, etc.

Teaching and Learning Methods	– After learning how to gather information and understanding social needs under the supervision of supervisory faculty members, students draw up and carry out an appropriate research plan for solving food innovation issues and round up the results into research outcomes. – Students acquire English presentation skills in the process of presenting their research outcomes at the T-LSI student workshop and other events. – Through General Foundation Subjects and Graduate General Education Courses, students widely gain the basic concepts in the areas of life science and improve communication ability in English in order to be capable of using knowledge not bound by one's area of expertise. – Practical abilities as working individuals are cultivated through internships. – Specialized knowledge is gained through Major Subjects.

Admission Policy

Desired Student Profile	We seek candidates who possess the motivation to make innovations in the areas of Food Innovation Science and have the sufficient qualities to gain the specialized knowledge necessary to attain such innovations, and advanced practical English.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess bachelor's degree level knowledge necessary for learning in the Master's Program in Life Science Innovation and the ability to write about research backgrounds and future prospects in English. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation to drive innovation in the field of Food Innovation and their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for studying in the Master's Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Master's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Master's Program in Life Science Innovation (Environmental Management)

Master of Environmental Management

Program Educational Objectives

Life, including humanity, is determined to survive and grow depending on the surrounding environmental conditions. In recent years, keywords such as food safety and sustainable use of bioresources, which have attracted social attention are closely related to appropriate control of the environment. Therefore, “the persons with basic ability for doctoral thesis research and highly specialized professionals aiming at becoming researchers and learn widely from the relationship between life survival and growth and environmental conditions, that is, from microscopic environmental physiology to microscopic environmental ecology on a global scale, and the latest expertise and research basic ability on environmental impact assessment and control, and play an active role globally in the area of research and development related to appropriate control of the environment” shall be fostered.

Graduate Profile	Highly specialized professionals who acquire cross-sectional and bird's eye view of life science relating to life science innovation, acquire world-class advanced specialized research capabilities and open new developments in life science research using bioresources in the areas of R&D subject to environment/energy as global issues and their management.

Diploma Policy

The degree of Master of Environmental Management is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Innovation ability: Ability to open up new developments in the areas of life science	①If the basic concepts about the areas of life science were widely gained and problems are interpreted from a higher perspective ②If one has the motivation to gain new skills and knowledge instead of being bound by one's area of expertise ③If the social needs in the areas of life science are understood ④If appropriate research plans are drawn up and carried out to solve Environmental Control Science issues

<table>
<tr><td rowspan="3">Knowledge and Skills</td><td>Competences</td><td>Evaluation perspectives</td></tr>
<tr><td>7. Specialized knowledge: Advanced knowledge and command of an area of expertise</td><td>①If leading-edge specialized knowledge about Environmental Control Science was gained
②If gained knowledge was put to use to solve issues</td></tr>
<tr><td>8. Advanced practical English: Practical English proficiency that works in the areas of life science</td><td>①If an accurate description of one's understandings or opinions about problems in the areas of life science is provided in English
②If written research proposals, reports, etc. are created in English</td></tr>
<tr><td>Guidelines for Assessing Learning Outcomes</td><td colspan="2">The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods.
– Based on a curriculum designed to achieve the competences defined by the Master's Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion.
– At the end of the first year, Achievement Evaluation I is administered, through document review and an oral examination, to determine whether the student has attained the required level of the competences specified in the Diploma Policy.
– In the second year, Achievement Evaluation II and the Final Examination are administered, through document review and an oral examination, to verify that the student has fully achieved the competences specified in the Diploma Policy.</td></tr>
<tr><td>Evaluation Criteria for Degree Theses/ Dissertations</td><td colspan="2">【Level standards required for the degree thesis】 The degree thesis must be the results of work in which the diploma applicant took the initiative and must contain unprecedented research findings that contribute to make strides in the areas of Environmental Control Science. The degree thesis must be written logically and scientifically and must be constructed in an appropriate format as a degree thesis.
【Review board members】 A thesis is reviewed by an exclusive board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the two or more sub-reviewers, one or more faculty members qualified to supervise the research in the Program must be included. The three or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the three or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included.</td></tr>
</table>

Evaluation Criteria for Degree Theses/ Dissertations	【Review method and review items, etc.】The applicant is asked to explain their degree thesis content and then questioned by exclusive board members about what they have explained. During this examination, in which the applicant is required to make a presentation about their degree thesis logically and scientifically, the applicant is evaluated to see if they can convince the reviewers sufficiently by answering the reviewers' questions using the specialized knowledge of the areas of Environmental Control Science with insight.

Curriculum Policy

Under the education and research environment where there is the active participation by not only the faculty members of Tsukuba but also by collaborative graduate school faculty members from the research institutes or such which belong to the Tsukuba Life Science Promotion Association, students learn about unsolved issues of the society and get engaged in research activities to pursue to open up new strides in the areas of Environmental Control Science. The Master's Program in Life Science Innovation, whose purpose is to cultivate globally active highly specialized professionals, offers all lectures in English and organizes lectures and seminars taught by researchers who are active in the front lines and belong to overseas research institutes. To cultivate the ability to have the big picture in mind from a cross-disciplinary perspective, students benefit from the General Foundation Subjects which cover all-around basic concepts in the areas of life science. As part of the career training, the curriculum includes internship subjects and other subjects such as for learning the operations of research organizations, etc. Moreover, Major Subjects for cultivating the expert abilities in environmental control are also organized.

Curriculum Design Framework	− Curriculum of environmental management area shall be composed of Major Subjects, basic courses common to six program areas of this Degree Program (Disease mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics and Biomolecular Engineering) and Graduate General Education Courses. In Major Subjects, other than the lectures to cultivate professional ability relating to environmental management, students shall receive research supervisor relating to environmental management in the laboratory to which each student belongs. − Competence of knowledge application is gained with master's thesis creation, etc. − Management competence is gained with “Regulatory Science”, etc. − Communication competence is gained with “Master's Research in Life Science Innovation”, etc. − Teamwork competence is gained with “Team Learning in Life Science Innovation (Basic)”, etc. − Competence in Internationality is gained with “Master's Life Science Innovation Seminar”, etc. − Innovation ability is gained with Major Subjects, “Master's Research in Life Science Innovation”, etc. − Specialized knowledge is gained with Major Subjects, etc. − Advanced practical English is gained with General Foundation Subjects, Major Subjects, etc.

Teaching and Learning Methods	– After learning how to gather information and understanding social needs under the supervision of supervisory faculty members, students draw up and carry out an appropriate research plan for solving environmental control issues and round up the results into research outcomes. – Students acquire English presentation skills in the process of presenting their research outcomes at the T-LSI student workshop and other events. – Through Foundation Subjects for Major and Graduate General Education Courses, students widely gain the basic concepts in the areas of life science and improve communication ability in English in order to be capable of using knowledge not bound by one's area of expertise. – Practical abilities as working individuals are cultivated through internships. – Specialized knowledge is gained through Major Subjects.

Admission Policy

Desired Student Profile	We seek candidates who possess the motivation to make innovations in the areas of Environmental Control Science and have the sufficient qualities to gain the specialized knowledge necessary to attain such innovations, and advanced practical English.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess bachelor's degree level knowledge necessary for learning in the Master's Program in Life Science Innovation and the ability to write about research backgrounds and future prospects in English. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation to drive innovation in the field of Environmental Management and their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for studying in the Master's Program in Life Science Innovation..

Learning Support Framework

Academic Support	In the Master's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Master's Program in Life Science Innovation (Biomolecular Engineering)

Master of Bioengineering

Program Educational Objectives

This program shall train “the persons with basic ability for doctoral thesis research and highly specialized professionals who have thorough knowledge about the application development of biomolecules to the functional materials, acquire management technology related to them, can contribute to realization of innovative analytical technologies and functional materials with high environmental and biocompatibility and plan an active role globally”.

Graduate Profile	Highly specialized professionals who acquire cross-sectional and bird's eye view of life science relating to life science innovation, acquire world-class advanced specialized research capabilities, use all bioresources and globally play an active role in the areas of R&D of innovative functional materials that open up new developments in life science research using bioresources.

Diploma Policy

The degree of Master of Bioengineering is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Innovation ability: Ability to open up new developments in the areas of life science	①If the basic concepts about the areas of life science were widely gained and problems are interpreted from a higher perspective ②If one has the motivation to gain new skills and knowledge instead of being bound by one's area of expertise ③If the social needs in the areas of life science are understood ④If appropriate research plans are drawn up and carried out to solve bioengineering issues
	7. Specialized knowledge: Advanced knowledge and command of an area of expertise	①If leading-edge specialized knowledge about bioengineering was gained ②If gained knowledge was put to use to solve issues

	Competences	Evaluation perspectives
Knowledge and Skills	8. Advanced practical English: Practical English proficiency that works in the areas of life science	①If an accurate description of one's understandings or opinions about problems in the areas of life science is provided in English ②If written research proposals, reports, etc. are created in English
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Master's Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is administered, through document review and an oral examination, to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – In the second year, Achievement Evaluation II and the Final Examination are administered, through document review and an oral examination, to verify that the student has fully achieved the competences specified in the Diploma Policy.	
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree thesis must be the results of work in which the diploma applicant took the initiative and must contain unprecedented research findings that contribute to make strides in the areas of Biomolecular materials field. The degree thesis must be written logically and scientifically and must be constructed in an appropriate format as a degree thesis. 【Review board members】 A thesis is reviewed by an exclusive board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the two or more sub-reviewers, one or more faculty members qualified to supervise the research in the Program must be included. The three or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the three or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain their degree thesis content and then questioned by exclusive board members about what they have explained. During this examination, in which the applicant is required to make a presentation about their degree thesis logically and scientifically, the applicant is evaluated to see if they can convince the reviewers sufficiently by answering the reviewers' questions using the specialized knowledge of the areas of Biomolecular Materials Field with insight.	

Curriculum Policy

Under the education and research environment where there is the active participation by not only the faculty members of Tsukuba but also by collaborative graduate school faculty members from the research institutes or such which belong to the Tsukuba Life Science Promotion Association, students learn about unsolved issues of the society and get engaged in research activities to pursue to open up new strides in the areas of Biomolecular Materials Field. The Master's Program in Life Science Innovation, whose purpose is to cultivate globally active highly specialized professionals, offers all lectures in English and organizes lectures and seminars taught by researchers who are active in the front lines and belong to overseas research institutes. To cultivate the ability to have the big picture in mind from a cross-disciplinary perspective, students benefit from the General Foundation Subjects which cover all-around basic concepts in the areas of life science. As part of the career training, the curriculum includes internship subjects and other subjects such as for learning the operations of research organizations, etc. Moreover, Major Subjects for cultivating the expert abilities in biomolecular materials are also organized.

Curriculum Design Framework	− Curriculum of biomolecular engineering area shall be composed of Major Subjects, basic courses common to six program areas of this Degree Program (Disease mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics and Biomolecular Engineering) and Graduate General Education Courses. In Major Subjects, other than the lectures to cultivate professional ability relating to biomolecular engineering, students shall receive research supervisor relating to environmental management in the laboratory to which each student belongs. − Competence of knowledge application is gained with master's thesis creation, etc. − Management competence is gained with “Regulatory Science”, etc. − Communication competence is gained with “Master's Research in Life Science Innovation”, etc. − Teamwork competence is gained with “Team Learning in Life Science Innovation（Basic)”, etc. − Competence in Internationality is gained with “Master's Life Science Innovation Seminar”, etc. − Innovation ability is gained with Major Subjects, “Master's Research in Life Science Innovation”, etc. − Specialized knowledge is gained with Major Subjects, etc. − Advanced practical English is gained with General Foundation Subjects for Major, Major Subjects, etc.

Teaching and Learning Methods	– After learning how to gather information and understanding social needs under the supervision of supervisory faculty members, students draw up and carry out an appropriate research plan for solving biomolecular materials issues and round up the results into research outcomes. – Students acquire English presentation skills in the process of presenting their research outcomes at the T-LSI student workshop and other events. – Through General Foundation Subjects and Graduate General Education Courses, students widely gain the basic concepts in the areas of life science and improve communication ability in English in order to be capable of using knowledge not bound by one's area of expertise. – Practical abilities as working individuals are cultivated through internships. – Specialized knowledge is gained through Major Subjects.

Admission Policy

Desired Student Profile	We seek candidates who possess the motivation to make innovations in the areas of Biomolecular materials field and have the sufficient qualities to gain the specialized knowledge necessary to attain such innovations, and advanced practical English.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess bachelor's degree level knowledge necessary for learning in the Master's Program in Life Science Innovation and the ability to write about research backgrounds and future prospects in English. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation to drive innovation in the field of Biomolecular Engineering and their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for studying in the Master's Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Master's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Biology

Doctor of Philosophy in Science

Program Educational Objectives

Based on understanding diversity of the biological world, by fostering the human resources that have an ability to gain a comprehensive understanding of universality and uniqueness in individual living things from biological perspectives, we shall aim at producing researchers in biology area and the world top leaders who can play an active role in research/development site in life science area.

Graduate Profile	The human resources who have the following abilities shall be fostered: – Capable of understanding the trend in fundamental research in various areas of natural science. – Capable of logically grasping the biological world and phenomenon and establishing the process from problem setting/ to problem solution from biological perspectives. – Capable of achieving internationally competent academic results by elucidating the basic principle behind problems.

Diploma Policy

The degree of Doctor of Philosophy in Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Use of natural science: an ability to understand and make use of the trend of fundamental research of natural science with a broad vision.	Can understand and utilize the trend of basic research in various fields of natural science with a broad vision?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Advanced research ability relating to biology: advanced research ability to establish/carry out biological research process.	Having an ability to logically grasping the biological world and phenomenon, an ability to establish the process from problem setting to problem solution and an advanced research ability to appropriately carry out research process?
	8. Total ability as a PhD in Science: an ability to achieve international results.	Having research ability to achieve internationally acceptable academic results, presentation ability, communication skills and an ability to create dissertation?
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement assessments based on the "Competence Achievement Evaluation Sheet". This process objectively verifies and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. The stages and methods of achievement assessment are outlined below. At the end of the second-year fall semester, the primary and secondary advisors conduct an interim assessment. This provides a comprehensive evaluation of whether the student meets the competences regarding research progress, related knowledge, and presentation skills. In the middle of the third year's fall semester, the Preliminary Review Committee conducts a preliminary thesis review (closed). This confirms the student's learning status and provides guidance toward the final achievement assessment. After passing the preliminary review, students who submit their final thesis undergo a doctoral thesis review (public) conducted by a thesis review committee composed of the primary supervisor and at least three secondary supervisors. Concurrently with the final review, a final achievement evaluation is conducted. At this time, students are required to document competences related to activities beyond coursework, such as research activities (international collaborative research, experience presenting at domestic/international conferences), participation in various workshops, and involvement in organizing academic societies or research meetings. This actively evaluates independent learning and research activities.	

Evaluation Criteria for Degree Theses/ Dissertations	The dissertation that satisfies all the following items shall be a pass as the dissertation for doctoral degree after going through preliminary examination, dissertation examination and final examination. The preliminary examination shall be performed by the preliminary examination committee composed of one chief examiner and three sub examiners, dissertation examination and final examination by dissertation examination committee composed of one chief examiner and three sub examiners, respectively. Additionally, as appropriate the faculty member(s) of other doctoral programs and the ones from other universities are able to participate in such examination as sub examiner(s). 1. If the real problems of biology are set with the basic scientific view or a view that anticipate their applications. 2. If the research methods such as theory, experiments and surveys used to explore problems and the methods to analyze the data acquired is scientifically appropriate in light of international standard. 3. If the points of argument from problem setting to conclusions are demonstratively and logically deployed in English. 4. If internationally competent academic results for the problems set are acquired and the basic principle behind problems are elucidated or the methods to solve the problems with a view that anticipate their applications. 5. If the dissertation is presentable as a dissertation for doctor's degree.

Curriculum Policy

Based on understanding diversity of the biological world, in order to acquire advanced ability to elucidate the basic principle of biological phenomenon, the curriculum shall be organized which is composed of eight area of expertise including Taxonomy & Evolution, Ecology, Plant development & physiology, Animal development & physiology, Molecular cell biology, Genome informatics, Advanced cell biology (cooperated graduate school), Advance molecular biology (cooperated graduate school).

Curriculum Design Framework	– In Seminars of each area of expertise, intensive reading of the newest and latest articles shall be performed. Through this, bioethics, research management ability and communication skills shall be acquired, basic natural scientific understanding of life ethics and life phenomena shall be deepened. Additionally, advanced research ability relating to biology (ability to foresee, ability to analyze, presentation ability) shall be acquired. – The methods to create research dissertation /doctoral dissertation in Thesis Research of each area of expertise shall be instructed. Through these, examination of validity of the conclusions derived from the actual experiments/research and comparison with the preceding research shall be instructed and an ability to achieve international results (total ability as a doctor) shall be trained.

Teaching and Learning Methods	– The standard learning year shall be three years. As the requirements to complete doctoral degree, it is necessary to acquire 12 or more credits of Seminars and Thesis Research in each area of expertise, to put the research outcomes together in doctoral dissertation and to pass the final examination. – One faculty member appointed by the program leader and two or more faculty members related to the research field shall be sub-supervisors. – Through research supervision system (advisory committee) by three or more sub supervisors in addition to practical education/research supervision by supervisor, the learning effects and research progress of students and the situations of their courses etc. shall be supervised. The advisory committee member can be participated from other doctoral programs as necessary.

Admission Policy

Desired Student Profile	The desired student shall be the one who has a deep interest in biological world and phenomenon, finds the real problems with strong sprit of inquiry, has motivation to work on solution for such problems and have communication skills to be able to explain the research outcomes and activities in a way easy to understand and foreign language skills to be able to transmit them to the world.
Student Selection Process	Various kinds of selection methods, such as general entrance examination (for the applicants from University of Tsukuba and other universities), special selection of international students and special selection of working individuals etc., shall be adopted. Through the document submitted and oral examination and the results of the interim examination of the master's course etc., the following abilities shall be evaluated: – For the applicants from University of Tsukuba (general entrance examination and special selection of international students), high basic knowledge and research ability, and suitability relating to biology shall be evaluated by the interim examination of the master's course etc. – For off-campus students (general entrance examination and special selection for international students), high basic knowledge about biology, research ability, and aptitude will be evaluated by submitted documents and oral examination, and English language ability will be evaluated by the score of the English proficiency test.

Learning Support Framework

Academic Support	The primary and secondary advisors provide guidance on presentations and thesis writing. They also offer support for managing research time. Furthermore, they actively encourage participation in events such as the Japan-China-Korea International Graduate Student Academic Forum, Global Science Week, and academic society annual meetings, while providing instruction to enhance presentation skills.

Opportunities for Peer Interaction	Seminars involving multiple laboratories provide opportunities for student exchange. Furthermore, the Graduate Student Association organizes poster sessions and networking events, actively encouraging participation from students and faculty both within and outside the degree program. To foster interaction with students outside the university, students present their research findings at academic conferences and research meetings, thereby enhancing their motivation to learn and improving the quality of their research.
Opportunities for Student–Faculty Interaction	Orientation session for incoming students is held to provide opportunities for interaction with faculty members. Additionally, Graduate Student Association takes the lead in organizing poster presentations and social gatherings, actively encouraging faculty participation to foster interaction between faculty and students. Furthermore, preliminary thesis review sessions are conducted publicly, encouraging active participation from both students and faculty to create opportunities for interaction.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee shares information on final-year students' research activities (publication of papers, awards received, international collaborative research, presentations at domestic and international conferences, etc.) and discusses whether the quality of education provided to students is assured. Additionally, student surveys, graduation rates, and employment status are shared at the Education Council, where challenges and improvement measures are discussed. Furthermore, faculty participation in the Master's Thesis Preliminary Review Committee is encouraged to stimulate more active discussion.

Doctoral Program in Agricultural Sciences

Doctor of Philosophy in Agricultural Science

Program Educational Objectives

Highly specialized professionals/researchers who acquire a broad knowledge in agricultural sciences comprehensively, and issue-pursuing and problem-solving abilities, and the capability to independently conduct research, providing grounds for solving problems related to agriculture, food, environment on a global scale.

Graduate Profile	Through this program, the human resources who can propose/implement internationally consistent solutions for global issues, and the ones that guarantee the sustainability of local communities for domestic problems, in governmental organizations as well as industries. Furthermore, such human resources shall be the resources for research/education in universities.

Diploma Policy

The degree of Doctor of Philosophy in Agricultural Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Ability to execute research: an ability to be equipped with the latest expertise in agricultural sciences and set/carry out creative research tasks.	①If having the research outcomes that can be regarded as creativity of new knowledge based on accurate learning in the area of expertise. ②If capable of expecting creativity of knowledge that contributes to sustainable development of agricultural sciences

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge and Operational power: Leading-edge and advanced specialized knowledge and command of the agricultural sciences	①If being equipped with a broad expertise in the area of agricultural sciences. ②If capable of acquiring leading edge and advanced specialized knowledge in the area of expertise and utilizing it for research and problem solving.
	8. Ability to implement research outcomes in society: ethical view and ethical knowledge appropriate for researchers in agricultural sciences and deep ethical knowledge in the area of expertise.	①If sufficiently understanding and complying with the procedure necessary for ethics for researchers and ethics for engineers and research. ②If having deep interest and knowledge for ethical issues relating to the area of expertise
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes will be conducted using a “competence sheet” to objectively confirm and evaluate the acquisition of competences based on the Diploma Policy at each of the following stages. The stages and methods of assessment of achievement are shown below. At the end of the first and second year, the evaluation of attainment is confirmed by the supervisor and by the all members at the Preliminary Examination Committee to confirm that all the competences stipulated in the degree program have been met. At the doctoral dissertation review, the dissertation is confirmed by the all members of the commitee and reported at the degree program meeting.	
Evaluation Criteria for Degree Theses/ Dissertations	The dissertation that satisfies all the following items shall be a pass as the thesis for doctoral degree after going through final examination in doctoral thesis examination committee composed of four or more members. 1. If The research tasks of the dissertation is clearly indicated and has academic or social significance in the related area of agriculture sciences doctoral program. 2. If the literature and data used shall be appropriately presented and evaluated upon exploring research tasks and appropriately referred for development of points of argument. 3. If the research methods such as theories, experiments, surveys, simulation and trial production/ preliminary trail etc. adopted in order to explore research tasks are appropriate. 4. If the points of argument from problem setting to conclusion are unfolded demonstratively and logically. Additionally, if the conclusions derived have novelty and social utility in the relevant area of agricultural sciences degree program. 5. If the dissertation is presentable as a thesis for master's degree.	

Curriculum Policy

In each area of expertise relating to agricultural science as a comprehensive science, the curriculum shall be organized in order to systematically acquire an ability to independently plan and promote research/practices, an ability to integrate and an ability to announce the plans/drafts/doctoral thesis that can receive internationally high evaluation.

< Subprogram in Advanced Agricultural Technology and Science cooperated with NARO >

The scientists who actively work in the front lines of agricultural sciences of National Agriculture and Food Research Organization (NARO) as national research and development agency who are teachers of the Cooperative Graduate school. The students can acquire advanced agricultural technology such as establishment of comprehensive technology system to support basic structure of industry of agriculture in Japan and vitalization of local communications to realize sustainable food supply.

Curriculum Design Framework	– The curriculum shall be organized for the students in order to acquire professional ability relating to bioresources such as food and environment/resources/energy etc. and to cultivate an ability to conclude for problem solving on a global scale, research conducted from a global vision and an ability for localization to connect between the sites that have individually different situations. – The curriculum shall have students acquire communication skills, response capabilities to ethical issues, management ability and a quality of leadership by acquiring two or more credits of Graduate General Education Courses other than the Dissertation as compulsory courses. – The curriculum shall have students enhance international communication skills through area observation and surveys in foreign countries by overseas area practical training and motivation to the world through agricultural sciences.
Teaching and Learning Methods	– The students shall acquire deep understanding of specialized knowledge and presentation ability/communication skills, high ethical view in research activities and an ability to solve the issues of high needs in society by setting the Dissertation as compulsory courses, and conducting lectures of bidirectional and interactive lectures between small number of supervisors/graduated students. – By encouraging students to participate in lectures and submit thesis to international journals, the instruction to acquire international communication skills with English ability shall be provided.

Admission Policy

Desired Student Profile	The desired student shall have basic and applied research grounds with both creativity and specialization that leads various areas in agro-biological resource sciences, and both global vision to be able to deal with current/international issues regarding food, population and environment and ability to flexibly think from bird's eye to the future, and motivation to contribute to human society.

Student Selection Process	– Various kinds of selection methods, such as general entrance examination (International Agricultural Research Program), special selection of working individuals and, special selection of international students etc., shall be adopted. – Based on evaluation of foreign language skills necessary for international activities and evaluation of an ability for self-expression by oral examination, research ability relating to the area of expertise, appropriateness of research plan, the human resources suitable for this Degree Program shall be selected. – For educational program in English and working people, Early Completion Program which students can complete learning in one year is ongoing.

Learning Support Framework

Academic Support	The supervisors provide writing support for refereed academic papers and presentation guidance for presentations at domestic and international conferences. They also provide guidance related to the improvement of research skills through various seminars and other means, and support related to student life to improve the academic environment. An advisory committee consisting of at least three faculty members, including the supervisor is organized to provide guidance and advice on course planning, check the progress of research, and provide advice on research content from a professional standpoint.
Opportunities for Peer Interaction	With regard to the motivation to study and the quality of research, small-group interactive seminars are held within research groups, where graduate students give presentations and discuss, deepen mutual understanding, and learn about each other's research progress, research achievements, and results, which motivates them to study. Orientation at the time of admission and doctoral dissertation briefing sessions for final year students are held to provide opportunities for students to discuss with each other.
Opportunities for Student–Faculty Interaction	The Advisory Committee, consisting of at least three faculty members, meets regularly to provide opportunities for students and faculty members to discuss the progress and direction of their research. In addition, students and faculty members give small-group interactive lectures and students present their research in the compulsory classed, Dissertatoin I-III, and students have opportunities to interact with faculty members on a regular basis. Students have opportunities to interact with other faculty members in the program at the orientation at the time of admission and at the doctoral dissertation presentation for final-year students.

Approaches to Assuring and Enhancing Educational Quality

The program steering committee discusses the draft annual FD plan prepared by the FD committee members and discusses issues and policies for improvement regarding the assurance and improvement of the quality of education. At the beginning of the academic year, an FD seminar organized by the program is held to review the three policies in the Tsukuba Standards of the Dgree program of Agricultural Science with all Faculty members and discuss issues. In addition, the draft of the syllabus is discussed and approved by the degree program meeting and posted on the official website. The grading standards for the compulsory classes, Dissertaion I-III, will be reviewed and evaluated annually at the program meeting. Publicatoins in the international journals, presentation at dometic or international conferences and thesis presentations, which are the basis for grading, will be submitted by each student to the degree program as a list of achievements at the time of the thesis submission, and the degree program will compile the results for each academic year. At the program meeting, the establishment or modification of the Advisory Committee will be discussed and the research support system will be confirmed. In addition, the quality of education and the support system will be verified by having the supervisor report on the implementation of the Advisory Committee at the degree program meeting and having the supervisor explain the progress of each student. In addition, the quality and improvement of education will be discussed at the degree program meeting by reviewing the graduate student questionnaires, class questionnaires, etc. At the educational conference, student learning outcomes are assessed to verify the appropriateness of the curriculum and the adequacy of instruction.

Doctoral Program in Life and Agricultural Sciences

Doctor of Philosophy in Life and Agricultural Sciences

Program Educational Objectives

The researchers and faculty members that can achieve a molecular-level understanding of biological phenomena controlled in cells and living organisms, acquire specialized ability to be able to implement technology development for the purpose of utilization of such functions and to be able to contribute to stabilize living foundation and sustainable development of human beings.

Graduate Profile	In the area of life and agricultural sciences, the persons that have a broad knowledge and interdiscipline relating to elucidating the biological functions and their utilization and that can play an internationally active role by creative research.

Diploma Policy

The degree of Doctor of Philosophy in Life and Agricultural Sciences is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Competence to execute research: an ability to independently set research tasks and to plan/carry out the research in the area of life and agricultural sciences.	①If capable of setting leading-edge research tasks based on the latest expertise in the area of life and agricultural sciences. ②If capable of drafting research plan to solve the research tasks and carry out the research along them.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge and ethical view: sufficient specialized knowledge in the area of life and agricultural sciences and high ethical view in research activities.	①If having acquired leading edge and advanced specialized knowledge in the area of life and agricultural sciences. ②If having acquired ethical view and ethical knowledge suitable for the human resources that have basic research ability in the area of life and agricultural sciences.
	8. Competence to publicize research outcomes: an ability to publicize the research outcomes that can receive internationally recognition.	If having compiled and published, original, cutting-edge research in an international peer-reviewed academic journal as the first-author.
	9. Adaptability to conduct research: adaptability to societal needs in the area of life and agricultural sciences.	①If capable of broadly understanding social needs in the area of life and agricultural sciences. ②If capable of providing proposals to solve other research tasks in the area of life and agricultural sciences.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted objectively based on the “Competence Sheet”, which assesses the level of attainment corresponding to each stage and verifies the student's competence acquisition as defined in the diploma policy. The stages and methods of the achievement evaluation are outlined below. At the end of the fall semesters of the first and second year, the Advisory Committee conducts interim evaluations, comprehensively assessing whether the student meets competence standards regarding research progress, related knowledge, and presentation skills. At the mid of the fall semester of the third year, a preliminary doctoral dissertation review (closed) and a public presentation are conducted. The second achievement evaluation is undertaken by a Preliminary Review Committee composed of the Advisory Committee plus one additional faculty member appointed by the Degree Program. The committee also provides guidance toward the final achievement evaluation. Following successful completion of the preliminary review, the doctoral dissertation submitted for the final examination is evaluated by a Dissertation Review Committee consisting of the principal examiner and at least three co-examiners. Concurrently with the final dissertation review, the final achievement evaluation is conducted. Furthermore, the research activity report collected in the final year (covering international collaborative research and domestic/international conference presentation experience), along with the doctoral dissertation report, will be used to actively evaluate independent learning and research activities outside of coursework.	

Evaluation Criteria for Degree Theses/ Dissertations	The thesis that satisfies all the following items shall pass as a thesis for a doctoral degree after going through a preliminary examination, thesis examination, and final examination. The preliminary examination shall be performed by a committee composed of the candidates of members of the thesis examination committee (one chief examiner and three or more sub examiners). The thesis examination and the final examination shall be performed by the thesis examination committee (one chief examiner and three or more sub examiners). 1. If the research was independently carried out by the applicant and a logical and new scientific academic thesis written solely by the applicant. 2. If the thesis contains research outcomes with creativity, novelty, and high academic values in an academic area relating to life and agricultural sciences. – Preliminary examination: the preliminary examination committee composed of the candidates of members of the thesis examination committee (one chief examiner and three or more sub examiners) shall examine the content and style of the dissertation thesis and provide instruction for its modifi cation etc., as necessary. Additionally, the contents of the thesis shall be presented and the questions and answers relating to relevant matters shall be conducted. The instructors in other doctoral programs shall participate in the preliminary examination committee, as necessary. – Final examination: Public presentation shall be performed in the presence of the thesis examination committee members to have the students present the contents of the doctoral thesis and the questions and answers shall be conducted. Subsequently, the final examination shall be conducted by oral examination, not to open to the public. The examination standard shall be as follows: 1) If having an ability to independently plan/carry out the research, and to publicize research outcomes which can acquire internationally high evaluation, using suffi cient knowledge and high ethical view relating to academic area of the doctoral thesis. 2) If having research/education ability to solve the issues of high needs in society in the academic area relating to life and agricultural sciences and communication skills to have a perfect command for negotiation in international society.

Curriculum Policy

The curriculum shall be organized for the students to systematically acquire the ability necessary to independently conduct research with a view that anticipates its applications in each respective research area of life and agricultural sciences.

Curriculum Design Framework	By providing advanced education in the area of life and agricultural sciences through Dissertations I to III in each research area as compulsory courses and providing instruction on conducting research by setting research tasks related to life and agricultural sciences by plurality of instructors (the chief supervisor of other degree programs shall participate as necessary), the expertise and its research methods shall be learned. Additionally, through completion of Seminar in Life and Agricultural Sciences, beyond the research area for each student, the ability to solve problems in broader areas of life and agricultural sciences shall be trained. Furthermore, through completion of Graduate General Education Courses etc., enhancement of communication skills, an ability to respond to ethical issues, management ability, educational ability and leadership ability etc. shall be promoted.

Curriculum Design Framework	＜ Major Subjects ＞ – Dissertation I：An ability to understand/grasp the problems in each research area and an ability to set research tasks and plan/carry out research shall be acquired. – Dissertation II：An ability to carry out research and to logically think shall be enhanced. Additionally, through presentation of research outcomes in international conferences etc., English ability and presentation ability shall be acquired.
Curriculum Design Framework	– Dissertation III：An ability to publicize research outcomes to international academic journals by compiling them. – By working on research through Dissertations I to III, knowledge of each research area and high ethical view in research activities shall be acquired. – Practical Training for Life and Agricultural Sciences: An ability to be able to contribute to sustainable development of the world with a broad view. ＜ Education/Research supervision ＞ – From enrollment to completion, through education/research supervision received by the advisory committee composed of a plurality of instructors (the chief supervisor of other degree programs shall participate as necessary), specialized knowledge/abilities in general required for degree awarding shall be acquired.
Teaching and Learning Methods	– The standard registration year of Dissertations I, II and III shall be the 1st year, the 2nd year and the 3rd year, respectively. By having students register systematically, the specialized knowledge/ability required for degree awarding shall be acquired in order. – The standard registration year of Seminar in Life and Agricultural Sciences shall be the 2nd year, in which an ability to solve various issues in the area of life and agricultural sciences shall be trained and each research issue and its meaning shall be understood from a higher perspective. – The advisory committee composed of three or more instructors shall be established upon enrollment and continuously provide education/research instructions for the students until completion of the degree course. – The advisory committee shall have the students register Graduate General Education Courses etc., as necessary. – The advisory committee shall have the students carry out the interim presentation at the end of the 2nd year in principle, and provide advice toward confirmation of progress status of research and compilation of dissertation thesis etc.

Admission Policy

Desired Student Profile	The desired students shall have an interest in and knowledge of various life-sience phenomena in animals, plants, and microorganisms, motivation in the exploration of basic sciences that are useful in solving problems in the area of life and agricultural sciences and its application, and be able to logically, accurately, and clearly explain the research outcomes etc.

Student Selection Process	– Selection by oral examination shall be carried out. – In oral examination, the applicants shall present their master's thesis and the contents of their research so far, and research plan etc. after enrollment. By conducting questions and answers, basic/application ability, and research ability etc. shall be evaluated. Through these, the human resources suitable for this Degree Program shall be selected. – Working individuals and foreign students who aim at acquiring the doctoral degree as well as the students who enter immediately after completion of the master's degree shall be broadly accepted.

Learning Support Framework

Academic Support	In addition to guidance from the Advisory Committee, active participation in the Japan-China-Korea International Postgraduate Academic Forum and the Tsukuba Global Science Week is strongly encouraged, with Faculty members provided to enhance English presentation skills. Students will also present posters at information sessions of graduate school to foster awareness of the importance of research.
Opportunities for Peer Interaction	Students are expected to collaborate with peers in the Seminar of Life and Agricultural Sciences to design and plan projects. Institutional support will be provided for implementation in order to promote interaction among students with diverse academic interests and to cultivate broad, interdisciplinary perspectives. Doctoral thesis presentations will be held publicly, encouraging active participation from students and faculty outside the degree program. Students independently plan and manage the Japan-China-Korea International Postgraduate Academic Forum.
Opportunities for Student–Faculty Interaction	Orientation for incoming students and doctoral thesis briefings for final-year students are held to create networking opportunities. Beyond regular interactions facilitated by the Advisory Committee, participation in Seminars of Life and Agricultural Sciences from other laboratories is encouraged to foster exchanges with faculty from different research groups.

Approaches to Assuring and Enhancing Educational Quality

At the end-of-year educational meeting, share the research activities of graduating students (including international collaborative research and presentation experiences at domestic/international conferences), along with student surveys, course evaluation questionnaires, graduation rates, and employment status, and discuss challenges and improvement measures. Additionally, encourage faculty participation in the public doctoral thesis presentation sessions to stimulate lively discussion.

Doctoral Program in Bioindustrial Sciences

Doctor of Philosophy in Biotechnology

Program Educational Objectives

Based on bioindustrial sciences, the researchers shall be trained that have a research and development ability that can contribute to creation of novel bioindustry technologies and creation of new technologies and intellectual property rights etc. to ensure/distribute/use bioresources as their materials.
Additionally, also in the social scientific aspects, such as international transaction and various kinds of regulations essential for industrial usage of bioresources and technological support/transfer to the developing countries, correspondence to social acceptance etc., the researchers shall have an ability to aim at solving problems while seeing the relationship with life ethics and protection of biodiversity with bird's eye, and practical intention with international leadership of specialized engineers and policy makers.

Graduate Profile	The desired student shall have a research and development ability that can contribute to creation of novel industry technologies and intellectual property rights etc. to ensure/distribute/use bioresources as their materials from a view of bioengineering and thorough knowledge of life ethics and protection of biodiversity as the factor unique to “life” industry and the situations of various countries relating to various regulations of environmental impact assessment etc. who is of global standard and have leadership that can also respond to practical instruction of technology transfer and international strategy/policy making with their research ability/knowledge.

Diploma Policy

The degree of Doctor of Philosophy in Biotechnology is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research ability: high knowledge and ability that can contribute to problem setting and creation of knowledge in bioengineering.	①If having acquired high knowledge in the area of biomaterials and broad basic knowledge in relevant area. ②If conducting problem setting by appropriately grasping R&D trend inside and outside Japan and having ability to be able to contribute to creation of new technologies and intellectual property rights etc.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Adjusting ability: deep understanding of international regulations etc. in the area of bioengineering and ability of problem-solving as the basis.	①If having deeply understood various regulations etc. relating to life ethics and protection of biodiversity in international interaction and correspondence to regulation etc. in the area of biomaterials. ②If having an ability to aim at internationally solving problems while ensuring accountability.
	8. Leadership ability: an ability to take the leading position in industry creation and correspondence to society, and transfer of industry etc. in the area of bioengineering.	①If having acquired the knowledge to be able to ensure social correspondence/accountability relating to ensuring/distributing/using bioresources as the foundation in the area of biomaterials. ②If having an ability to be able to take leading position of engineers and politicians of various countries in creation of industry, technology support/transfer etc.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted objectively based on the “Competence Sheet”, which assesses the level of attainment corresponding to each stage and verifies the student's competence acquisition as defined in the diploma policy. The stages and methods of the achievement evaluation are outlined below. At the beginning of the spring semester of the second year, a mid-term review is conducted, during which the Advisory Committee carries out the first achievement evaluation based on the established rubric. At the beginning of the fall semester of the third year, a preliminary doctoral dissertation review (closed) and a public presentation are conducted. The second achievement evaluation is undertaken by a Preliminary Review Committee composed of the Advisory Committee plus one additional faculty member randomly appointed by the Degree Program. The committee also provides guidance toward the final achievement evaluation. Following successful completion of the preliminary review, the doctoral dissertation submitted for the final examination is evaluated by a Dissertation Review Committee consisting of the principal examiner and at least three co-examiners. Concurrently with the final dissertation review, the final achievement evaluation is conducted.	

Evaluation Criteria for Degree Theses/ Dissertations	The thesis that satisfies all the following evaluation items shall be a pass as the thesis for doctoral degree after going through the final examination. The final examination shall be conducted by the thesis examination committee composed of one chief examiner and three or more sub-chief examiners through peer-reviewing of the thesis and oral examination. 1. Title: The research outcomes are appropriately indicated. 2. Research purpose: The relationship with the research tasks after comprehensively grasping the previous research inside and outside Japan is specified, and creativity/progress of research is clearly extracted. 3. Research method: the research method is properly selected and can be verified by the third parties. In the selected research method, various regulations and research ethics are complied with. 4. The research is performed according to research outcomes/ consideration/research methods and clearly presented by charts and tables etc. In light of the conventional knowledge, consistent academic interpretation is provided. In handling the data, various regulations and research ethics are complied with. 5. Conclusions: it is concluded that the contents of the research will bring new development in the said research area. 6. The citation and use of the literature/data is appropriate and the research ethics is complied with.

Curriculum Policy

This Degree Program has the characteristics of its education to train the doctors with practical intention who has thorough knowledge in the aspect of social science such international interaction and correspondence to regulation, social acceptance etc., focusing on “creation of novel bioindustry technologies” and “security” / “distribution” / “use” of bioresources as its material, based on R&D ability that can contribute to creation of new technologies in bio engineering area and intellectual property rights etc.

Curriculum Design Framework	The R&D ability shall be acquired that can contribute to creation of new technologies relating to creation of novel bioindustry technologies and security/distribution/use of bioresources as its material and intellectual property rights etc. Additionally, by setting a part of courses as the required ones, active interaction among students whose mother countries and original organizations are different shall be promoted, and the difference of social conditions and demand by industries, and possessed resources and regulations etc. shall be experienced, and global awareness shall be refined. With the research ability/knowledge acquired through such consistent curriculum, the doctors with international leadership by which problem solving can be aimed at from both aspects of natural science and social science in the area of bioengineering.

Curriculum Design Framework	– By Special Research in Bioindustrial Sciences IA, IB, IIA, IIB, the students shall perform the research activities in the students' own area of expertise, achieve the research outcomes suitable for the doctoral degree, and present their academic thesis. Through these, the students shall have deep knowledge, set the problems after appropriately grasping the trend of R&D inside and outside Japan and acquire a high R&D ability to be able to contribute to creation of new technologies and intellectual property rights etc. – By Bioindustrial Sciences Seminar IA, IB, IIA, IIB, IIIA, IIIB, the students shall deepen the knowledge in the students' own area of expertise and acquire an ability to set the problems after appropriately grasping the trend of R&D inside and outside Japan. Additionally, the students shall have a broad vision in other areas relating to bioindustrial sciences and an ability to be able to flexibly correspond to the problems of the areas other than their specialized ones as well. – By “Advanced International Bioindustrial Science” as the required course, the students shall acquire an ability to aim at internationally solving problems while seeing the relationship with life ethics and protection of biodiversity with bird's eye. Additionally, by setting this course as a required course, active interaction and discussion among students whose mother countries and original organizations and research areas shall be promoted. Through these, the students shall refine global awareness and acquire an ability to be able to flexibly respond to global issues. – By “Regulatory Aspects in Bioindustry” as Foundation Subjects for Major, the students shall understand various regulations etc. essential for industrial use of bioresources more deeply and have an ability to ensure accountability in international transaction and social correspondence etc. and to respond to adjust themselves. – By “ Transfer of Industrial Technique on Life Science” as Foundation Subjects for Major, the students shall deepen their understanding of creation of bioindustry, social correspondence relating to security/distribution/use of bioresources, accountability from scientific knowledge and technological support/technological transfer etc. to developing countries and acquire a management ability to be able to the leading position as professional engineers and policy makers in various countries.

Teaching and Learning Methods	The advisory committee composed of three or more instructors shall be established for each student upon enrollment and continuously provide education/research instructions until completion of the degree course. The advisory committee shall conduct the interim evaluation held in the 2nd year in order to confirm the progress status of research and degree of learning achievement. Additionally, as necessary, it shall indicate additional registration of courses. The advisory committee shall participate in other master' programs, as necessary. – At the time of enrollment, the students shall learn Advanced International Bioindustrial Science, in which they can acquire an ability to adjust/instruct to aim at problem solving relating to international industry use of bioresources and active exchange and discussion with various human resources in various countries shall be promoted. – By having students register the seminars systematically from the 1st year to 3rd year, the specialized knowledge/ability required for degree awarding shall be acquired in order. – By confirming the degree of learning achievement in accordance with the interim evaluation and preliminary examination etc., and providing advice, the students shall be trained in order to be consistent with the human resources who are required for degree awarding of this Program.

Admission Policy

Desired Student Profile	The desired students shall have the specialization in the area of bioengineering as a matter of course, a broad culture, the intention to internationally proceed research/work, and desire to have foreign language skills and communication skills that enable sufficient communication within international research groups and organizations. As for working individuals, the desired persons shall have international leadership in addition to enhancement of specialization and seek for communication skills and management ability to be able to take leading position of engineers and politicians of various countries. For the purpose of severe selection of the capacities of entrants, the oral examination by “interview form of “task presentation type” shall be focused on. Additionally, in order to check English ability, the oral presentation in English shall be set. While focusing on if the intention/ability of the student is consistent with the human resources training policy in this Program, the human resources shall be selected according to the purpose of this Specialized Course.
Student Selection Process	– The following shall be measured: if the student can logically, accurately and clearly explain the research contents conducted so far and the actual results of business practices etc. such as the master's course with the fixed time. Additionally, if the questions and answers are appropriate. – Regarding the research policy after enrolling the doctoral course, the following shall be measured: if the academic significance of the research, its detailed methods, and its expected results shall be able to be explained, based on the relationship with the relevant research. – Through questions and answers, consistency between intention/ability of the examinee and the human resources training policy in this Program, his/her motivation, his/her basic academic skills, English ability and balance in personality etc. shall be comprehensively measured.

Learning Support Framework

Academic Support	In addition to guidance provided as needed by the Advisory Committee, a “Presentation Skills Improvement Course” is offered to enhance English presentation skills, as part of the Japan-China-Korea International Postgraduate Academic Forum organized by the Degree Programs.
Opportunities for Peer Interaction	In the compulsory lecture course ""Advanced International Bioindustrial Science", group presentations and Q&A sessions are incorporated to foster interaction among students. Doctoral dissertation defense sessions are held publicly, encouraging active participation from students and faculty beyond the degree program. In addition, in the the Japan-China-Korea International Postgraduate Academic Forum organized by the Degree Programs, students themselves plan and manage the event, thereby gaining opportunities for international exchange with students both inside and outside the university.
Opportunities for Student–Faculty Interaction	Orientation sessions for new students and dissertation briefing sessions for final-year students are held to promote interaction. In addition to interactions with the Advisory Committee as needed, opportunities for faculty-student engagement are provided through required lecture courses such as "Advanced International Bioindustrial Science" (team-taught by multiple faculty members) and joint seminars held by multiple laboratories. Furthermore, in the “Presentation Skills Improvement Course” conducted as part of thethe Japan-China-Korea International Postgraduate Academic Forum, faculty members from the Degree Programs serve as advisors, offering guidance and advice. These initiatives provide opportunities for interaction with faculty beyond the framework of the degree program.

Approaches to Assuring and Enhancing Educational Quality

- At the beginning of each academic year, the Education Committee evaluates students' learning outcomes and examines the appropriateness of the curriculum and the effectiveness of instruction.
- An agenda item titled “Faculty Development (FD)” is included in the deliberations of the Education Committee. Faculty members who participated in university-wide or School/Cluster-organized FD seminars provide feedback to the committee. In addition, course evaluations are conducted each semester for all subjects, and the results are shared as indicators for improving course content. Through these continuous processes of review and improvement of all educational activities, the program ensures the quality of education and strengthens the organizational framework necessary to achieve the objectives of the Degree Program.

Doctoral Program in Geosciences

Doctor of Philosophy in Science

Program Educational Objectives

The students who understand various global natural phenomena in the past and at present, have advanced expertise and research capabilities that can contribute to solution of various problems on a global scale, and can contribute to the scientific development of Japan as researchers who can internationally play an active role.

Graduate Profile	– The person with both a wide basic knowledge and outstanding expertise. – The person with an outstanding ability for areawork or a high ability for experiments/data analysis. – A person with problem-solving skills concerning geoscientific issues. – The person with distinguished foreign language skills and communication skills. – The person with an ability to teach in higher educational institutions such as universities. – A person with a high ethical perspective for research activities.

Diploma Policy

The degree of Doctor of Philosophy in Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Knowledge and comprehension ability: a highly specialized knowledge and comprehension ability related to geoscience.	①If capable of setting a specialized research tasks related to geoscience. ②If capable of planning and executing specialized research plan related to geoscience.
	7. Planning ability: an outstanding planning ability to set a specialized research tasks and form a distinguished research program to execute.	①If having an advanced expertise related to geoscience. ②If having comprehensively understood the basic principle behind various events behind geoscience.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Problem-solving ability: an ability to confront various issues and solve the problems by exploring the basic principle behind them.	①If capable of recognizing various problems related to geoscience. ②If capable of solving various problems related to geoscience.
	9. Expressiveness: an ability to express themselves based on outstanding foreign language skills and communication skills.	①If having outstanding language skills. ②If having communication skills to enable students to express the research outcomes relating to geoscience by themselves.
	10. Creativity: a distinguished creativity to confront various issues in high demand for expertise with a fresh view, and apply results obtained from research.	①If capable of tackling various issues from a new viewpoint related to geoscience and achieving research outcomes. ②If having creativity to apply the research outcomes related to geoscience.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement-level assessments based on the "Achievement Assessment Rubric". At each of the following stages, the level of acquisition of competences stipulated in the Degree Award Policy is objectively verified and evaluated: – Semester-by-semester reviews of research progress conducted by the Advisory Committee – A midterm review conducted at the degree program – A preliminary review conducted at the degree program – A public thesis defense and the final examination conducted by the Thesis Examination Committee	

Evaluation Criteria for Degree Theses/ Dissertations	The thesis that satisfies all the following evaluation items shall be a pass as the thesis for doctoral degree after going through the final examination. Additionally, the thesis shall be examined by the committee for master's thesis review (composed of one chief examiner and two or more sub examiners). While the instructor shall be the sub-examiner in charge of master's program in geoscience, the instructors in charge of other degree programs can participate in such examination. 1. If the submitted doctoral thesis is extremely high in degree of completion including descriptions, logic expansion and charts. 2. If the level of the contents of doctoral thesis is internationally high as the research in the area of geosciences. 3. If the references are appropriately cited for the doctoral thesis. 4. If contribution to the research contents of doctoral thesis by the applicant of master's degree has been sufficiently recognized. 5. If academic rank, contents and future developments of doctoral thesis are sufficiently understood. 6. If questions and answers are properly carried out in presentation.

Curriculum Policy

In this Degree Program, subject to the students who have the knowledge to complete the master's degree relating to geoscience, the curriculum shall be organized aiming at training the human resources that research the process and mechanism of various phenomena in global environment, or earth evolution from the birth of the Earth up to the present, have an ability to gain a comprehensive elucidation from various aspects including human environment and can internationally play an active role. For this purpose, this Degree Program is composed of area of expertise (including cooperated graduate school) necessary for this Degree Program. In all such areas, the curriculum has been organized in order to learn the specialized knowledge relating to specific area necessary to achieve the diploma policy mentioned above and acquire foreign language skills, communication skills, an ability to lead, a problem-solving ability, ethical view.

Curriculum Design Framework	– Regarding setting of course classification, the curriculum shall be divided into “Foundation Subjects for Major” and “Major Subjects”. “Foundation Subjects for Major” shall especially deal with the contents common to the area of earth evolution sciences, and the basic knowledge relating thereto shall be acquired. In “Major Subjects”, thesis research/practical training in each area shall be provided, through whose completion high specialized knowledge in specific research areas can be acquired. – The students aiming at acquisition of doctoral degree can receive highly intensive tutorial in a series of curricula until completion of the degree, by the supervision group composed of the chief supervisor mainly in charge of research instruction and the sub supervisor(s) who cooperate(s) with such research supervision as advisor(s).

Curriculum Design Framework	– Through advanced studies and special lectures in the area of expertise, Communication competence, Leadership competence and an ability to solve problems shall be acquired. – Acquire the abilities of all 10 competences through special exercises in each specialty – Acquire communication skills, leadership skills, and problem-solving skills through internships. – By taking research planning fieldwork courses, Management competence, Communication competence, Leadership competence, research ability, problem-solving ability, ability to explore and presentation ability shall be acquired. – Through Graduate General Education Courses, communication skills and research ethics shall be acquired.
Teaching and Learning Methods	– In the 1st year, Foundation Subjects for Major and the Major Subjects related to each area of expertise (advanced studies/special lectures /exercises/research planning area courses etc.) shall be taken. – In the 2nd year onward, research for creation of the doctoral thesis shall be carried out. Additionally, the students who register in Early Completion Program shall work on creation of the doctoral thesis from the 1st year. – Upon commencing the 1st year, for all the students the advisory committee (research supervision team) composed of the team of a chief supervisor and several sub supervisors shall be established to organize validity and problems of research plan for each student. Additionally, instruction shall be provided to confirm registered courses and acquired credits etc. The advisory committee shall participate in other master' programs, as necessary.

Admission Policy

Desired Student Profile	In any of the area of expertise of geosciences, the desired student shall have basic specialized have the knowledge to Graduate school master's course and above, motivation to deeply explore various natural phenomena on the earth both in the past and at present and have acquired interdisciplinary knowledge for their comprehensive settlement. Especially, the student who has a deep interest in scientifically observing and analyzing natural phenomena and lab tests/observation and field work such as area observation and survey shall be welcomed. It is required that the student shall be willing to study basic science steadily and endeavor to think logically from international vision.
Student Selection Process	– The knowledge and academic skills motivation to research, ability for logical thinking and presentation ability shall be evaluated by document screening and oral examination. – Selection for working individuals (including “Early Completion Program” for working individuals) and entrance examination for overseas double degree program shall be implemented.

Learning Support Framework

Academic Support	Through the advisory committee system, multiple faculty members provide complementary support for students' learning. In addition, financial support is provided through university-wide schemes or program-specific mechanisms to ensure that students can fully engage in their academic activities.
Opportunities for Peer Interaction	By actively promoting discussions and collaboration beyond individual laboratory boundaries at the academic field level, the program encourages interaction with faculty members other than the primary and secondary academic advisors. Opportunities for dialogue are also provided at the degree program level.
Opportunities for Student–Faculty Interaction	Each faculty member reviews their syllabus annually, renewing their awareness of the importance of educational quality. In addition, quality is assured through repeated checks at the degree program level. These efforts are particularly evident in the quality of master's theses, and improvement measures are considered through the thesis review process.

Approaches to Assuring and Enhancing Educational Quality

- The students' learning outcomes are evaluated at educational meetings, advisory committee se-ssions, and five annual research presentation meetings. Through these evaluations, the validity of the curriculum and the appropriateness of academic supervision are examined.
- A Faculty Development (FD) Committee on Academic Affairs has been established to ensure the quality of education by continuously reviewing and improving all educational activities, thereby strengthening the framework for achieving the objectives of the degree program.

Doctoral Program in Environmental Studies

Doctor of Philosophy in Environmental Studies

Program Educational Objectives

The persons who logically elucidate the causes and process of the problems regarding the local/global-scale issues, based on scientific and clinical insight and can suggest the measures for problem-solving from a global view. Along with the specialization and creativity of international standard in sciences, engineering, agricultural science and social science etc, an ability to see from bird's eye, practical ability, an ability for logical constitution, expressiveness, and communication skills shall be cultivated and highly specialized practitioners, researchers and educators who can play an active role as global leaders shall be fostered.

Graduate Profile	– The persons who have high specialization in each area of expertise and an ability to see from a higher perspective relating to general environmental sciences and additionally, who have practical ability and management ability to play an active role as researchers/educators in universities/educators. – Highly specialized practitioners who are engaged in planning and carrying out international cooperation projects etc. by specialization and an ability to see from bird's eye in international institutions, international cooperation agencies and overseas division etc. in firms etc.

Diploma Policy

The degree of Doctor of Philosophy in Environmental Studies is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Specialized comprehension ability/analysis ability: an ability to quantitatively and qualitatively grasp actual conditions, comprehension/analysis ability based on scientific technologies relating to the issues	①If capable of quantitatively and qualitatively grasp actual conditions, comprehension/analysis ability based on basic/practical scientific technologies relating to the issues. ②If capable of carrying out analysis and expectation that leads to problem solving.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Application ability: an ability to consider the purpose and process in order to apply academic knowledge to society.	①If capable of considering scientific technological comprehension/analysis results relating to the issues in connection with problem-solving. ②If capable of investigating by connecting the academic knowledge and social request relating to the issues.
	8. Suggestion ability: an ability to suggest concrete solutions relating to the issues.	①If capable of understanding systems/policies etc. relating to the issues by seeing from bird's eye. ②If capable of investigating and suggesting solutions by respecting the local characteristics etc. relating to the issues.
	9. Ability for problem-solving: an ability to investigate the solutions based on academic knowledge/ social request relating to the issues.	①If capable of understanding quantitatively and qualitatively unbalanced problems of various scales relating to the issues. ②If capable of investigating the process to lead the issues to solutions based on comprehension of local characteristics and global-scaled vision.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through achievement assessments based on the “Achievement Assessment Sheet”. This process objectively verifies and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. The stages and methods of achievement assessment are outlined below. The acquisition status of competences is confirmed once at the end of the first year, once during the mid-term presentation in the second year, and once at the time of master's thesis submission, based on the “Achievement Evaluation Sheet”.	

Evaluation Criteria for Degree Theses/ Dissertations	The thesis that satisfies all the following evaluation items shall be a pass as the thesis for doctoral degree after going through the final examination. 【Evaluation items】 1. The positioning and originality of the academic research outcomes in the said research is clearly described. 2. The data and materials etc. presented are necessary and sufficient to draw a conclusion. 3. The hypothesis, assumption and statement are logic and reasonable. 4. The development of the research outcomes toward relevant areas are available. 【Requirements】 At the time of submitting application for the thesis examination for doctoral degree (upon application for the doctoral degree), the applicants need to publicize one or more first author original papers which the applicant directly relate to the doctoral thesis; however, these shall include the original paper whose publication has been already decided. The original paper shall be publicized in domestic and overseas academic journals. The applications of the doctoral thesis subject to Article 44, Paragraph 2 of School Regulations shall satisfy any of the following requirements; however, these shall include the original paper whose publication has been already decided. (1) In the case of the students of doctoral degree after completing a course of study, such students need to publicize two or more first author original papers which the applicant directly relate to the doctoral thesis; however, these shall include the original paper whose publication has been already decided. (2) In the case of the students of Early Completion Program for working individuals, need to publicize two or more first author original papers which the applicant directly relates to the doctoral thesis. One original paper, which has been published before the admission, is acceptable. 【Examination system】 As the examination system, the preliminary examination committee shall be established, which is composed of three or more faculty members including one or more members of Degree Program Faculty Meeting, other than the chief examiner as a thesis supervisor. The preliminary examination committee shall be held at least once, where the requirements of applications for degree awarding examination shall be confirmed, the contents and presentability of the thesis shall be examined and instruction shall be provided for their modification and then the judgement if the examination for the doctoral thesis shall be worth starting. Additionally, the presentation for the doctoral thesis shall be held in public before and after the preliminary examination committee. The time for the presentation for the doctoral thesis shall be approximately one hour. The applicants shall present the contents of the thesis for approximately 40 minutes and the questions and answers shall be subsequently conducted for approximately 20 minutes.

Evaluation Criteria for Degree Theses/ Dissertations	The examination committee for the doctoral thesis shall be established, which shall be composed of three or more faculty members including one or more members of Degree Program Faculty Meeting, other than the chief examiner as the thesis supervisor of the course. The examination committee for the doctoral thesis can include the faculty members of other graduate schools or the research institutes outside the university.

Curriculum Policy

This Degree Program shall constitute the curriculum to have the students understand and expect the mechanism of generation of regional- and global-scale issues, intend to present their solutions and cultivate an ability to collect/analyze information, communication skills, practical ability and an ability to suggest based on bird's eye view for the specialization and issues of sciences, engineering, agricultural science and social science etc. In detail, in order to acquire comprehensive/analysis ability, ability to correspond to issues and ability to suggest required for diploma, especially the ability to solve the problems including water resources/ aquatic environment, living resources/biodiversity, urban problems, disaster/disaster prevention etc., emphasis shall be put on fostering the ability necessary for contribution of problem solving based on the foundation and specialty of sciences, engineering, agricultural science and social science, with the ability to see from a higher perspective.

Curriculum Design Framework	Advanced knowledge and international competence/innovativeness for the research for the doctoral thesis relating to environmental sciences shall be tested/evaluated in the course of the educational program and by these, the students can get credits. Through these, specialization, macroscopic visibility and analysis ability etc. necessary for internationally competent doctors (environmental sciences) shall be secured. Additionally, through course work and internship classes, an ability to analyze problems, practical ability and communication skills etc. shall be cultivated. Through the course work and internship classes such as Forum on Environmental Studies and Practicums etc., practical abilities such as management ability, communication skills, expressiveness, an ability to judge and suggest etc. shall be cultivated. By implementation of research for the doctoral thesis through Exercise of Environmental Studies etc., an ability to integratedly promote research etc., such as an ability for area surveys, an ability for analytics/ analysis of information, an ability for lab work, group ability and modelling ability etc. shall be cultivated.

Teaching and Learning Methods	– Exercise of Environmental Studies I, II (1 credit for each) shall be the compulsory courses and the courses relating to course work (Forum on Environmental Studies I, II, and Environmental Science Practicum I, II) shall be the selective compulsory courses. – Upon commencing the 1st year, for all the students the advisory committee (research supervision team) composed of the team of a chief supervisor and several sub supervisors shall be established to organize validity and problems of research plan for each student. Additionally, instruction such as confirmation etc. of such as the courses registered, and the credits acquired and evaluation for progress in the research for the doctoral thesis shall be implemented. The advisory committee shall participate in other master' programs, as necessary.

Admission Policy

Desired Student Profile	– The person with knowledge and quality regarded as distinguished in the master's degree level in any area of sciences, engineering, agricultural science and social science. – The person with intellectual curiosity, ability for logical thinking and ability to summarize necessary to work on interdisciplinary research for environmental sciences and who have acquired an ability to autonomously conduct learning related to their relevant surrounding areas. – The person with a sense of mission, a sense of justice and a sense of ethics necessary to play an active role in international society as a global leader and who has acquired motivation to pioneer new academic areas and issues by himself/herself, a positive attitude in order to realize them, an ability to continue them patiently and a flexible and strong spirit. – The person with a motivation to write presentation in international academic conferences, to submit papers and to write the doctoral thesis in English. – The person with a motivation to work on the issues on a global scale related to sustainable development objectives as a global leader and contribute to preparation/implementation of policies in English and future vision. – In addition to the above-mentioned, as for the working professionals, practical skills and management ability acquired by business experience so far shall also be evaluated.
Student Selection Process	The following three items shall be evaluated and comprehensively judged. – If the student can explain the research contents in the master's course, and (or) the research and practical achievements conducted so far etc. accurately and logically. – If capable of accurately and logically explain the contents of research in the master's course and/or research/business performance etc. so far. – Judged by presentation regarding knowledge/qualities, abilities and motivation indicated in the above-mentioned “Desired Student” .

Learning Support Framework

Academic Support	For academic advising, student life, employment, and harassment-related consultations, support systems are established through designated committees: the Curriculum Committee, Student Counseling Support Committee, Employment Committee, and Harassment Countermeasures Committee. Additionally, writing support and presentation guidance are provided through the required course “Exercise of Environmental Studies” for all students.
Opportunities for Peer Interaction	We have established an online platform for information exchange accessible to all students enrolled in the degree program, promoting interaction among students. Furthermore, we utilize a tutor system for international students to encourage interaction among all students, including international students. Additionally, we ensure ample time for group work in lectures and seminars for required courses such as "Forum on Environmental Studies".
Opportunities for Student–Faculty Interaction	We have established an online platform for information exchange accessible to all students enrolled in degree programs and all professors, promoting interaction between students and faculty members. In addition to the main supervisor, a system will be established where two or more faculty members within the degree program serve as vice-supervisors for each student, providing regular guidance. This will also promote interaction between students and faculty members other than their main supervisor.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee conducts reviews of all educational activities and evaluates student learning outcomes to verify the validity of the curriculum and the appropriateness of instruction. Specifically, the Curriculum Committee annually confirms that there are no discrepancies between the content of each course and the competences students can acquire. Furthermore, student feedback is gathered through faculty advisors and shared within the degree program via the Curriculum Committee and the Faculty Meeting. Faculty Development Committee is established within the degree program to systematically and proactively ensure and improve educational quality. Additionally, a framework is established to continuously address mid-term educational quality needs, verify the effectiveness of initiatives, and identify challenges through bodies such as the Degree Program Future Review Committee.

Doctoral Program in Life Science Innovation (Food Innovation)

Doctor of Philosophy in Food Innovation

Program Educational Objectives

The Doctoral Program in Life Science Innovation cultivates highly specialized professionals or researchers who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, produce internationally highly appraised research outcomes, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	In the doctoral program, the following persons shall be trained: “the researchers and highly specialized professionals who can find a new value in food and create highly internationally competent research outcomes” by focusing on any of a series of abilities relating to industry creation based on functionality of food acquired in the master's degree course and then studying it.

Diploma Policy

The degree of Doctor of Philosophy in Food Innovation is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Innovation ability: Ability to make innovations in the areas of life science.	①If there is the awareness and motivation to create new knowledge and pass it along to the society in the areas of life science ②If the research techniques and reasoning skills for the theory and practice that lead to innovation creation in the areas of life science were gained ③If issues that have not been revealed in Food Innovation Science were identified and solved ④If there is the motivation to identify and solve cross-disciplinary research tasks in cooperation with researchers from different areas and not just one's own area
	7. Specialized knowledge: Leading-edge knowledge in the area of expertise	①If leading-edge specialized knowledge about food innovation science was gained ②If a research plan for solving unsolved issues was drawn up based on gained specialized knowledge
	8. Advanced practical English: Command of English sufficient for performing various activities involving research in the international society	①If the presentation ability that can impact the international society when research outcomes are reported or shared in English was gained ②If the English proficiency and knowledge to debate equally with researchers active in the front lines were gained
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Doctoral Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is conducted, and one year before the expected completion, Achievement Evaluation II and the Midterm Review are held. Through document review and an oral examination, these evaluations are administered to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – Five months prior to the expected completion, Achievement Evaluation III and the Preliminary Thesis Review are conducted. Through document review and an oral examination, these evaluations are administered to verify that the student has fully achieved the competences specified in the Diploma Policy, and to determine their eligibility to take the Final Examination.	

Guidelines for Assessing Learning Outcomes	– The Final Examination is conducted, in which the thesis is evaluated through a review and an oral examination. Through this process, a final assessment is made to confirm that the student has fully achieved the competences specified in the Diploma Policy at the required level.
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree dissertation must be the results of work in which the diploma applicant took the initiative and must contain research findings that are unprecedented and internationally highly appraised and that contribute to make strides in the areas of food innovation science. The degree dissertation must be written in English logically and scientifically and must be constructed in an appropriate format as a degree dissertation. 【Review board members】 A dissertation is reviewed by an exclusive board formed by one chief reviewer and three or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the three or more sub-reviewers, two or more faculty members qualified to supervise the research in the Program must be included. The four or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the four or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain his or her degree thesis content and then questioned by exclusive board members about what he or she has explained. The presentation of dissertation content and a question-and-answer session, which are part of the final exam, are publicly administered. During this examination, in which the applicant is required to make a presentation about his or her degree dissertation in English logically and scientifically, the applicant is evaluated to see if he or she can convince the reviewers sufficiently by answering the reviewers' questions with insight and by using the advanced specialized knowledge of the areas of food innovation science and including the latest research trends.

Curriculum Policy

Students are engaged in the research activities for identifying and solving unsolved issues for making innovations in the realms of Food innovation area. The curriculum includes internship subjects to support students in making innovations, for which they need to have the high awareness and motivation to work on research tasks in very different and/or cross-disciplinary areas in cooperation with researchers in different areas not just one's own area of expertise. In addition, to gain the cross-disciplinary way of thinking with the big picture in mind and cultivate the world's top-class advanced specialized research ability, the curriculum also organizes seminars taught by researchers who are active in the front lines and belong to overseas research institutes.

Curriculum Design Framework	– Curriculum of food innovation area shall be composed of Major Subjects, basic courses common to six program areas of this Degree Program (Disease mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics and Biomolecular Engineering) and Graduate General Education Courses. In Major Subjects, students are supervised for Food Innovation research.
Curriculum Design Framework	– Competence of knowledge creation is gained through doctoral dissertation creation, etc. – Management competence is gained through “Doctoral Competence Development”, etc. – Communication competence is gained with “Practices in Life Science Innovation”, etc. – Leadership competence is gained through “Doctoral Research in Life Science Innovation”. – Competence in Internationality is gained through “Doctor's Life Science Innovation Seminar”, etc. – Innovation ability is gained through General Foundation Subjects, Major Subjects, etc. – Specialized knowledge is gained through “Doctoral Research in Life Science Innovation”, etc. – Advanced practical English is gained through “Doctor's Life Science Innovation Seminar”, etc.
Teaching and Learning Methods	– With the understanding of the latest research trends in Food Innovation, students identify issues that have not been revealed and draw up and carry out an appropriate research plan for solving them. Further, through critical debates with supervisory faculty members, students develop the plan into a research that leads to produce life science innovations. – Obtained research findings are presented in academic journals, etc. With this, students improve their English proficiency, and in the process, gain reasoning skills. – With General Foundation Subjects and Graduate General Education Courses, students learn the latest research trends in the areas of life science and also improve English presentation ability. – Through experience to create new knowledge in cooperation with the out-of-area researchers in conducting internship, the research ability shall be improved.

Admission Policy

Desired Student Profile	We seek candidates who have the sufficient qualities to gain the basic research abilities that are expected to make innovations in the areas of Food innovation area, the specialized knowledge necessary to achieve it, and good command of English serving for various research activities in the international society.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess master's degree level specialized knowledge (excellence in the current academic performance), and the ability to explain concretely in English about research backgrounds, research plans and about passing along research findings to the society. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation and fundamental research skills to drive innovation in the field of Food Innovation, as well as their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for conducting research activities in the Doctoral Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Doctor's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Life Science Innovation (Environmental Management)

Doctor of Philosophy in Environmental Management

Program Educational Objectives

The Doctoral Program in Life Science Innovation cultivates highly specialized professionals or researchers who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, produce internationally highly appraised research outcomes, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	In the doctoral program, the following persons shall be trained: the researchers and highly specialized professionals who can create highly internationally competent research outcomes by focusing on the specific topic among the relationships between survival/growth of life and environmental conditions learned from a higher perspective in the master's degree course and improving an ability for problem-solving.

Doctoral Program in Life Science Innovation (Environmental Management) /
Doctor of Philosophy in Environmental Management

Diploma Policy

The degree of Doctor of Philosophy in Environmental Management is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Innovation ability: Ability to make innovations in the areas of life science.	①If there is the awareness and motivation to create new knowledge and pass it along to the society in the areas of life science ②If the research techniques and reasoning skills for the theory and practice that lead to innovation creation in the areas of life science were gained ③If issues that have not been revealed in Environmental Control Science were identified and solved ④If there is the motivation to identify and solve cross-disciplinary research tasks in cooperation with researchers from different areas and not just one's own area
	7. Specialized knowledge: Leading-edge knowledge in the area of expertise	①If leading-edge specialized knowledge about Environmental Control Studies was gained ②If a research plan for solving unsolved issues was drawn up based on gained specialized knowledge
	8. Advanced practical English: Command of English sufficient for performing various activities involving research in the international society	①If the presentation ability that can impact the international society when research outcomes are reported or shared in English was gained ②If the English proficiency and knowledge to debate equally with researchers active in the front lines were gained
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Doctoral Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is conducted, and one year before the expected completion, Achievement Evaluation II and the Midterm Review are held. Through document review and an oral examination, these evaluations are administered to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – Five months prior to the expected completion, Achievement Evaluation III and the Preliminary Thesis Review are conducted. Through document review and an oral examination, these evaluations are administered to verify that the student has fully achieved the competences specified in the Diploma Policy, and to determine their eligibility to take the Final Examination.	

Guidelines for Assessing Learning Outcomes	– The Final Examination is conducted, in which the thesis is evaluated through a review and an oral examination. Through this process, a final assessment is made to confirm that the student has fully achieved the competences specified in the Diploma Policy at the required level.
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree dissertation must be the results of work in which the diploma applicant took the initiative and must contain research findings that are unprecedented and internationally highly appraised and that contribute to make strides in the areas of Environmental control field. The degree dissertation must be written in English logically and scientifically and must be constructed in an appropriate format as a degree dissertation. 【Review board members】 A dissertation is reviewed by an exclusive board formed by one chief reviewer and three or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the three or more sub-reviewers, two or more faculty members qualified to supervise the research in the Program must be included. The four or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the four or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain his or her degree thesis content and then questioned by exclusive board members about what he or she has explained. The presentation of dissertation content and a question-and-answer session, which are part of the final exam, are publicly administered. During this examination, in which the applicant is required to make a presentation about his or her degree dissertation in English logically and scientifically, the applicant is evaluated to see if he or she can convince the reviewers sufficiently by answering the reviewers' questions with insight and by using the advanced specialized knowledge of the areas of Environmental control field and including the latest research trends.

Doctoral Program in Life Science Innovation (Environmental Management) /
Doctor of Philosophy in Environmental Management

Curriculum Policy

Students are engaged in the research activities for identifying and solving unsolved issues for making innovations in the realms of Environmental control area. The curriculum includes internship subjects to support students in making innovations, for which they need to have the high awareness and motivation to work on research tasks in very different and/or cross-disciplinary areas in cooperation with researchers in different areas not just one's own area of expertise. In addition, to gain the cross-disciplinary way of thinking with the big picture in mind and cultivate the world's top-class advanced specialized research ability, the curriculum also organizes seminars taught by researchers who are active in the front lines and belong to overseas research institutes.

Curriculum Design Framework	– Curriculum of environmental management area shall be composed of Major Subjects, basic courses common to six program areas of this Degree Program (Disease mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics and Biomolecular Engineering) and Graduate General Education Courses. In Major Subjects, students are supervised for Environmental control research.
Curriculum Design Framework	– Competence of knowledge creation is gained through doctoral dissertation creation, etc. – Management competence is gained through “Doctoral Competence Development”, etc. – Communication competence is gained with “Practices in Life Science Innovation”, etc. – Leadership competence is gained through “Doctoral Research in Life Science Innovation”. – Competence in Internationality is gained through “Doctor's Life Science Innovation Seminar”, etc. – Innovation ability is gained through General Foundation Subjects, Major Subjects, etc. – Specialized knowledge is gained through “Doctoral Research in Life Science Innovation”, etc. – Advanced practical English is gained through “Doctor's Life Science Innovation Seminar”, etc.
Teaching and Learning Methods	– With the understanding of the latest research trends in Environmental control, students identify issues that have not been revealed and draw up and carry out an appropriate research plan for solving them. Further, through critical debates with supervisory faculty members, students develop the plan into a research that leads to produce life science innovations. – Obtained research findings are presented in academic journals, etc. With this, students improve their English proficiency, and in the process, gain reasoning skills. – With General Foundation Subjects and Graduate General Education Courses, students learn the latest research trends in the areas of life science and also improve English presentation ability. – Through internships, you will hone your research skills through the experience of collaborating with researchers outside the field to create new knowledge.

Doctoral Program in Life Science Innovation (Environmental Management) /
Doctor of Philosophy in Environmental Management

Admission Policy

Desired Student Profile	We seek candidates who have the sufficient qualities to gain the basic research abilities that are expected to make innovations in the areas of Environmental control area, the specialized knowledge necessary to achieve it, and good command of English serving for various research activities in the international society.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess master's degree level specialized knowledge (excellence in the current academic performance), and the ability to explain concretely in English about research backgrounds, research plans and about passing along research findings to the society. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation and fundamental research skills to drive innovation in the field of Environmental Management, as well as their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for conducting research activities in the Doctoral Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Doctor's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Life Science Innovation (Biomolecular Engineering)

■ Doctor of Philosophy in Bioengineering〕

Program Educational Objectives

Highly specialized professionals or researchers who acquire cross-sectional and bird's eye view of life science, acquire world-class advanced specialized research capabilities, use all bioresources and globally play an active role in the areas of R&D of innovative functional materials that open up new developments in life science research.

Graduate Profile	Researchers and highly specialized professionals who can create highly international competent research outcomes such as functional materials that use biomolecules by utilizing a broad knowledge relating to biomolecules and their application development and distinguished ability to set/solve issues.

Diploma Policy

The degree of Doctor of Philosophy in Bioengineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Innovation ability: Ability to make innovations in the areas of life science.	①If there is the awareness and motivation to create new knowledge and pass it along to the society in the areas of life science ②If the research techniques and reasoning skills for the theory and practice that lead to innovation creation in the areas of life science were gained ③If issues that have not been revealed in bioengineering were identified and solved ④If there is the motivation to identify and solve cross-disciplinary research tasks in cooperation with researchers from different areas and not just one's own area
	7. Specialized knowledge: Leading-edge knowledge in the area of expertise	①If leading-edge specialized knowledge about bioengineering was gained ②If a research plan for solving unsolved issues was drawn up based on gained specialized knowledge
	8. Advanced practical English: Command of English sufficient for performing various activities involving research in the international society	①If the presentation ability that can impact the international society when research outcomes are reported or shared in English was gained ②If the English proficiency and knowledge to debate equally with researchers active in the front lines were gained
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Doctoral Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is conducted, and one year before the expected completion, Achievement Evaluation II and the Midterm Review are held. Through document review and an oral examination, these evaluations are administered to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – Five months prior to the expected completion, Achievement Evaluation III and the Preliminary Thesis Review are conducted. Through document review and an oral examination, these evaluations are administered to verify that the student has fully achieved the competences specified in the Diploma Policy, and to determine their eligibility to take the Final Examination.	

Guidelines for Assessing Learning Outcomes	– The Final Examination is conducted, in which the thesis is evaluated through a review and an oral examination. Through this process, a final assessment is made to confirm that the student has fully achieved the competences specified in the Diploma Policy at the required level.
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree dissertation must be the results of work in which the diploma applicant took the initiative and must contain research findings that are unprecedented and internationally highly appraised and that contribute to make strides in the areas of Biomolecular materials field. The degree dissertation must be written in English logically and scientifically and must be constructed in an appropriate format as a degree dissertation. 【Review board members】 A dissertation is reviewed by an exclusive board formed by one chief reviewer and three or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the three or more sub-reviewers, two or more faculty members qualified to supervise the research in the Program must be included. The four or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the four or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain his or her degree thesis content and then questioned by exclusive board members about what he or she has explained. The presentation of dissertation content and a question-and-answer session, which are part of the final exam, are publicly administered. During this examination, in which the applicant is required to make a presentation about his or her degree dissertation in English logically and scientifically, the applicant is evaluated to see if he or she can convince the reviewers sufficiently by answering the reviewers' questions with insight and by using the advanced specialized knowledge of the areas of Biomolecular materials field and including the latest research trends.

Curriculum Policy

Students are engaged in the research activities for identifying and solving unsolved issues for making innovations in the realms of Biomolecular materials area. The curriculum includes internship subjects to support students in making innovations, for which they need to have the high awareness and motivation to work on research tasks in very different and/or cross-disciplinary areas in cooperation with researchers in different areas not just one's own area of expertise. In addition, to gain the cross-disciplinary way of thinking with the big picture in mind and cultivate the world's top-class advanced specialized research ability, the curriculum also organizes seminars taught by researchers who are active in the front lines and belong to overseas research institutes.

Curriculum Design Framework	– Curriculum of biomolecular engineering area shall be composed of Major Subjects, basic courses common to six program areas of this Degree Program (Disease mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics and Biomolecular Engineering) and Graduate General Education Courses. In Major Subjects, students are supervised for Biomolecular materials research.
Curriculum Design Framework	– Competence of knowledge creation is gained through doctoral dissertation creation, etc. – Management competence is gained through “Doctoral Competence Development”, etc. – Communication competence is gained with “Practices in Life Science Innovation”, etc. – Leadership competence is gained through “Doctoral Research in Life Science Innovation”. – Competence in Internationality is gained through “Doctor's Life Science Innovation Seminar”, etc. – Innovation ability is gained through General Foundation Subjects, Major Subjects, etc. – Specialized knowledge is gained through “Doctoral Research in Life Science Innovation”, etc. – Advanced practical English is gained through “Doctor's Life Science Innovation Seminar”, etc.
Teaching and Learning Methods	– With the understanding of the latest research trends in Biomolecular materials, students identify issues that have not been revealed and draw up and carry out an appropriate research plan for solving them. Further, through critical debates with supervisory faculty members, students develop the plan into a research that leads to produce life science innovations. – Obtained research findings are presented in academic journals, etc. With this, students improve their English proficiency, and in the process, gain reasoning skills. – With General Foundation Subjects and Graduate General Education Courses, students learn the latest research trends in the areas of life science and also improve English presentation ability. – Through internships, you will hone your research skills through the experience of collaborating with researchers outside the field to create new knowledge.

Doctoral Program in Life Science Innovation (Biomolecular Engineering) /
Doctor of Philosophy in Bioengineering〕

Admission Policy

Desired Student Profile	We seek candidates who have the sufficient qualities to gain the basic research abilities that are expected to make innovations in the areas of Biomolecular materials area, the specialized knowledge necessary to achieve it, and good command of English serving for various research activities in the international society.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess master's degree level specialized knowledge (excellence in the current academic performance), and the ability to explain concretely in English about research backgrounds, research plans and about passing along research findings to the society. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation and fundamental research skills to drive innovation in the field of Biomolecular Engineering, as well as their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for conducting research activities in the Doctoral Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Doctor's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Joint Master's Degree Program in Sustainability and Environmental Sciences

Master of Sustainability and Environmental Sciences

Program Educational Objectives

The program guides students to become a professional who can contribute to solving problems and realizing sustainable society in tropical Asia in the point of the global issues such as water resources/aquatic environment, flood, and ecosystem in terms of specialized and comprehensive insights of sciences, agricultural sciences, engineering, and social science.

Graduate Profile	– The professional who can contribute to solving local and global-scale issues relating to water resources/aquatic environment, bioresources/biodiversity and etc. and urban problems etc. in tropical Asia/monsoon regions. – The professional who understands various issues in developing countries and is equipped with the knowledge and skills necessary to create sustainable and resilient future local communities. – The professional who has a specialized and panoramic view, can seriously work on challenging issues and take measures to properly solve the problems.

Diploma Policy

The degree of Master of Sustainability and Environmental Sciences is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Literacy: an ability for panoramic thinking and logical constitution.	①Having an ability for comprehensive thinking, which is necessary to position specialized knowledge into environmental issues. ②Having an ability for the logical constitution to analyze and explain environmental issues in a specialized/ comprehensive way.
	2. Ability to coordinate: communication skills/ability for negotiation/ability for adjustment.	①Having communication skills/ability for negotiation with various stakeholders. ②Having an ability for adjustment and arrangement in filed surveys ③Having an ability to organize meetings with relevant institutions/stakeholders.
	3. Practical skills: executive ability/ expressiveness ①if having an executive ability to organize/set the problems and establish the process to solve such problems.	①Having an executive ability to organize/set the problems and establish the process to solve such problems. ②Having expressiveness such as presentation and self-appeal.
	4. Fundamental knowledge: basic knowledge necessary for understanding/analysis of various issues in tropical Asia regions.	①Capable of understanding/analyzing various issues based on basic knowledge/skills of sciences, agricultural science, engineering and social science. ②Having acquired an ability to explain identification of problem logically.
	5. Technological capacity: technological capacity necessary to solve various issues in tropical Asia regions.	①Having acquired knowledge relating to skills for problem-solving technics based on understanding/ analysis of environmental issues. ②Having acquired an ability to estimate various issues that can be expected while application of technologies in a panoramic way.

	Competences	Evaluation perspectives
Knowledge and Skills	6. Ability for social implementation: an ability to perform social implementation that requires academic knowledge/skills necessary to solve various issues in tropical Asia regions	①Having acquired an ability to suggest a system that can be socially implemented based on understanding various issues. ②Having acquired an ability to point out the problems of existing relevant technologies/policies and provide new suggestions.
Guidelines for Assessing Learning Outcomes	The study outcomes will be assessed by the evaluation of the acquisition status of competences based on the degree awarding policy at each stage (listed below) according to the "competence sheet". Stage One: After the joint seminar Stage Two: After the end of the third semester Stage Three: At the time of submission of the provisional master's thesis In the first stage, a joint seminar is conducted with faculty and students from both the home university (the university where each student's primary advisor belongs) and the host university (the university the student studies abroad at). During this seminar, students present their research and study content, and their level of achievement is assessed, including a question-and-answer session on their presentation. In the second stage, the student's level of achievement is evaluated by reviewing the analysis of research data obtained at the host university and the progress in writing the master's thesis. In the third stage, the achievement level is evaluated based on the completeness of the draft master's thesis created under the guidance of faculty from both universities. Subsequently, for the master's thesis presentation examination, a thesis review committee, composed of faculty members from both the home university and the host university, conducts the review using online systems.	

Evaluation Criteria for Degree Theses/ Dissertations	The requirements shall be as follows: completing interdisciplinary curriculum in the program, acquiring the prescribed credits and carrying out research for master's thesis. The dissertation should be passed in the thesis defense. (Examination system for dissertation) The Thesis Examination Committee shall be composed of three members, including a supervisor as a main examiner from a home university and two sub-examiners from a home university and a host university respectively. However, an examiner can be selected as a committee member from other program members as necessary. The Thesis Examination Committee shall evaluate a Master's thesis and submit an evaluation report to the Chair. (Evaluation items for dissertation) 1. If setting of problems in the thesis is clearly indicated, and the issues are recognized as being able to contribute to solving environmental issues directly or indirectly. 2. If the conventional research outcomes (literature and materials) are specified and properly evaluated and validity of the procedures in exploring issues in developing points of argument is appropriately presented upon achieving research objective. 3. If the research methods (theory, experiment method/materials, survey method etc.) are recognized as appropriate upon achieving research objectives. 4. If the thesis from problem setting to conclusion is narrated demonstratively and logically, new knowledge is presented, and in the conclusion, academic contribution of the conclusion drawn is confirmed in terms of sustainability and environmental sciences. 5. If the dissertation is presentable as a thesis for master's degree. (Examination standard for dissertation) The dissertation that satisfies all the following items above 1 to 5 shall be a pass as the thesis for master's degree after going through final examination.

Curriculum Policy

This course shall aim to understand the mechanism of environmental issues and find their solutions and construct a curriculum to develop communication skills and practical ability in addition to basic knowledge of natural science and social sciences and humanities. In detail, in order to acquire knowledge/ability required for degree awarding, skills/a judgment ability/practical ability abilities that are required for highly specialized professionals solve local-scale/global-scale issues such as climate changes, water resources, bioresources, urban problems, and disasters, etc., especially in tropical Asia/monsoon regions. This course aim allow students that can contribute to solving problems with specialized and panoramic insights of sciences, agricultural science, engineering and social science etc. The curriculum shall be designed for focusing on basic of sciences, agricultural science, engineering and social science. Students are able to obtain the and an ability to understand/recognize problems, an ability to solve problems and capable of suggestion/practical ability etc. For this purpose, the curriculum shall be organized according to the following policies.

Curriculum Design Framework	①The program allow students to have a broad scientific knowledge and problem-solution skills for the environmental issues in tropical Asia/monsoon regions. Students develop an internationally competent research skill and deeper specialized knowledge as a researcher and a manager to apply other regions through the compulsory and elective courses. ②To confirm/evaluate the students' learning/research activities progress, share awareness between chief supervisor and sub supervisors and confirm instruction policy etc., actualize cooperative instruction system and cooperative education system, and confirm standardization in evaluating learning/research outcomes etc., The seminar course of Joint Seminar with MJIIT shall be established as jointly established courses. ③To conduct a highly novel and internationally competent research, the classes for master thesis research shall be established. ④To understand various issues in the developing countries and develop the skills necessary to implement surveys and experiments in broad areas of environmental sciences in other countries with different cultures, overseas internship shall be performed. In this internship, students at University of Tsukuba learn an interactive experiment from field surveys and field work in Malaysia. Students of MJIIT shall perform the same learning in Japan. Upon implementation, considering that this internship is performed as a practical activity, careful attention shall be given in order to perform the internship overseas safely and efficiently through close cooperation between Japanese faculty members of MJIIT and the ones dispatched from the University of Tsukuba and the ones in this Degree Course. Additionally, for the students of MJIIT as well, through close cooperation between the program members of this Degree Course and the ones of MJIIT, internship shall be safely and efficiently performed. ⑤To develop an ability to write a thesis and a knowledge, a seminar course shall be established. To complete a thesis and obtain a presentation skill, a special research course shall be established.

Curriculum Design Framework	⑥To develop a research management skill that is essential for a scientific technology in the 21st century and a career development, and English writing skill to announce research outcomes to the world and to build legal, social, and ethical knowledge relating to environmental issues and for further achievement for students' goal with communication skill to debate with others who have different opinions, general courses are established.
Teaching and Learning Methods	In this course, the students whose home university is University of Tsukuba or Malaysia-Japan International Institute of Technology (MJIIT) shall spend their 1st term in their home university and then perform educational research by staying in the host university. At each university, the supervisors shall be appointed. In their home universities, through completing a course work and compulsory classes for one term, students shall understand the principle and approach of this course and prepare for learning/research activities in overseas partner graduate school through course work and lab work while learning basic knowledge and skills necessary for learning/research. In overseas partner graduate school, the students shall take classes etc., conduct filed surveys to carry out research for master's thesis and carry out research/learning and receive evaluation under sub supervisor of the overseas partner graduate school. The program allows smooth communication among supervisors through joint seminars. The instruction shall be provided for the students according to their proficiency. Students exchange the information closely with the supervisors of their home university during their stay in the partner university. The program takes great care of students.

Admission Policy

Desired Student Profile	The program seeks students that, with a strong interest in issues to be solved in tropical Asia and a background in natural science or social science and a cooperative spirit, are strongly determined to innovate and contribute to the sustainable society by solving global issues with environmental scientific approaches. As for selecting of students, the applicants shall be examined by two screenings: the first one is by each university and the second one is by both universities jointly, leading to final decision of candidates.

Student Selection Process	By comprehensively evaluating the application forms (reason for application, research plan, transcript/diploma of home institution (bachelor's degree), degree certificate, English proficiency certification etc.) and the results of the interview test (based on the application forms, the interview test shall be performed. which shall be performed in the university which the applicants apply for and the partner university shall participate in such interview test by video conference system), the acceptance of the applicants shall be judged. Additionally, since the program has international characteristics, a certain level of English proficiency shall be required. Furthermore, the following three precautions for applicants shall be informed: – Having sufficient communication skills to take curriculum in English provided by this course. – Being in the situations where applicants can complete the curriculum, for one year in a university where the applicants are dispatched and for one year in the one they are accepted during enrollment period. – Capable of paying travel expenses, lodging expenses and living expenses that are necessary for learning in the University of Tsukuba and the University of Technology Malaysia at the applicants' own expense (including acquisition of scholarship).

Learning Support Framework

Academic Support	We support effective learning through courses such as research management skills and research methodology to enhance research planning skills, courses such as Scientific writing in English - practice to provide writing support, and courses like Master Project 1 and joint seminars to provide presentation guidance.
Opportunities for Peer Interaction	Faculty members and students from both universities jointly hold the joint seminars where they present their research and academic work, promoting student interaction through questions and answers regarding the presentations. At that time, by encouraging the preparation of research presentations that are easy to understand for faculty and students outside their field, we aim to improve the students' presentation skills. In the Introduction to Environmental Science and Exercises course, group work is incorporated to foster the ability to coordinate opinions among students from different research backgrounds and fields.
Opportunities for Student–Faculty Interaction	Students receive research guidance on a daily basis from their advisors at both their home- and host-universities within their respective research laboratories. Approximately one year later of enrollment, at Master Project 1, which is a presentation about research progress and future plans, students have the opportunity to receive advice from faculty conducting research in related fields at both universities. Furthermore, in joint seminars conducted by faculty members and students of both universities, student present their research and study content, and engage in question-and-answer sessions, fostering interaction with faculty members other than their supervisors. At that time, by encouraging the preparation of research presentations that are easy to understand for faculty and students outside their field, they aim to improve presentation skills.

Approaches to Assuring and Enhancing Educational Quality

A steering committee, including the heads of both universities' program and coordinators , will be established to continuously review and improve the entire educational activities, thereby ensuring the quality of education and strengthening the system to achieve the program's objectives. The steering committee will hold regular joint meetings to identify differences in systems and structures between the two universities, aiming to ensure and improve the quality of education in the joint degree program. In particular, coordinators will make efforts to closely communicate with each other to avoid any discrepancies in information. Course surveys will be conducted for each subject and shared with the relevant faculty members so that the results can be used as reference materials for improving the course content.

Graduate School of Comprehensive Human Sciences

Degree Programs in Comprehensive Human Sciences

Master's Program in Education
- Subprogram in School Education for the Next Generation
- Subprogram in School Education for the Next Generation
- Subprogram in Education Sciences

Master's Program in Psychology
- Subprogram in General Psychology
- Subprogram in Clinical Psychology

Master's Program in Disability Sciences

Master's Program in Counseling

Master's Program in Rehabilitation Science

Master's Program in Neuroscience

Master's Program in Nursing Science

Master's Program in Medical Sciences

Master's Program in Public Health

Master's Program in Physical Education, Health and Sport Sciences

Master's Program in Sport and Olympic Studies

Master's Program in Sport and Wellness Promotion

Master's Program in Art

Master's Program in Design

Master's Program in Heritage Studies

Master's Program in Informatics

Master's Program in Life Science Innovation (Disease Mechanism)

Master's Program in Life Science Innovation (Drug Discovery)

Doctoral Program in Education

Doctoral Program in Psychology
- Subprogram in General Psychology
- Subprogram in Clinical Psychology

Doctoral Program in Disability Sciences

Doctoral Program in Counseling Science

Doctoral Program in Rehabilitation Science

Doctoral Program in Neuroscience

Doctoral Program in Medical Sciences

Doctoral Program in Nursing Science

Doctoral Program in Public Health

Doctoral Program in Sports Medicine

Doctoral Program in Physical Education, Health and Sport Sciences

Doctoral Program in Coaching Science

Doctoral Program in Sport and Wellness Promotion

Doctoral Program in Art

Doctoral Program in Design

Doctoral Program in Heritage Studies

Doctoral Program in Informatics

Doctoral Program in Human Biology

Doctoral Program in Life Science Innovation (Disease Mechanism)

Doctoral Program in Life Science Innovation (Drug Discovery)

Joint Master's Program in International Development and Peace through Sport

Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education

International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health

Educational Objectives of Graduate School of Comprehensive Human Sciences

This course shall aim at training the researchers and faculty members who can plan/execute research based on advanced and global view in their own areas of study through rich and advance educational research from basic and applications relating to human mind and body and various activities, have a broad knowledge relating to human beings and plan/execute distinguished academic research by which advanced fusion of different areas can be sought on the back of distinguished interdisciplinary academic research and international and interdisciplinary educational research environment, and highly specialized professionals who can satisfy social needs by understanding human beings from multifaceted view and researching/designing flexible and proper aids/support.

Competences specified by the Graduate School of Comprehensive Human Sciences

Master's Program	1. Research ability	Basic knowledge and ability to set research tasks and carry out a research plan in the areas of comprehensive human sciences
	2. Specialized knowledge	Advanced specialized knowledge and command of the areas of comprehensive human sciences
	3. Ethical view	Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of comprehensive human sciences
Doctoral Program	1. Research ability	Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of comprehensive human sciences
	2. Specialized knowledge	Leading-edge and advanced specialized knowledge and command of the areas of comprehensive human sciences
	3. Ethical view	Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of comprehensive human sciences and deep ethical knowledge about the specific area of expertise

Degree Programs in Comprehensive Human Sciences

Educational Objectives

This course shall aim at training the researchers and faculty members who can plan/execute research based on advanced and global view in their own areas of study through rich and advance educational research from basic and applications relating to human mind and body and various activities, have a broad knowledge relating to human beings and plan/execute distinguished academic research by which advanced fusion of different areas can be sought on the back of distinguished interdisciplinary academic research and international and interdisciplinary educational research environment, and highly specialized professionals who can satisfy social needs by understanding human beings from multifaceted view and researching/designing flexible and proper aids/support.

	Competences specified by the Degree Programs	Evaluation perspectives
Master's Program	1. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of comprehensive human sciences	①If relevant research tasks from the review of previous research in the area of expertise involved in the human mind and body and various activities are set ②If modern research tasks involved in the human mind and body and various activities are pointed out from a global perspective
	2. Specialized knowledge: Advanced specialized knowledge and command of the areas of comprehensive human sciences	①If specialized knowledge to explore research subjects and fields in an appropriate manner is acquired ②If there is motivation to actively absorb and use knowledge and skills necessary to research of the relevant area
	3. Ethical view: Ethical view and ethical knowledge appropriate for persons with basic research ability or highly specialized professionals in the areas of comprehensive human sciences	①If there is a choice of appropriate methods of research for research tasks targeting humans ②If research devoting enough attention to the ethical aspect on human mind and body and various activities is carried out
Doctoral Program	1. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in the areas of comprehensive human sciences	①If essential research tasks that contribute to the future on the basis of previous research in the area of expertise involved in the human mind and body and various activities are set ②If original findings using reasonable methods of research in the solution of leading-edge set tasks are created

Doctoral Program	2. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the areas of comprehensive human sciences	① If the ability to put leading-edge and advanced specialized knowledge in the relevant area into practice is acquired ② If original tasks based on up-to-date specialized knowledge in the relevant area were newly discovered
	3. Ethical view: Ethical view and ethical knowledge appropriate for researchers or highly specialized professionals in the areas of comprehensive human sciences and deep ethical knowledge about the specific area of expertise	① If knowledge to keep intellectual property and information involved in research secure is sufficient ② If knowledge to keep ethical view, intellectual property and information vital to the relevant area secure is explained

Master's Program in Education

■ Master of Arts in Education

Program Educational Objectives

Highly specialized professionals shall be trained who can systematically understand the significance and role of education for human activities and social development, sensitively grasp globally spread current educational issue, have fundamental research ability to analyze them by making use of academic approaches in various areas of study of education and have a research ability that enables leading problem-solving with distinguished specialized knowledge in various areas of education.

Graduate Profile	– To cultivate highly specialised professionals with research capabilities who, using academic approaches in educational studies, engage in educational activities, school organisational management, and educational development assistance at schools and administrative institutions both domestically and internationally, and who envision and design the next generation of school education and international education. – To cultivate researchers who engage in education and research in fundamental and foundational fields of educational studies at universities, research institutions, and other organizations both domestically and internationally.

Diploma Policy

The degree of Master of Arts in Education is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Ability to discover educational issues: an ability to grasp current global issues based on systematical understanding of substantial meaning of education.	①If capable of setting research tasks appropriately based on the preceding studies. ②If capable of indicating current educational issues from a global view.
	7. Ability to explore the contents of education: an ability to explore the contents of education in a wide variety of educational sites.	①If capable of exploring the contents of education in a proper method in concrete educational sites including educational administrative institutions and schools etc. ②If capable of explaining educational values of the contents of education explored.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability for pedagogical analysis: a basic research ability to analyze by making use of academic approaches in various areas of education.	①If capable of selecting appropriate research method for research tasks ②If capable of proceeding research by sufficiently paying attention to ethical aspects relating to education sciences.
	9. Ability to solve educational issues: a basic research ability to analyze by making use of academic approaches in various areas of education.	①If capable of solving the issues by making use of appropriate and distinguished specialized knowledge assuming concrete educational sites such as educational administrative institutions and schools etc. ②If capable of understanding expertise necessary to take the initiatives in solving educational issues by a group.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted by verifying and assessing the extent to which competences defined in the degree conferral policy have been acquired, using the “Achievement Evaluation Form (Rubric)” . Stage 1: From the end of the first year to the spring module of the second year, during the Master's Thesis Proposal Presentation, the primary and secondary advisors conduct a Stage 1 Achievement Assessment based on the rubric. Stage 2: During the second year, at the Master's Thesis Interim Guidance Meeting, the primary and secondary advisors conduct a Stage 2 achievement review based on the rubric. Final Stage: At the end of the second year, at the Master's Thesis Preliminary Review Meeting, the primary and secondary advisors conduct a final achievement review based on the rubric. The Educational Council then deliberates and approves the achievement status of all graduating students, with the participation of all faculty members.	

Evaluation Criteria for Degree Theses/ Dissertations	The thesis that satisfies all the following evaluation items shall be a pass as the thesis for master's degree after going through the final examination with presence in person. 1. The significance and positioning of the said research in the area of education science shall be clearly described. 2. The research tasks shall be appropriately set. 3. The research method shall be reasonably selected. 4. Relevant cited documents and references are specified based on the preceding research. 5. The research thesis shall summarize the studies based on firm ground. Additionally, the thesis examination committee established in order to implement examination of the thesis for master's degree shall be composed of one program leader, three sub leaders and some members designated by the program leader of this Degree Program. Furthermore, the supervisors of this Degree Program approved by the thesis examination committee shall serve as the chief examiner (1 person) and sub examiner (two or more persons).

Curriculum Policy

In Master's Program in Education, the curriculum shall be organized by classifying the classes broadly into three categories of［General Foundation Subjects］,［Foundation Subjects for Major］and［Major Subjects］in order that students can acquire both basic knowledge and specialized one of various areas in educational science necessary for the researchers of educational science, and generic/specialized competences through developing educational research activities. Additionally, by setting the courses necessary for students who have Class 1 Teaching License to acquire Special Certificate in a wide range, this course shall enable them to obtain the qualifications as highly specialized professionals relating to education.

Curriculum Design Framework	The courses to be the foundation of this Degree Program shall be established as［General Foundation Subjects］by which students aim to acquire basic knowledge necessary for the researchers of educational science and generic/specialized competences, which is determined as compulsory courses. Additionally, the courses by which students aim at acquiring specialized knowledge in various areas of education, and the method to find and resolve research tasks shall be established as［Foundation Subjects for Major］, which shall be determined as selective courses based on the course model set by satisfying the requirements of the three subprograms (Subprogram in International Education, Subprogram in School Education for the Next Generation, Subprogram in Basic Education Sciences) established according to the characteristics of human resources to be developed. In this case, the reason the registered courses are indicated as the course model not by expressively classifying the courses for each subprogram is to enable the students to register courses according to interdisciplinary research areas beyond the bounds of conventional graduate course and division etc. and additionally, to aim at developing human resources who can respond to complex and multilayered contemporary educational issues.

Curriculum Design Framework	In addition, through learning the courses established in other degree programs (within the degree program, other degree programs), more interdisciplinary learning shall be achieved. The courses by which the students aim at acquiring generic/specialized competences through actual development of the research relating to various areas of educational science and complete their master's thesis as a result shall be established as［Major Subjects］, which shall be determined as selective courses based on the subprograms and course model.
Teaching and Learning Methods	All the students of this Degree Program shall register and acquire［General Foundation Subjects］.［Foundation Subjects for Major］and［Major Subjects］shall be taken and completed according to the subprograms and more detailed course model. Other degree programs established in other subprograms and Graduate School of Comprehensive Human Sciences as a matter of fact, and the courses established in the degree program set in other graduate school shall also be registered in order to enable the students to obtain deep understanding of interdisciplinary characteristics of educational science.

Admission Policy

Desired Student Profile	In Master's Program in Education the desired students shall be as follows: in addition to the human resources aiming to become researchers who are engaged in education/research in various areas of educational science in universities/research institutions in and outside Japan, highly specialized professionals with research ability who are engaged in analyzing effects of educational policies, creating policies and supporting educational development etc. by making use of academic approaches of education sciences in administrative institutions/international institutions in and outside Japan and the human resources who aim to become highly specialized professionals with research ability for leading educational activities and the development of human resources in educational administrative agencies schools, social education/lifelong learning institutions NPO and other education-related organizations etc. in and outside Japan. The following applicants may also enter this program: the person who have experienced the research of education science in department of education etc. and have acquired qualifications/abilities of teachers as professionals as a matter of course, the ones who have interests in relationship between high specialization cultivated in department of science and social sciences and humanities etc. and education as basic activities of human beings and the ones who have interests in educational activities in broad human communities not limited by schools.
Student Selection Process	The entrance examination shall basically consist of specialty examination, foreign language examination of non-specialty (English), and oral examination. By arranging the examination in English for special selection for working individuals and foreign students, this Degree Program shall support various forms of learning. For applicants, the results of each examination subject shall be comprehensively evaluated, and their aptitude shall be examined.

Learning Support Framework

Academic Support	The dual-advisor system creates greater objectivity in research supervision, and enables support for a wide range of consultation needs. Participation in the Master's Thesis Interim Guidance Meeting provides students with an opportunity to objectively review their research framework, and supports the further development of their research. An academic advisor system is in place to provide learning support (in certain areas of the International Education SP and the School Education for the Next Generation SP). Additionally, students may opt to participate in Faculty Development (FD) sessions, which provide opportunities to learn about research ethics and other competences necessary for academic studies.
Opportunities for Peer Interaction	Student laboratories have been established to ensure opportunities for student interaction within each SP or research area. Additionally, mechanisms are in place to provide opportunities for participation in activities such as master's thesis guidance sessions, thereby promoting cross-year interaction. The School Education for the Next Generation SP provides a forum for interaction with currently-practising teachers. Book discussion clubs and information-sharing opportunities that transcend research areas are also encouraged.
Opportunities for Student–Faculty Interaction	All faculty members responsible for the degree program participate in master's thesis guidance meetings, providing opportunities for students to interact with faculty members other than their primary advisor. Additionally, faculty-student discussion sessions are held to hear students' requests regarding the learning environment and other matters. Furthermore, opportunities for interaction with faculty members across disciplines are provided through student gatherings held by the academic division.

Approaches to Assuring and Enhancing Educational Quality

To ensure the rigor and quality of the curriculum, the Degree Program Curriculum Committee consolidates rubric evaluations, reviews, and analyzes them. Should improvements be necessary, the committee deliberates on measures at the Education Council.

Master's Program in Psychology

■ Master of Arts in Psychology

Program Educational Objectives

This program cultivates highly specialized professionals who possess the expertise to understand, explain, identify issues, and empirically examine various phenomena related to human minds and behaviors using the latest psychological knowledge and methodologies. They collaborate with people across borders, cultures, academic disciplines, and professional fields, applying psychological insights and providing psychological support with high ethical standards to address diverse challenges concerning minds and behaviors in Japan and around the world.

Graduate Profile	Based on the above objectives for talent development, we cultivate highly specialized professionals who master the latest psychological methodologies, knowledge, and skills. These professionals contribute to problem-solving and value creation by collaborating with experts from other fields in private companies, government agencies, clinical psychology settings, and other relevant environments.

Diploma Policy

The Master of Psychology degree shall be conferred upon those who have satisfied the requirements for completion of the Master's Program as stipulated in the University of Tsukuba Graduate School Academic Regulations and related rules, and who are recognized as possessing the following knowledge and abilities.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Psychological understanding of human nature and problem-finding ability: Ability to scientifically understand human minds and behaviors and discover unresolved psychological problems.	①Can you acquire research methods and specialized knowledge across diverse fields of psychology, enabling you to scientifically understand various phenomena of human mind and behavior from a psychological perspective? ②Can you identify unresolved problems within specific domains of psychology?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Psychological problem-solving ability: Ability to adhere to research ethics and resolve issues concerning human minds and behavior by utilizing psychological methodologies, theories, and findings.	①Can you formulate and execute a plan to solve unresolved issues concerning human minds and behavior by utilizing psychological methodology and knowledge? ②Can you objectively observe and record the results of implemented solutions and acquired insights, add valid analysis, and evaluate and revise the solutions and insights?
	8. Psychological clinical support ability: Ability to adhere to the ethics of a clinical psychology practitioner, utilize psychological knowledge, methodology, and clinical skills, and provide clinical psychological support.	①Do you understand the professional ethics required of a clinical psychologist? ②Can you effectively implement psychological assessment methods and psychological support techniques?
	9. Psychological information dissemination ability: Ability to adhere to research ethics, communicate psychological theories, methodologies, and research findings, and explain them in a way that is understandable even to those without a background in psychology.	①Can you adhere to research ethics and summarise and inform psychological theories, methodologies, and research findings into study group materials, conference abstracts, papers, etc., ? ②Can you explain psychological insights in a way that is understandable even to those without psychological knowledge?
	10. Multidisciplinary communication ability: As a psychology professional, the ability to discuss and collaborate with experts from other fields and multiple professions.	①Can you explain psychological insights in a way that experts from other fields and disciplines can understand, answer their questions, and engage in discussion? ②Can you respect experts from other fields, listen to their perspectives, ask questions about unclear points, and deepen your understanding?

Guidelines for Assessing Learning Outcomes	At the master's thesis examination held during the relevant academic year, the former faculty members serving as research supervisors and research assistant supervisors shall evaluate each student's achievement of general competences and specialized competences based on the materials submitted, the presentation, and the question-and-answer session, using the rubric. The two secondary examiners will also assess the level of achievement in general competences and specialized competences regarding the content of the thesis itself, following the rubric. They will also take note of thesis publication, conference presentations, applications for and acquisition of competitive funding, awards, etc., and use these as supplementary outcome indicators demonstrating learning achievements.
Evaluation Criteria for Degree Theses/ Dissertations	The Master's degree shall be conferred upon a candidate who has satisfied all requirements stipulated in the Graduate School Regulations of the University of Tsukuba, whose thesis is deemed appropriate based on the following evaluation criteria, and who has passed the final examination. <Evaluation Criteria> 1. The thesis clearly articulates the academic significance and positioning of the research within the field of psychology, based on an accurate understanding of domestic and international research trends and prior studies in the relevant field. Furthermore, the entire thesis preparation process must be free from research misconduct (fabrication, falsification, plagiarism) or other harmful research activities. 2. The thesis must contain original research findings contributing to the advancement of psychology, presented at an appropriate level and volume for a master's thesis. 3. The discussion of research results must be valid, and conclusions must be derived based on objective and logical reasoning. 4. The thesis must be appropriately structured in a format and at a level suitable for a master's thesis in psychology, including the background, purpose, methods, results, discussion, conclusions, and references. <Master's Thesis Review System> The Thesis Review Committee established to evaluate master's theses shall consist of one primary supervisor and two or more secondary supervisors. In principle, at least two secondary supervisors shall be selected from faculty members belonging to the Psychology Degree Program. However, with the approval of the Education Council, faculty members outside the degree program may also be appointed as secondary supervisors. <Thesis Evaluation Method> ①Evaluation of the Thesis: The thesis undergoes peer review by two secondary examiners, who grade it according to the rubrics for each of the four evaluation criteria listed above. ②Evaluation of the Presentation and Q&A at the Final Examination: All primary and research assistant faculty members of Master's Program in Psychology evaluate the presentation and Q&A at the final examination using the rubrics. The overall evaluation of the master's thesis is determined by combining the results of evaluations ① and ② .

Curriculum Policy

In order to explore what mind is and clarify functions of mind as being crucial for understanding human beings, Master's Program in Psychology shall enable students to acquire necessary knowledge/ metrologies/ skills/sense of values and develop an ability for problem-solving which can contribute to society as experts of human sciences while having simultaneously various and close relationships with adjacent areas and multidisciplinary which can develop as interdisciplinary research.

Curriculum Design Framework	Master's Program in Psychology includes common required subjects for both General Psychology Subprogram and Clinical Psychology Subprogram, as well as foundational degree program subjects. Furthermore, each subprogram offers subprogram-specific common subjects and specialized subjects. Through required subjects for both subprogram “Methodologies on Psychology I” and “Methodologies on Psychology II”, along with the specialized major subjects in each subprogram (such as “Lecture on Educational Psychology”), students acquire broad methodological skills and specialized knowledge across various fields of psychology. The aim of this learning is to develop five specific competencies in psychology. The elective required courses “Basic Research in Psychology A”, “Basic Research in Psychology B”, and “Basic Research in Psychology S” consist of multiple master's thesis guidance sessions and seminars led by the supervising professor. These subjects enhance 'psychological understanding of human nature and problem-finding ability', 'ability for psychological problem-solving', 'ability for psychological problem-solving', 'psychological information dissemination ability', and 'communication skills among multiple areas',while simultaneously cultivating 'knowledge application conpitences', 'management competences', and 'communication competences'. Furthermore, subjects like “Psychology Internship” and “Career Development in Pshychplogy” enhance 'Psychological information dissemination ability:psychological communication skills' and 'interdisciplinary communication abilities. Subjects such as “English Practicum in Psychology Research (General) 1” and “English Practicum in Psychology Research (General) 2 ”, aim to foster international competence. In General Psychology Subprogram, in addition to the above, “Research Seminar in Psychology (General) I” , “ Research Seminar in Psychology (General) II”, “Research Seminar in Psychology (General) III”, and “Research Seminar in Psychology (General) IV” involve specialized discussions within each field. This enhances 'psychological understanding of human nature and problem-finding ability', 'ability for psychological problem-solving', 'ability for psychological problem-solving', 'psychological information dissemination ability', while also improving generic competencies such as knowledge application skills. The Clinical Psychology Subprogram is structured to enable students to acquire specialized knowledge in clinical psychology and developmental clinical psychology, specialized knowledge in psychological support across five domains (healthcare, welfare, education, justice/criminal justice, and industry/labor), specialized knowledge and implementation skills in clinical psychological interviews and psychological assessment methods, and practical abilities as clinical psychology practitioners. This is achieved through lectures, seminars, and practicum subjects offered within the subprogram's common subjects and domain-specific subjects. The program is also designed to enable students to acquire the five specialized competencies. Furthermore, the curriculum of the Clinical Psychology Subprogram is structured to enable students to meet the eligibility requirements for both the Clinical Psychologist certification administered by Foundation of the Japanese Certification Board for Clinical Psychologists and Certified Public Psychologist. Furthermore, by completing the Graduate School Common Core Courses and Graduate School Common Courses, students will further develop management competence, communication competence, teamwork competence, and international competence. Evaluation for each course will be based on objective tests, reports, other deliverables, practical skills, and behavioral observations during practicums. The specific evaluation methods will be detailed in each course syllabus.

Teaching and Learning Methods	The learning methods in Master's Program in Psychology are broadly categorized into lectures, seminars, and practicums. The required courses “Methodologies on Psychology I” and “Methodologies on Psychology II” are omnibus subjects where faculty members specializing in specific methodologies deliver lectures. Lectures primarily consist of explanations and Q&A sessions led by the instructor, followed by student discussions. Seminar subjects such as “Research Seminar in Psychology (General) I” and thesis guidance courses like “Basic Research in Psychology A” are, in principle, student-led, involving topic presentations, assigned section presentations, demonstrations, and discussions. The distinctive curriculum features of Master's Program in Psychology are as follows: ①Subjects from Master's Program in Neuroscience— “Fundamentals of Neuroscience A”, “Fundamentals of Neuroscience B”, “Fundamentals of Neuroscience C”, and “Fundamentals of Neuroscience D” —can be taken as specialized subjectss within the Genaral Psychology Subprogram. ②“Psychology Internship” grants credit for internship experience at companies or organizations meeting specific criteria. ③“English Practicum in Psychology Research (General) 1” and “English Practicum in Psychology Research (General) 2” may be credited for presentations and activities at international conferences meeting specific criteria, or for completing courses offered by overseas universities. ④In Clinical Psychology Subprogram, students undertake on-campus training at the University of Tsukuba Counseling Center or the University of Tsukuba Child Counseling Center as part of the training required for designation as a Type 1 Clinical Psychologist. Additionally, to primarily cultivate Certified Public Psychologis, students engage in off-campus training at the Department of Psychiatry and Neurology of the University Hospital and other regional facilities to enhance their clinical psychology practice skills. ⑤Assessment of achievement in general competencies and specialized competencies involves self-assessment upon enrollment, followed by self-confirmation using the TWINS achievement assessment support system at the time of advancement to the second year and upon submission of the master's thesis. The level of competence achievement is shared with the supervising professor at each stage, who provides guidance and advice regarding coursework and other matters. ⑥A secondary thesis advisor is determined early after enrollment. Research guidance is conducted through a joint supervision system involving both the primary and secondary thesis advisors.

Admission Policy

Desired Student Profile	Master's Program in Psychology aims to cultivate individuals who aspire to become researchers pursuing advanced psychological research by proactively acquiring psychological methodologies, knowledge, and skills, and who intend to advance to the Doctoral Program. It also seeks individuals aiming to become practitioners of psychological support holding Certified Public Psychologist or Clinical Psychologist qualifications, as well as those pursuing advanced professional careers based on specialized psychological research capabilities. These include experts in affective engineering, ergonomics, cognitive engineering, specialists analyzing socio-psychological situations such as social and market research, specialists in personnel management and evaluation, and public servants with psychological expertise. We seek individuals deeply committed to psychology for understanding humanity, who can learn autonomously. We welcome not only graduates from psychology-related undergraduate programs but also those who wish to study and pursue psychology professionally.
Student Selection Process	Admission examinations are conducted through the general entrance examination. The general entrance examination selects candidates based on a specialized examination, a specialized foreign language examination (English), and an oral examination. It comprehensively evaluates fundamental knowledge of psychology as a whole, foreign language proficiency relevant to the field, research implementation ability, and communication skills.

Learning Support Framework

Academic Support	By the following methods, effective learning support is being provided. ①By adopting a dual instructor system, we ensure that students have the opportunity to receive guidance from different perspectives than those of their main instructors. ②A student support team is formed by the degree program leader, primary and secondary instructors, and student counseling staff, providing psychological adaptation support in a manner that is optimal for each individual student. ③A career support committee has been established to provide information on various career support initiatives within the university.

Opportunities for Peer Interaction	The following methods enhance peer effects among students, aiming to improve learning motivation and research quality. ①Provide all students with a place to belong within the graduate student lounge, creating a learning environment conducive to interaction with fellow students from both the first and second semesters. ②In the first year, attendance at the master's thesis guidance sessions and examinations for second-year students in the first-year program is mandatory. Participation in and observation of the doctoral thesis preliminary examinations and examinations for second-year students in the second-year program is also facilitated, promoting research-related exchanges among students. ③Participation in the “Student Gathering” hosted by the Graduate School is encouraged, fostering interaction with students from other degree programs.
Opportunities for Student–Faculty Interaction	The following methods are employed to provide opportunities for interaction with faculty members, aiming to enhance learning motivation and research quality. ①All faculty members responsible for the degree program participate in thesis guidance meetings and thesis review meetings. By posing questions and offering advice to each student, they provide opportunities for research exchange with faculty members other than the student's primary advisor. ②Student-Faculty Consultation Meetings are held to broadly gather student feedback on education, research guidance, clinical psychology practicums, and student life within the Psychology Degree Program, enabling the program to strive for improvement. ③Participation in the “Student Gathering” hosted by the Faculty of Arts and Sciences is encouraged to promote interaction with faculty members across disciplines. ④Faculty members participate in student-organized social events, such as new student welcome parties, to foster interaction.

Approaches to Assuring and Enhancing Educational Quality

At the end of each academic year, the Degree Program Educational Outcomes Review Committee convenes. Based on the evaluation results from the Master's Thesis Review Committee and the status of student research activities, it confirms the educational outcomes for each subprogram and for the degree program as a whole. These results are analyzed over time to identify educational strengths and areas for improvement. Necessary improvement measures are then formulated and implemented to ensure educational quality assurance.

Master's Program in Disability Sciences

■ Master of Arts in Disability Sciences

Program Educational Objectives

As the first stage in cultivating research professionals, this program trains researchers with basic research competence who can promote scientific and practical research of disability sciences, as well as highly skilled professionals and competent special needs educators who have a scientific foundation, appropriately demonstrate their skills in practice, and have the potential to become leaders in Japan and abroad.

Graduate Profile	From a foundation of basic and practical knowledge and skills in disability sciences, graduates will be able to use the exploration of the nature of disabilities and their characteristics to contribute to the development and application of assistive technologies.

Diploma Policy

The degree of Master of Arts in Disability Sciences is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Ability to plan and execute research: The basic knowledge and skills to plan and execute research relating to disability science	①Can the student develop a research plan for an important issue based on knowledge of disability sciences? ②Can the student present, modify as needed, and execute a research plan they developed?
	7. Ability to understand disability: Extensive knowledge of disability sciences and the ability to apply it	①Can the student understand and describe knowledge and techniques related to disability sciences, as well as current conditions and challenges? ②Can the student identify and work to solve research questions related to disability sciences based on expert knowledge?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ethical understanding and attitude: The ability to follow ethical procedures necessary for research and practice aiming to understand disabilities and resolve associated challenges	①Has the student taken and completed a course on ethics in disability sciences? ②Can the student understand the ethical perspectives and knowledge necessary for disability sciences research and execute such research?
Guidelines for Assessing Learning Outcomes	The master's thesis is regarded as the culmination of learning achievements. The comprehensive evaluation of students' attainment of learning outcomes, based on the degree-awarding policy, is conducted through thesis writing and the thesis design, as well as the interim and final presentations (“Disability Science Research Methods I, II, III”). The master's thesis is examined and evaluated by a Dissertation Committee composed of three members: one main supervisor and two co-supervisors. The evaluation is based on the criteria for the degree thesis and the knowledge and skills (competences) stipulated in the degree-awarding policy, specifically assessing whether students: – Possess advanced knowledge of disability studies and can apply research findings for social benefit (Application of Knowledge) – Analyze issues from multiple perspectives with broad vision and planning, and solve problems related to disability (Management Ability) – Clearly and accurately communicate their research and expertise (Communication Ability) – Work collaboratively with others in research and problem-solving (Teamwork) – Have the awareness and language skills to contribute internationally, gather global information, and disseminate findings (International Competence) – Plan and conduct research on important issues in disability science (Research Planning and Execution) – Identify and explain research topics based on wide-ranging knowledge of disability science (Understanding of Disability) – Conduct research appropriately with ethical awareness and knowledge (Ethics and Attitude)	

Evaluation Criteria for Degree Theses/ Dissertations	– In the guidance of the master's thesis, the Research Guidance Committee consisting of 1 thesis advisor (chairman) and 2 assistant advisors (committee members) will provide guidance. The submitted thesis will be reviewed and evaluated by a Thesis Review Committee comprising 1 primary reviewer and 2 secondary reviewers. – Evaluation of the master's thesis will be made comprehensively from the following perspectives, based on the peer review of the submitted thesis, the content of the final presentation, and the results of the final examination. 1. The significance and position of the research in the field of disability sciences is clearly expressed based on an understanding of research and research trends in relevant fields both in Japan and internationally. 2. The results of original research contributing to the development of the field of disability sciences are included in an amount appropriate for a master's thesis. 3. The reliability of the research findings has been adequately verified based on sufficient knowledge of research integrity. 4. The discussion of the research findings is valid, and the conclusion is based on objective evidence. 5. The research background, objective, method, results, discussion, and conclusion are organized in a format appropriate for a master's thesis in this field.

Curriculum Policy

In the Master's Program in Disability Sciences, students acquire basic and practical knowledge and skills in disability sciences, cultivate the ability to explore and identify the nature of disabilities and disability characteristics, and attain basic research competence. From this foundation of basic research competence, students further acquire the ability to contribute to the development and application of assistive technologies. To achieve this, students are provided with education and research guidance aiming to cultivate research skills, expert knowledge, and an ethical perspective in a core specialization, along with basic training in related fields, a broad perspective, and general knowledge and abilities that support activities in a variety of social settings.

Curriculum Design Framework	– Foundational courses are core courses that form a foundation for disability sciences and provide students with basic research skills in disability sciences leading to three career tracks. Major courses (general) provide students with the knowledge and skills necessary for highly skilled professionals, including an ability to understand disabilities and disability characteristics, as well as principles, systems, and support methods for disability-related education and welfare. Major courses are designed to provide students with in-depth knowledge and skills in specific specializations from the many perspectives on individual needs arising from principles, systems, and disability characteristics according to their academic needs and interests and in light of the three career tracks.

Curriculum Design Framework	– Through Disability Sciences Surveys and Experiments Lab I and II, students will acquire the ability to plan and execute research and ethical understanding and attitude. – Through other foundational courses such as Disability Sciences Research Methods, students will acquire the ability to plan and execute research, as well as the ability to bridge the gap between research and practice. – Through major courses (general), students will acquire the ability to understand disabilities and develop and execute services. – Through Special Topics courses, a subset of major courses, students will acquire the ability to plan and execute research and the ability to understand disabilities in each specialized area of disability sciences or in areas that apply across different disabilities (e.g., principles, systems). – Through Practicum courses, a subset of major courses, students will acquire the ability to develop and execute services, the ability to bridge the gap between research and practice, and ethical understanding and attitude in each specialized area of disability sciences, or for areas that apply across different disabilities (e.g., principles, systems).
Teaching and Learning Methods	– Students will acquire a total of 30 credits: 5 credits from compulsory foundational courses, 7 credits from major courses in their specialization (Special Topics I and II, Practicum I, II, and III in the student's area of specialization and generally taught by their thesis advisor), and at least 18 credits from other courses (general graduate courses, elective foundational courses, major courses [general], or Special Topics I and II/Practicum I and II in an area outside the student's specialization). – Research guidance for the master's thesis will be provided in an organized and systematic manner through the foundational courses Disability Sciences Surveys and Experiments Lab I and II (compulsory) in the first year, the foundational courses Disability Sciences Research Methods I, II, and III (compulsory) in the first and second years, and the major course Practicum III (elective compulsory) in the student's area of specialization in the second year. – Students aiming to become disability sciences researchers will take courses with an emphasis on learning basic research competence (in foundational courses) and specialized knowledge and skills in both specific disability and cross-disability areas (in major courses) as the first step in their training as a researcher. – Students aiming to become educators in special needs schools or classrooms will take courses with an emphasis on learning basic research competence (in foundational courses) and acquiring knowledge and skills related to both the principles and systems of special needs education and the physiology, psychology, curriculum, and instruction of children with disabilities (in major courses [general]) as highly skilled professionals in the field of special needs education. – Students aiming to work in rehabilitation institutions or welfare facilities for people with disabilities will take courses with an emphasis on learning basic research competence (in foundational courses) and acquiring knowledge and skills related to disability development, clinical practice, and support (in major courses [general]) as highly skilled professionals in the field of support for people with disabilities.

Admission Policy

Desired Student Profile	We are seeking individuals who aspire to contribute to disability-related areas such as life-long education, welfare support, administration, and international cooperation and are eager to play an active role in the field of disability sciences as researchers or highly skilled professionals. We are accepting a wide range of applicants, including students who learned the basics of disability sciences at the undergraduate level, those who come from another field and seek to specialize in disability sciences, educators or working professionals, individuals with medical qualifications, and international students.
Student Selection Process	Three types of entrance examinations are offered: general, recommendation, and special selections (working professionals or one year course for inservice teachers). The program can also be completed through our extended program system. – The general and recommendation entrance examination evaluates based on the score of the English external examination, expertise in disability science, and the logic and preparatory situation to conceive the research plan. – For the special selection for working professionals option, the English external examination will be waived, evaluates based on the examination of application documents, expertise in disability science, and the logic and preparatory situation to conceive the research plan.

Learning Support Framework

Academic Support	– In the three research presentations (Thesis Design, Interim, and Final), students receive guidance on research presentations through supervision by main and sub-advisors, as well as peer review among students. – Some lecture courses use on-demand videos effectively to improve understanding and support efficient learning. – Learning skills such as information gathering, analysis, logical thinking, and writing are supported through courses like Disability Science Surveys and Experiments, Disability Science Seminars, and Research Methods. Students receive guidance from multiple faculty members with different expertise. – To promote effective learning, students review their competence achievement status at the end of each academic year using TWINS, providing an opportunity for self-assessment of progress. – The program provides independent financial support to partially cover Article Processing Charges (APCs) and English editing costs, thereby facilitating the international dissemination of research by graduate students.

Opportunities for Peer Interaction	– For international exchange, students are given opportunities to interact with partner universities in Asia and North America through CIC partnerships and inter-departmental agreements. This helps raise international awareness and motivation for global research activities. – Several basic and specialized courses include group work, presentations, and report assignments, allowing students to learn effectively while deepening interactions both inside and outside class. – At the end of each academic year, a joint student meeting for master's and doctoral students is held, providing opportunities to share information about thesis writing, job hunting, and student life. It includes talks and networking with graduates, encouraging students to think about career development after degree completion. – In common graduate courses offered by this program (organized by BHE), students with diverse expertise work in teams to propose new projects. This provides opportunities for interaction, fosters motivation, and encourages solutions to social issues.
Opportunities for Student–Faculty Interaction	– In the thesis supervision system, each student is guided by one main advisor and two sub-advisors, providing opportunities to work with faculty from diverse fields. – Participation in joint research meetings and faculty-led projects gives students chances to interact and increase their research motivation. – Tools such as Teams and Manaba are used to provide feedback on reports and tests, and to check and support research progress. – Individual meetings are held as needed, with coordination between main and sub-advisors to support students toward degree completion. – Networking events with graduates active in society provide opportunities for career and research consultation. – Using Microsoft Forms, students complete self-evaluations of competence and give feedback on the curriculum. The results are shared in orientations and through individual feedback from advisors. – At the end of each year, student surveys and meetings are held to exchange opinions about education and research guidance in the program. – Upon graduation, students are asked to provide an active email address to build an alumni network.

Approaches to Assuring and Enhancing Educational Quality

- In the program's education meetings, attended by all faculty members, the results of students' self-evaluation surveys on competences and the evaluations of the master's thesis presentations are shared with the entire faculty to verify the appropriateness of the curriculum and the suitability of the research guidance.
- Graduates who are active in society are invited to serve as external evaluation committee members for this degree program. We receive comments from graduates regarding the improvement of the program's education and research guidance and hold discussions. The feedback from these external sources is used to consider the direction for quality assurance and improvement of education.
- At the end of each year, program-specific student surveys and student meetings are held to exchange opinions on the program's education and research guidance. The results are used for inspecting educational activities and considering initiatives for educational improvement in the following and subsequent years.

Master's Program in Counseling

Master of Science in Counseling

Program Educational Objectives

This program focuses on the field of counseling psychology, and provides comprehensive and fundamental education in counseling to in-service professionals and psychological clinicians. It aims to foster advanced professionals and university teachers who will acquire the results and methodologies of international and interdisciplinary research, and contribute to society through scientific, practical, and developmental solutions to various problems in the workplace and society, in cooperation with other professions.

Graduate Profile	By focusing on the specific field of counseling within psychology, students will acquire comprehensive knowledge and techniques related to the field, and have the ability to plan and conduct practice and research with ethical considerations, while building on their own rich, professional experience.

Diploma Policy

The degree of Master of Science in Counseling is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research skills: basic knowledge and ability to set research questions and carry out research plans in the counseling field.	①Being able to formulate research questions in the field of counseling ②Acquire basic knowledge and skills to carry out a research plan in the field of counseling
	7. Expertise: High level of expertise and operational skills in the counseling field	①Advanced expertise in the field of counseling. ②Acquired advanced operational skills in the field of counseling.
	8. Ethics: A sense of ethics and ethical knowledge appropriate for personnel with basic research skills in the counseling field or advanced professionals.	①Possess basic research skills in the field of counseling ②Have acquired ethics appropriate for advanced professionals.

Guidelines for Assessing Learning Outcomes	Learning outcomes are assessed using the Achievement Evaluation Table. At each stage, attainment is confirmed and evaluated against the competences set out in the Diploma Policy. – In the fall semester of the first year, upon Research Plan Submission, the homeroom teacher supervises the student's self-check of research preparedness and provides review and guidance. – At the preliminary preesntation held in the spring semester of the second year, the academic advisor conducts the First-Stage Achievement Review based on the abstract and the presentation, and provides self-checking, review, and guidance on the learning status. – At the interim presentation held in the fall semester of the second year, the academic advisor conducts the Second-Stage Achievement Review based on the abstract and the presentation, and provides self-checking, review, and guidance on the learning status. – At the end of the second year, the Chair and two Co-Chairs peer-review the master's thesis and, through the final presentation and oral examination, conduct the Final Achievement Review.
Evaluation Criteria for Degree Theses/ Dissertations	1. Based on an understanding of domestic and international research trends and previous research in related fields, the significance and positioning of the relevant research in the field of counseling should be clearly stated. 2. The master's thesis should contain an appropriate amount of original research results that contribute to the development of the field of counseling in Japan and abroad. 3. The reliability of the research results has been sufficiently verified based on sufficient knowledge of research fairness. 4. The discussion of the research results is reasonable, and the conclusions are based on objective evidence. 5. The background, purpose, methods, results, discussion, and conclusions of the research should be summarized in a format appropriate for a master's thesis in the field. Standard to be met by the thesis: Both the Chair and Co-Chairs must be able to judge that the thesis meets 1-5 above. Review committee structure: 1 The Chair, 2 Co-Chairs Examination method: Master's thesis, thesis presentation, and oral examination are judged by the Chair and Co-Chairs based on the academic paper standards. Examination items: Master's thesis, thesis presentation, oral examination

Curriculum Policy

Organize coursework that enables working graduate students to acquire knowledge in counseling-related fields, acquire research literacy, and write a master's thesis.

Curriculum Design Framework	Education and research guidance will be provided to cultivate a broad basic background in the field of counseling, a broad perspective, and general knowledge and abilities to support activities in various fields of society, as well as research skills, specialized knowledge, and ethical views in developmental psychology, social psychology, clinical psychology, industrial/organizational psychology, educational psychology, and criminal psychology. Specifically, students acquire research literacy skills, problem finding skills, and research planning skills in the required subjects, and research execution and presentation skills in the coursework related to the three research presentations per year. In addition, students learn about various theories of mental and physical health, psychosocial problems in the human development process and their support, various problems in modern society and issues in organizations, assessment and support planning in psychology and education, psychological research methods, and statistical analysis through discussions and exercises in elective specialized subjects. discussion and seminars. It is further recommended that students take one credit from the common specialized foundation courses of the Faculty of Arts and Sciences to contribute to the cultivation of basic knowledge, broad perspectives, and general knowledge and abilities in related fields, based on their major.
Teaching and Learning Methods	– For practical research and presentation skills related to counseling, lectures and practical training on various research methods are given from the first year. Individual and group research guidance and presentations are also given. – In terms of ethical considerations, workshops and explanatory meetings related to ethical review are held in the first year, and individual guidance is provided mainly by the Ethics Committee and supervisors. – As for cooperation and collaboration with other fields and disciplines, since students and graduates have various fields of specialization and places of employment, information exchange and research collaboration among students and graduates are actively conducted from the time they are in school. – For practical research skills from an international perspective, students will be involved in activities at overseas academic conferences and exchanges with overseas universities that are highly regarded for their practice and research in the counseling field.

Admission Policy

Desired Student Profile	We are looking for in-service professionals, psychological clinical specialists, and others who have the will and motivation to contribute to society by acquiring a broad perspective, deepening and developing expertise, and acquiring research techniques in counseling-related fields, and by solving various problems in the workplace and society in a scientific, practical, and developmental manner, based on their own abundant professional experience.

Student Selection Process	The entrance examination is conducted in two stages. In the first stage, the results of the document review and the paper examination are comprehensively judged, and in the second stage, an oral examination is conducted for those who pass the first stage of examination. Successful applicants will be determined based on the results of the oral examination and the results of the first stage examination.

Learning Support Framework

Academic Support	– Opportunities are provided to participate in seminars and research presentation meetings outside one's cohort, creating occasions to reassess one's research framework objectively and supporting the deepening of research. – All faculty members, mainly homeroom teachers, will provide a system for individual ounseling on matters specifi c to working graduate students (balancing work and study, family situations such as childcare and nursing care). Establish an environment for data analysis rooms and graduate student laboratories so that working graduate students can come directly from their workplaces to the university for study and research activities. Secure a certain number of hours of intensive lectures on Saturdays and Sundays in relation to the workplace.
Opportunities for Peer Interaction	– The curriculum provides opportunities to attend presentation meetings and promotes interaction among students beyond year level. – By utilizing TAs, we create a structure that continuously generates opportunities for peer learning.
Opportunities for Student–Faculty Interaction	– All faculty members of the degree program participate in presentation meetings for Basic Methodology of Counseling III and Special Study on Counseling I–III, thereby providing opportunities to interact with faculty members other than the supervising professor. – An annual student–faculty roundtable is held, and students' opinions are actively incorporated.

Approaches to Assuring and Enhancing Educational Quality

– Students' study progress is reviewed at the program management meeting, and improvement measures are considered as necessary.
– At the program management meeting, students' learning outcomes are assessed, and the validity of the curriculum and the appropriateness of instruction are verified.
– Program-wide educational issues are discussed in FD activities in which all degree-program faculty members participate.

Master's Program in Rehabilitation Science

■ Master of Science in Rehabilitation

Program Educational Objectives

In this course, highly specialized professionals shall be trained, who provide comprehensive and fundamental education for the researchers and specialized professionals relating to rehabilitation, acquire international/interdisciplinary research outcomes and methodology in collaboration with other occupations, scientifically/practically/developmentally solve various problems in their workplace and society and contribute to society.

Graduate Profile	In this Degree Program, the human resources shall be trained who have comprehensive and inclusive ability necessary for correspondence and development in a broad view relating regarding various problems which working individuals in-service encounter at their workplaces and whose solutions are promptly required. In comprehensive and inclusive rehabilitation area, highly specialized professionals and faculty members with high practical R&D ability relating to scientific solution of frontline problems shall be especially trained.

Diploma Policy

The degree of Master of Science in Rehabilitation is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of rehabilitation.	①If capable of establishing appropriate research plan relating to rehabilitation and properly conveying such plan to others. ②If capable of completing appropriate master's degree relating to rehabilitation and properly make presentation of its results.
	7. Specialized knowledge: Advanced specialized knowledge and command of the areas of rehabilitation.	If capable of acquiring highly specialized knowledge relating to rehabilitation and an ability to independently disseminating it.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ethical view: ethical view and ethical knowledge appropriate for the human resources or highly specialized professionals who have basic research ability in the area of rehabilitation.	If having acquired basic research ability relating to rehabilitation and ethical view and ethical knowledge.
Guidelines for Assessing Learning Outcomes	− Learning outcomes are assessed through achievement evaluations based on the “Achievement Evaluation Form”. This process confirms and evaluates the acquisition of competences aligned with the degree conferral policy at each stage. − During the fall semester of the first year in “Fundamentals of Rehabilitation Methodology II”, all faculty members provide guidance on research preparation based on the content of literature review presentations and preliminary research plan presentations. − Provide guidance and advice on pre-designed research plans developed by multiple faculty groups during the “Fundamentals of Rehabilitation Methodology III” course in the fall semester of the first year. − In the spring semester of the second year, during “Rehabilitation Research Methods II”, an interim research presentation session is held. Focused on the progress of the master's thesis, a question-and-answer session is conducted, primarily led by the secondary advisor. Based on this, the primary advisor conducts the Stage 1 Achievement Review, facilitating self-assessment of learning progress, review, and guidance. − In the fall semester of the second year, during “Special Rehabilitation Research”, guidance and advice on thesis writing are provided, followed by an interim presentation session. A Q&A session, primarily led by the secondary advisor, is held regarding the research abstract and presentation content. Based on this, the primary advisor conducts the Stage 2 Achievement Review, facilitating self-assessment, review, and guidance on the student's learning progress. − At the end of the second year, the primary examiner and two secondary examiners will review the master's thesis. They will also conduct the final achievement assessment during the final presentation (including an oral examination) required for earning credits in “Special Research in Rehabilitation”.	

Evaluation Criteria for Degree Theses/ Dissertations	1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in Rehabilitation science field is clearly described. 2. Right amount of original research outcomes that contribute to development in and outside Japan of Rehabilitation science field is contained as master's thesis. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for research outcomes is valid and conclusion is based on objective evidence. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as master's thesis of Rehabilitation science field. Level standards required for the degree thesis: Both chief supervisor and sub supervisor(s) can judge that master's thesis has satisfied the above-mentioned 1 to 5. Review board members: One chief supervisor, two sub supervisors. Examination method: both the chief supervisor and sub supervisors shall comprehensively judge master's thesis, thesis presentation and oral examination. Examination items: master's thesis, thesis presentation and oral examination.

Curriculum Policy

The education/research supervision shall be provided to cultivate a basic knowledge, a wide view and generic competences to support the active role in social diversified settings to develop highly specialized professionals based on interdisciplinary rehabilitation and teachers for higher education of training schools for rehabilitation professionals etc. including research ability, specialized knowledge and ethical view that cover four areas of rehabilitation (medical rehabilitation, rehabilitation for special needs education, social rehabilitation and vocational rehabilitation).

Curriculum Design Framework	Centering on students' majors, in order to contribute to cultivating basic knowledge and wide view, generic competences in relevant areas, it shall be recommended to take one credit from Inter-disciplinary Foundation Courses. Specific subjects to be registered and system to deploy sub supervisor(s) shall be determined based on research plans career plans of individual students etc. Upon determination, the followings shall be kept in mind: acquiring an ability to find problems and to solve them and research literacy such as a planning ability relating to clinical study, to create master's thesis, to enrich course work in order to acquire skills for presentation and debate communication and enhance qualifications as researchers in clinical study. Additionally, core curriculum shall be organized in order to develop competent human resources with advanced comprehensive perspective by organizing curriculum not confined to ordinary area of expertise.

Teaching and Learning Methods	– In order to acquire practical research ability/presentation ability relating to rehabilitation, lectures/seminars relating to various research methods shall be provided and individual and group research guidance and presentation shall be performed from the 1st year. – Regarding ethical consideration, training sessions and information sessions relating to ethical review shall be held in the 1st year and individual instruction shall be provided mainly by ethic committee members and supervisors. – Regarding cooperation/collaboration with other areas/other areas, as the area of expertise/ employment of the students/graduates are diversified, information exchange and research cooperation shall be frequently conducted with the students/graduates while studying in this course. – For cultivating practical research ability with an international perspective, the lectures of "Rehabilitation English" shall be provided. Besides, opportunities shall be provided for students to interact with reputable overseas universities for practices/research in rehabilitation area.

Admission Policy

Desired Student Profile	Education shall be provided for the researchers and highly specialized professionals who have an interest in comprehensive/inclusive rehabilitation for the lifespan including elderly people/persons with disabilities/children and perspective of interdisciplinary research. In addition to the above-mentioned, education shall be provided by putting emphasis on training of the researchers and highly specialized professionals relating to rehabilitation who can cross-sectionally analyze/ research the four areas of rehabilitation (medical rehabilitation, rehabilitation for special needs education, social rehabilitation and vocational rehabilitation).
Student Selection Process	Entrance examination shall be implemented for the working individuals who have practical experience of one or more years in rehabilitation-related area after graduating from universities. After releasing admission information and implementing open campus/admission guidance (April and May), acceptance of applicants shall be closed in the middle of July. The entrance examination shall be implemented at the end of August and the results shall be announced for the entrants of April in the following year in October. In the entrance examination, students shall be provided evaluation by document screening, essay examination to examine basic knowledge and interview test concerning reason for application.

Learning Support Framework

Academic Support	– By taking the “Rehabilitation Research Project” seminar course, students are given the opportunity to explore future research topics by re-presenting the actual content of their research findings previously presented at relevant conferences, including international ones. Furthermore, by taking the “Rehabilitation Case Study” seminar course, students deepen their understanding of rehabilitation practice cases from their own workplace as case studies, providing an opportunity to objectively review their own research. – We regularly hold faculty development programs (twice a year) that introduce, from a broad perspective including other degree programs, methods for summarizing research achievements such as paper submissions and concrete examples of career development after graduation.
Opportunities for Peer Interaction	– The curriculum incorporates a mechanism as a requirement for credit acquisition that provides opportunities to participate in design, midterm, and final presentations outside one's own academic year. This aims to promote collaborative research among students across grades and facilitate interaction among graduate students. – An alumni association is held to provide opportunities for interaction among current students and graduates of the degree program.
Opportunities for Student–Faculty Interaction	– The omnibus format of “Fundamentals of Rehabilitation Methodology I” increases interaction opportunities with multiple instructors. “Fundamentals of Rehabilitation Methodology II” increases interaction opportunities with the assigned instructor. The joint instruction by multiple instructors in “Fundamentals of Rehabilitation Methodology III” increases interaction opportunities with instructors whose research aligns more closely with the student's own research theme. Furthermore, following Q&A sessions with all faculty members responsible for the degree program during the first-year pre-design presentation and the second-year design, interim, and final presentations, additional opportunities for exchange are provided through informal discussions. – An annual student-faculty discussion meeting is held, providing a relatively informal setting for discussions regarding the curriculum, improvements to the educational and research environment, and advice on advancing to the doctoral program.

Approaches to Assuring and Enhancing Educational Quality

Student progress is reviewed at Rehabilitation Science Degree program and curriculum meetings monthly, where improvement measures are discussed as needed to prevent potential issues.

Master's Program in Neuroscience

■ Master of Neuroscience

Program Educational Objectives

To address various specific issues in society, such as aging, educational challenges, and mental health problems, this program aims to cultivate individuals who can apply their expertise in neuroscience, including knowledge of the human mind, behavior, brain functions, and related abnormalities, to contribute to solving problems, while demonstrating exceptional teamwork and communication skills. Additionally, this program seeks to develop individuals with advanced expertise and techniques grounded in a broad and profound academic foundation in neuroscience, equipping them with the international competitiveness required to pursue research training in the doctoral program.

Graduate Profile	– Individuals who, with an interdisciplinary understanding of neuroscience, possess the ability to address complex issues related to the mind and behavior that modern society faces, in various settings both domestically and internationally. – Individuals who can advance both basic and applied research by leveraging their academic foundation in normal and disordered brain functions.

Diploma Policy

The degree of Master of Neuroscience is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Basic knowledge/specialized knowledge: acquisition of fundamental knowledge that covers neuroscience in general essential to discover issues, draft plans and carry out research in the area of neuroscience	①If capable of discovering new issues based on fundamental knowledge in the area of neuroscience. ②If capable of drafting research plan to solve discovered issues.
	7. Practical research skill: Ability to carry out basic research (experiment/survey) subject to human and animals in neuroscience area based on ethics of researchers	If capable of solving research tasks by making use of basic research method in the area of neuroscience.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Research information collection/ ability to disseminate findings: communication skills including proficiency in foreign languages, sufficient for implementation for understanding of papers in the area of neuroscience, information collection and dissemination of findings	①If capable of understanding papers in the area of neuroscience published in international magazines and acquiring the latest findings therefrom. ②If capable of accurately and clearly explaining the contents of research and specialized knowledge, based on logical thinking, not only to those for different areas and not just one's own area.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted by assessing the acquisition of competences, as stipulated in the degree conferment policy, through the use of an “Achievement Evaluation Table (Rubric)”. First Stage (End of the Autumn Semester of the First Year): At the Master's Thesis Proposal Presentation, the principal examiner, co-examiner, and academic advisor conduct the first-stage achievement assessment based on the rubric. Final Stage (End of the Autumn Semester of the Second Year): At the Master's Thesis Research Review Meeting, all faculty members responsible for research supervision conduct the second-stage achievement assessment based on the rubric. Subsequently, the Master's Thesis Examination Committee, consisting of the principal examiner and at least two co-examiners, conducts a rubric-based review. The final achievement assessment is then carried out by the entire faculty at the Educational Council.	
Evaluation Criteria for Degree Theses/ Dissertations	A presentation at the Initiative Presentation for Master’s Thesis and a pass in the Research Qualification Test for Master’s Thesis are prerequisites for the submission of the master's thesis. The doctoral thesis shall be approved as valid regarding the following evaluation items and judged as a pass in final examination. (Evaluation items) 1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in neuroscience is clearly described. 2. Right amount of original research outcomes that contribute to development of neuroscience is contained as master's thesis. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as master's thesis of neuroscience.	

Evaluation Criteria for Degree Theses/ Dissertations	(System for examiner/examination method) The examination committee for master's thesis shall be composed of three faculty members (the primary advisor is one of the research supervisors), a pass or a failure shall be judged by implementing oral examination relating to the master's thesis and its relevant areas as a final examination at the presence of all examiners.

Curriculum Policy

The curriculum shall aim at having students acquire basic knowledge that cover neuroscience in general, research method, ability to think logically, ability to plan and implement research, ability to discover/solve problems, ability to coordinate with/manage different areas, communication skills/cooperativeness and ability to debate in English in cross-disciplinary way.

Curriculum Design Framework	– We offer the basic courses of “Introduction to Neuroscience” and “Neuroscience Laboratories” which consist of four sub-categories, i.e., “molecular/cellular”, “systems”, “behavior/cognitive” and “applied” neuroscience. With this course work the basis of all the areas of neuroscience can be systematically learned. – Through compulsory subjects of General Foundation Subjects (“Neuroscience Professional Career Development”) and Foundation Subjects for Major (“Introduction to Neuroscience”, “Research Proposal Writing in English”), basic research ability of neuroscience and scientific English communication skills shall be trained. Additionally, students shall be required to take Inter-disciplinary Foundation Courses and learn knowledge, way of thinking and approaches of neighboring areas. – In “Neuroscience Laboratories” , students shall learn various research methods for neuroscience through hands-on practical training. In “English Journal Club”, “Neuroscience Research Seminar”, students shall independently learn a broad knowledge related to the trend of neuroscience research. Additionally, by establishing Translational Neuroscience Internship, opportunities shall be provided to experientially learn how the findings of basic research of neuroscience is applied to or utilized in the actual social spheres. – By establishing four compulsory subjects as “Neuroscience Thesis Research”, and gradually providing instruction for the process from decision of theme for master's thesis, research initiative presentation for master's thesis, research qualification test for master's thesis, final examination of master' thesis, final public presentation of master' thesis, to acquisition of master's degree, quality of the master's degree shall be assured.

Teaching and Learning Methods	Learning in the first year – Students shall take “Neuroscience Professional Career Development” and independently consider and establish leaning plan until acquisition of master's degree and their career path after completion of master's degree. – Students shall take “Research Ethics” and “ Inter-disciplinary Foundation Courses (subjects may be freely s)” and a broad education relating to ethical views as researcher and human science shall be acquired. – By completing all of “Introduction to Neuroscience A, B, C, D” (Principles of Neural Science, Fifth Edition 5th edition shall be planned for use as a textbook), basic knowledge shall be acquired relating to neuroscience at the levels of “molecular/cellular”, “systems”, “behavior/cognitive” and “applied” – Based on the lecture of Introduction to Neuroscience, one or more subjects from “Neuroscience Laboratories A, B, C, D” in any of the areas: “molecular/cellular”, “systems”, “behavior/cognitive” and “applied”, students shall practically learn basic research tasks and research method of each area. – By completing “Research Proposal Writing in English I”, and “English Journal Club I”, students shall independently learn communication skills in English, an ability to debate and an ability to read in English. Additionally, through research seminar by invited lecturers and informal discussion, students shall learn a fun of advanced research of a broad area of neuroscience. – In “Neuroscience Thesis Research I”, students shall search and learn the literature of previous research relating the theme of master's thesis research. – In “Neuroscience Thesis Research II”, students shall advance research for master's thesis by going through research initiative presentation for master's thesis and advance preparations for research qualification test for master's thesis in July in the second year. – According to students' own career plan, by completing the subjects established by neuroscience master's degree program such as “Research Proposal Writing in English II”, “English Journal Club 2”, “Neuroscience Advanced Research Seminar II”, “Translational Neuroscience Internship” etc., “ Inter-disciplinary Foundation Courses” and other master's degree program, students shall acquire higher knowledge, research method, ability to logically think, English ability, and practical ability. – In “Neuroscience Thesis Research III”, students shall continue research for master's thesis after passing research qualification test for master's thesis. In “Neuroscience Thesis Research IV”, students shall advance preparation of master's thesis and aim at passing final examination of master' thesis.

Admission Policy

Desired Student Profile	The desired students shall have high interest in specialized research regarding comprehensive brain function and behavior, mind and mental disorder. It is desirable but not always essential that students have received undergraduate education, including neuroscience, psychology, disability science, biology and basic medicine.
Student Selection Process	The entrance examination shall be composed of written examination and oral examination, by which linguistic skill, knowledge of the area of expertise and motivation and qualification for learning shall be comprehensively evaluated.

Learning Support Framework

Academic Support	The program supports participation in training courses organized by the International Brain Research Organization (IBRO Schools) as well as the Neuroscience Summer Camp at National Taiwan University. These opportunities are designed not merely as venues for international exchange, but as platforms for building global research networks that will contribute to future scholarly activities. The Tri-Institutional Neuroscience Graduate Seminar (TiNGS), jointly organized by the University of Tsukuba, National Taiwan University, and Monash University Malaysia, is conducted online. Prior to presenting research abroad, students are provided with an international academic exchange setting in which they can challenge themselves in a familiar environment. As part of this initiative, they are given the opportunity to deliver concise three-minute flash talks in English.
Opportunities for Peer Interaction	The program actively encourages students to participate in the Gathering of the Graduate School of Comprehensive Human Sciences, thereby fostering interaction and exchange across academic years and disciplinary boundaries. The Master's Thesis Research Qualification Examination (interim presentation) in the spring semester, as well as the proposal presentation and public presentation in the autumn semester, are conducted in person. These occasions are designed to provide opportunities for mutual learning among students at all stages of both the Master's and Doctoral programs. Upon completion of overseas training or related activities, a public debriefing session is held, offering students an open forum for interaction and exchange with their peers.
Opportunities for Student–Faculty Interaction	The Master's Thesis Proposal Presentation is conducted in a poster format, with mandatory participation of all primary faculty members of the degree program. This arrangement provides opportunities for direct interaction not only with supervising faculty but also with students outside of one's own research guidance. Similarly, debriefing sessions following overseas training and related activities are organized as venues for interaction and exchange between faculty and students.

Approaches to Assuring and Enhancing Educational Quality

In the first half of the academic year, activities from the previous year—such as a review of the degree conferment process and the career paths of program graduates—are examined. In the second half, activities from the spring semester—including student admissions and grade distributions in major courses—are reviewed. These evaluations are conducted through Faculty Development (FD) sessions with the participation of all members of the Educational Council.

Master's Program in Nursing Science

■ Master of Science in Nursing

Program Educational Objectives

As Japan has falling birthrates and an aging society, there is a greater variety of and increased demand for medical care due to long-term and complex health problems of the patients with multiple diseases and disabilities. This master's degree program shall train highly specialized professionals, including midwives, and serve as one stage to train researchers. With a broad and deep academic knowledge that can contribute to solving such issues based on scientific evidence in nursing science.

Graduate Profile	The desired students shall explore nursing based on a firm ethical view and scientific evidence with interdisciplinary and international perspectives and have attitude to improve themselves as researchers. In addition, such students shall potentially become nurses with specialized knowledge/skills/practical ability as the basis of nursing research/practices and educators of nursing science to support education of nursing science.

Diploma Policy

The degree of Master of Science in Nursing is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems based on broad knowledge, even in other fields of expertise?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on significant tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your field and other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of contributing to international society and participatiing in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Ability to explore based on scientific evidence: Ability to explore, research and put into practice nursing based on scientific evidence	①Can you explore the problems of nursing science based on scientific evidence? ②Can you draft a practical training and research plan based on scientific evidence?
	7. Ability to put into practice in area of expertise: Ability to put nursing into practice in area of expertise: an ability to acquire knowledge and skills in the area of expertise of nursing science and educate/ research put such knowledge and skills into practice for nursing	①Can you acquire knowledge in the area of expertise as the basis of nursing science? ②Can you apply scientific evidence to education/research/ practices for nursing?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Interdiscipline of nursing: Ability to scientifically put nursing into practice from an interdisciplinary viewpoint	①Can you understand nursing science based on relevance with other academic areas? ②Can you conduct education/research/practices based on scientific evidence from an interdisciplinary viewpoint?
	9. Sensitivity and ethical view of nursing: Ability to research and put into practice nursing science based on rich sensitivity/firm ethical view	①Can you draft a research plan that considers research ethics for research tasks and appropriately implements such a plan? ②Can you put nursing into practice with ethical sensitivity?
	10. Ability to research and put into practice to aim at international applicability: an ability to use international research outcomes to students' research/practices and intend to study and put such findings into practice for nursing	Can you research/put into practice nursing by using research both inside and outside Japan?
Guidelines for Assessing Learning Outcomes	Each knowledge and competence outlined in the “Degree Conferment Policy” is evaluated using the following indicators and methods. [Assessment by Numerical Indicators] Numerical indicators are established for each competence item across all courses and student learning activities to conduct objective evaluations. Achievement target benchmark values are set for each knowledge and competence item to quantitatively measure students' attainment levels. [Assessment Process] ≪ Annual Assessment ≫ Once a year, supervisory faculty and the Academic Affairs Committee collaborate to confirm and evaluate each student's competence attainment level. The assessment is conducted from the following perspectives: – Achievement status of numerical indicators in each course – Attainment level against established benchmark values – Demonstration of knowledge and competences in research activities ≪ Final Assessment ≫ During the dissertation examination, the Dissertation Review Committee confirms that all competences have achieved the benchmark values. The committee comprehensively evaluates quantitative assessment results based on numerical indicators and the manifestation of knowledge and competences in the dissertation to determine the final level of achievement.	

Evaluation Criteria for Degree Theses/ Dissertations	(Evaluation criteria) <Master's thesis> 1. The contents of research contribute to nursing science. 2. The research is conducted by making use of appropriate methods by clearly setting its meaning and purpose. 3. The previous research is sufficiently considered. 4. The research generally has a consistency, and the thesis is written with appropriate form and writing style. 5. There is no ethical problem upon implementation of research or publication of its results. <Research outcomes concerning specific issues> 1. The contents of the research for specific theme shall contribute to high level nursing practices. 2. The research is conducted by making use of appropriate methods by clearly setting its meaning and purpose for nursing practices. 3. The previous research and application to practices is sufficiently considered 4. The research generally has a consistency, and the thesis is written with appropriate form and writing style. 5. There is no ethical problem upon implementation of research or publication of its results. (Procedures for evaluation) – In the spring term of the second year, the research progress of each student shall be evaluated through oral examination regarding research plan by one faculty member. The faculty member of nursing science master's degree program with different specialized research shall evaluate such research plan. – For the students who are expected to acquire more credits required for studying the course for more than two years and completion of the course, examination and the final examination for the master's thesis shall be performed. – The examination committee for master's thesis shall be composed of one chief examiner and two or more sub examiners, which examines level of completion of research for each student through public presentation and subsequent oral examination. The faculty member of nursing science master's degree program with different specialized research shall evaluate such research plan.

Curriculum Policy

The curriculum shall aim at cultivating interdisciplinary and international perspective in the area of nursing science for the students and develop an ability to explore nursing based on firm ethical view and scientific evidence and distinguished specialized knowledge/skills/practical ability as the basis of research/practices of nursing necessary to take up highly specialized occupation in the area of nursing science. In addition, by students' studying abroad in the universities that have academic exchange agreement and revitalization of academic exchange relating to education/research, the environment shall be provided where students may engage in education/research activities on global level.

Curriculum Design Framework	– The subjects as the basis of Major Subjects and promote rich humanity with a broad knowledge that corresponds to diversified needs due to progress in medical technology and changes in disease structure and scientific thinking shall be set as Foundation Subjects for Major. – Students shall be recommended that students take Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses in order to cultivate basic knowledge and a broad perspective of the relevant area and generic competences centered on students' major. – ” Introduction to Academic Integrity” as Graduate General Education Course (1 credit) shall be a compulsory subject. – The following training courses shall be set in accordance with the career path after completion of the master's degree course. ① research basic course to develop research basic ability to go on to the doctoral program, ② course to train midwives with research basic ability and highly practical ability. ［Research basic course］ – Through “Topics in Nursing Science”, “Research Methods in Nursing Science” as Foundation Subjects for Major for Major, Major Subjects, practical training as Major Subjects (common) and “Research in Nursing Science”, an ability to explore nursing based on scientific evidence shall be acquired. – Through “Research Methods in Nursing Science”, “Health Statistics”, Foundation Subjects for Major , practical training as Major Subjects (common) and “Research in Nursing Science”, an ability to research/educate nursing with specialized knowledge and skills as the basis of nursing science. – Through “Topics in Nursing Science” as Foundation Subjects for Major, Graduate General Education Courses, specialized subjects relating to other area of expertise and “Research in Nursing Science” as Major Subjects (common), an ability to scientifically analyze nursing from interdisciplinary perspective shall be acquired.

Curriculum Design Framework	– Through eAPRIN, ethical educational course in clinical study, Foundation Subjects for Major and “Research in Nursing Science” as Major Subjects (common) etc., research ability for nursing science based on rich sensitivity and firm ethical view shall be acquired. – Through learning “Global Health Nursing” as a specialized basic subject and special lectures by the lecturers of the universities with academic exchange agreement etc., an ability to intend for global nursing research shall be acquired. In addition, through “Research Methods in Nursing Science” as Major Subjects, criticism of the previous research in Major Subjects of each student's area of expertise and “Research in Nursing Science” as Major Subjects (common), an ability to make use of the nursing research outcomes on global level for students' own research. [Course to train midwives] – Through “Topics in Nursing Science”, “Research Methods in Nursing Science” and “Midwifery Practicum I/II” as Foundation Subjects for Major, Major Subjects, practical training as Major Subjects (common and “Research in Nursing Science” etc. as Major Subjects (common)., an ability to explore midwifery based on scientific evidence. – Through “Research Methods in Nursing Science”, “Health Statistics” and “Nursing Education” as Foundation Subjects for Major, Major Subjects, practical training and “Research in Nursing Science” etc. as Major Subjects (common) other than 31 credits necessary for acquisition of national nursing qualification, abilities for practical midwifery and research shall be acquired by integrating specialization of midwifery with the basis of nursing science. – Through “Topics in Nursing Science”, Graduate General Education Course and “Research in Nursing Science” as Major Subjects (common), an ability to scientifically analyze midwifery from interdisciplinary perspective. – Through eAPRIN, ethical educational course in clinical study, “Bioethics in Midwifery” as Foundation Subjects for Major necessary for acquisition of national midwife qualification, Major Subjects, practical training and “Research in Nursing Science” etc. as Major Subjects (common), practical ability for midwifery based on rich sensitivity and firm ethical view as a midwife shall be acquired. – Through “Global Health Nursing” as Foundation Subjects for Major and special lectures etc. by the lecturers at the universities with academic exchange agreement, an ability to intend for international midwifery practice shall be acquired. In addition, through “Research Methods in Nursing Science” as Foundation Subjects for Major, criticism of the previous research in Major Subjects and “Research in Nursing Science” as Major Subjects (common), an ability to make use of the findings of midwifery research on global level for midwifery practice.

Teaching and Learning Methods	– The Foundation Subjects for Major to be taken for acquisition of master's degree shall be 8 or more credits including “Topics in Nursing Science” (2 credits) (Graduate General Education Courses and the subjects of other major may be included). – The Major Subjects to be taken for acquisition of master's degree shall be 8 or more subjects including “Topics” of each student's own major (2 credits) and “Seminars” (2 credits). – The Major Subjects (common) to be taken for acquisition of master's degree shall be 6 or more subjects including either “Internship” (2 credits) or “Clinical Practicum in Nursing Science” (2 credits) other than “Research in Nursing Science” (4 credits). – The number of credits necessary for completion of master's degree course shall be 30 or more; however, in the case where students desire to meet the requirements for a midwife, 61 or more including 31 credits as requirements to take examination of national qualification. – ” Research in Nursing Science” shall be a compulsory subject that provides instruction for preparing research outcomes concerning the master's thesis or specific theme in each research group. The students aiming at the career path corresponding to the course to train midwives may receive the examination concerning the research outcomes relating to a specific theme instead of a master's thesis. The research outcomes relating to a particular theme need to be the ones to certify the acquisition of the ability to conduct advanced nursing practice. – In April of the first year, by determining the supervisor and sub supervisors in each student's area of expertise, the system to have the students receive master's thesis instruction shall be organized. In April of the second year, the research plan document shall be examined by designating one faculty member from other specialized research area as an examiner and necessary suggestion shall be provided. Regarding the research tasks targeting human beings, such research shall be started after obtaining consent for such research plan document from appropriate ethics committee. – In December of the second year, by holding the presentation for research outcomes concerning master's thesis or specific theme, going through preliminary examination of the thesis by the thesis examination committee, a pass or a failure shall be judged by the examination of the thesis and final examination which is performed in the following January. – One credit of “Introduction to Academic Integrity” from Graduate General Education Courses and more than one credit from Inter-disciplinary Foundation Courses shall be the compulsory subject for completing the master's degree course.

Admission Policy

Desired Student Profile	The desired students shall have fundamental knowledge relating to nursing science, motivation to explore nursing on global level based on firm ethical view and scientific evidence and aim at becoming educators that play a role as instructors for nursing, researchers, and midwives.

Student Selection Process	− The entrance examination shall be performed in August. In the case where there are insufficient number of applicants in the examination of August, the examination shall be implemented again in the following February. − The number of students to be accepted shall be 15 (including applicant for special selection of international students and working individuals). − The applicants for special selection of working individuals shall fall under any of the following items with work experience of approximately three or more years (the total of the years is available): ① the person who has graduated from university (four-year universities) or is expected to do so by March of the previous fiscal year of entrance, ② the person who has been awarded the degree, or is expected to be done so by March of the previous fiscal year of entrance, ③ the person who has taken 16-year course in school education abroad or is expected to do so by March of the previous fiscal year of entrance, ④ the person who has been judged as having equivalent academic abilities or more to the one who has graduated from university by the examination for application requirements implemented by Graduated School of Tsukuba University, who has reached 22 years old or the one who is expected to do so by March of the previous fiscal year of entrance. − By general examination, academic abilities and personality shall be evaluated by written examination of specialized subject (basic assignments relating to nursing science) and English and oral examination. The purpose of examination of specialized subjects is to evaluate the examinees by their basic knowledge for nursing in a broad range. The purpose of examination of English is to evaluate their ability to read in English in university students' level. By oral examination, the following shall be evaluated: whether the examinees have an ability to complete the course in two years, or whether they have aptitude, qualification, future possibility ad clear sense of purpose in the area of nursing science as a practitioner. − By special selection of working individuals, academic abilities and personality shall be evaluated by written examination of specialized subject (basic assignments relating to nursing science), essay and English and oral examination. The contents of specialized subjects shall be the same with the ones of general examination. The purpose of examination of English is to evaluate their ability to read in English in university students' level. The purpose of examination of essay shall be to evaluate an ability to logically state the idea relating to medical care. The purpose of oral examination and the examination hours shall be same with the ones of general examination. − For the examinees of international students, the following shall be considered: the questions shall be in English and preparation of such questions shall be devised etc.

Learning Support Framework

Academic Support	The following initiatives are implemented to support effective learning among graduate students. – Individual support for research supervision and thesis/dissertation writing (one-on-one meetings). – Presentation guidance, such as rehearsal sessions before conference presentations inside and outside the university. – English writing support.
Opportunities for Peer Interaction	The following systems and frameworks exist to enhance peer effects, which foster learning motivation and improve research quality. – Seminars in each specialized field. – Classes that integrate special lectures and exercises across different fields, enabling student discussions. – Collaborative activities at research proposal presentations and thesis/dissertation presentation sessions. – Student tutor system.
Opportunities for Student–Faculty Interaction	The following activities are conducted to enhance learning motivation and research quality through dialogue and supervision with faculty members. – Development of research supervision systems and regular individual meetings. – Study groups and research meetings organized by faculty. – Social gatherings within academic fields, held once or twice a year, such as group meals. – Research project in collaboration with faculty members.

Approaches to Assuring and Enhancing Educational Quality

The following activities are carried out to assess and enhance the quality of education:

– Faculty Development (FD) activities
– Analysis of student surveys and providing feedback
– Regular review of the curriculum

At meetings of the Curriculum Committee for the Nursing Science Degree Program, student learning outcomes are evaluated, and the validity of the curriculum and the appropriateness of instruction are reviewed.

In addition, an Academic Affairs Committee has been established to ensure continuous monitoring and improvement of all educational activities, thereby guaranteeing the quality of education and strengthening the structure necessary to achieve the objectives of the degree program.

Master's Program in Medical Sciences

■ Master of Science in Medical Sciences

Program Educational Objectives

Frontier medical science is an interdisciplinary area that covers broad areas such as basic medical sciences, clinical medicine, medical physics, translational research and regulatory science. Based on comprehensive fundamental education for medical science, this program shall provide education/research of practical and broad medicine-related areas that correspond to social needs and train the human resources who can play an active role in realization and maintenance of safe and healthy society as researchers/educators in universities or highly specialized professionals.

Graduate Profile	– The desired students shall be able to promote research in the area of medical science in educational research institutions such as universities and contribute to pioneering new area with fundamental knowledge of medical science in general and deep knowledge of area of expertise. – The human sources who engage in research development and medicine-related services in the corporations relating to medical care with fundamental knowledge of medical science and knowledge of expertised area that meets social needs. – The human resources who can contribute to safety of medical care and health promotion in medical institutions with fundamental knowledge of medical science and practical knowledge of expertised area.

Diploma Policy

The degree of Master of Science in Medical Sciences is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Ability to make use of basic knowledge: an ability to make use of fundamental knowledge of comprehensive medical science that covers basic medical sciences, clinical medicine and social physics.	If acquired knowledge related to medical science and an ability to make use of such knowledge.
	7. Practical ability: highly specialized knowledge related to medical science and command of such knowledge.	If having acquired highly specialized knowledge related to medical science and command of such knowledge.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Research ability: an ability to conduct advanced research relating to medical science.	① If capable of understanding cutting-edge research method and procedures of different areas and applying such method and procedures to research. ② If capable of independently conduct information collection, system establishment and negotiation necessary to complete research.
	9. Ability to solve issues: an ability to extract and solve the issues in medical science based on deep specialized knowledge.	If capable of finding important issues based on the latest specialized knowledge in medical science and devise creative research.
	10. Ethical view: High level of awareness and ethical view suitable for researchers/highly specialized professionals who engage in medical science.	① If having high level of awareness and motivation for medical science. ② If having ethical view and ethical knowledge suitable for researchers and highly specialized professionals in medicine.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted in stages based on the "Competence Self-Assessment Form" and the "Achievement Evaluation Form". The stages and methods of achievement evaluation are as follows: – First Stage: After the interim review (in the first year), the Chair of the Academic Affairs Committee and the Program Leader review and evaluate the validity of the submitted Competence Self-Assessment Form. – Final Stage: After the final review (in the second year), the Chair of the Academic Affairs Committee and the Program Leader review and evaluate the validity of the submitted Competence Self-Assessment Form. Subsequently, the final achievement evaluation is conducted by the Steering Committee.	
Evaluation Criteria for Degree Theses/ Dissertations	The master's degree (medical science) shall be awarded to the person whose master's thesis is approved as valid regarding the following evaluation items and judged as a pass in final examination after satisfying the requirements prescribed in School Regulations of Tsukuba University. The evaluation items shall be that: 1. the findings of research are qualitatively and quantitatively eligible for master's thesis. 2. the background of research is referred. 3. the purpose of research is clear. 4. the method of research follows its purpose. 5. the results of research are properly stated. 6. the consideration based on the results of research is appropriately provided. 7. the charts are accurately prepared. 8. the descriptions such as references and abbreviations etc. are accurate. 9. the students sufficiently understand the contents of master's thesis.	

Evaluation Criteria for Degree Theses/ Dissertations	10. the students can accurately respond to questions and answer session. 11. the students have understood the research in the relevant areas. 12. there is no research misconduct such as falsification/fabrication or plagiarism in research data. Research of master's thesis shall be supervised by multiple faculty members as “Dissertation in Medical Sciences” . For the students who pass interim examination which shall be conducted from the latter half of the first year to the first half of the second year, the final examination shall be performed. The final examination shall consist of research presentation examination performed by three members of academic affairs committee in public presentation and individual examination performed by the members of master's thesis examination committee (one chief examiner and two sub chief examiners). Through consideration of results of such examination by the thesis examination committee and steering committee of Master's Program in Medical Science and Graduate School Steering Committee, the degree conferment shall be decided.

Curriculum Policy

Medical science is an interdisciplinary area that covers broad areas such as basic medical sciences, clinical medicine, medical physics, translational research and regulatory science etc. In the curriculum, students can learn comprehensive knowledge from basic to application necessary to correspond to social needs in these broad areas of medical science and develop research and pioneer new areas, and the knowledge necessary to contribute to safety of safety of medical care and health promotion in medical institutions etc.

Curriculum Design Framework	Master's Program in Medical Sciences shall consist of General Foundation Subjects, Foundation Subjects for Major and Major Subjects. Students can learn the fundamental knowledge of medical science by Basic Subjects and Foundation Subjects for Major, and acquire competence in specialized areas according to their desired career path through the Major Subjects. Students shall learn more than 50 % of the General Foundation Subjects, Foundation Subjects for Major and Major Subjects in English. Consideration shall be given in order that international students can acquire the degree only in English. Additionally, students shall acquire comprehensive knowledge/ culture of other than in one's own area of expertise and ethical view and cultivate an ability to contribute to human resource development of the next generation.

Teaching and Learning Methods	The standard study schedule is as follows: 1. In the first year, students shall take a large number of subjects to meet completion requirements other than Dissertation in Medical Sciences (master's thesis research). 2. In the second year, students shall take the subjects to deepen knowledge of medical science centering on Dissertation in Medical Sciences (master's thesis research). 3. In the presentation of research plan of the first part of the first year, each student shall present his/her future research plan of master's thesis. 4. In the latter half of the first year, the members of master's thesis examination committee excluding research supervisor shall be selected (one chief examiner and two sub chief examiners) and interim individual examination shall be performed according to each student's progress status of research. 5. In the beginning of the latter term in the second year, presentation of research outcomes shall be held, where the research outcomes shall be presented so far. 6. At the end of the second year, the final examination shall be performed. The final examination shall consist of research presentation examination performed by the members of academic affairs committee in public presentation and individual examination performed by the members of master's thesis examination committee for academic abilities.

Admission Policy

Desired Student Profile	For this course, enrollment of the persons shall be required who have basic knowledge relating to medical science and motivation to actively perform research with an ability to logically analyze and creative and flexible idea. After enrollment, the students shall be required not only to learn fundamental knowledge of medical science and highly specialized knowledge, but also to have abilities to explore and independently solve various problems in their area of expertises they face from comprehensive perspective.
Student Selection Process	– By conducting and comprehensively evaluating both written examination and oral examination, the entrants shall be selected. – By written examination, English ability and basic knowledge related medical science shall be evaluated. – By oral examination, an ability for logical analysis, an ability for creative and flexible idea and motivation for learning shall be evaluated. – Both written and oral examination shall be performed either in Japanese or in English according to the applicants' desire.

Learning Support Framework

Academic Support	A Frontier Medical Sciences Degree Program Office has been established to provide a wide range of academic support, including assistance with the mid-term review, the final review, various presentation sessions, competence self-assessments, and degree examinations, as well as responding to inquiries as needed.In addition, courses directly related to research activities—such as Basic Medical Science Seminar, Scientific Ethics, English Discussion & Presentation on Medical Sciences, and Special Research Training in Medical Sciences—are offered and granted academic credit.
Opportunities for Peer Interaction	– In the course Dissertation in Medical Sciences (a subject for master's thesis research), three types of presentations are organized: a Research Proposal Presentation (three months after admission), a Research Progress Presentation (at the beginning of the fall semester of the second year), and a Public Presentation (at the end of the second year). These sessions provide opportunities for students to interact with peers from different disciplines. – For alumni, a system has been established to share information and facilitate exchanges of ideas using the program website and social networking services such as Facebook groups. In addition, Career Path Seminars are organized to create opportunities for interaction between current students and alumni. The Career Path Seminar is credit-bearing, and at the end of each academic year, the responsible faculty members hold a meeting to discuss improvements for the following year.
Opportunities for Student–Faculty Interaction	– For student consultations, the program has established Student Affairs Coordinators and Career Support Coordinators within the organization. The Degree Program Office serves as the primary contact point, providing routine support to students, including international students. – In the course Dissertation in Medical Sciences (a subject for master's thesis research), three types of presentations are organized: a Research Proposal Presentation (three months after admission), a Research Progress Presentation (at the beginning of the fall semester of the second year), and a Public Presentation (at the end of the second year). These sessions provide opportunities for students to receive advice from faculty members in different fields.

Approaches to Assuring and Enhancing Educational Quality

– The Steering Committee evaluates students' learning outcomes and examines the appropriateness of the curriculum and the adequacy of academic guidance.
– An Academic Affairs Committee is established to ensure the quality of education and to strengthen the program's overall structure by continuously monitoring and improving all educational activities.

Master's Program in Public Health

■ Master of Public Health

Program Educational Objectives

This course shall aim at acquiring knowledge and skills to enhance specialization of public health centering on the five core areas: epidemiology, biostatistics, health policy and management, environmental health and social and behavioral sciences. In addition, students shall be actively encouraged to take classes of relevant areas and aim at improvement of interdiscipline. In order to foster human resources that play an active role globally, all the General Foundation Subjects /compulsory subjects shall be established in English by creating environment where students can learn together with international students.

Graduate Profile	The following persons shall be developed: policy-makers of health and medical treatment, administrative practitioners of health/medicine, epidemiology specialists, biostatistics specialists, practitioners of local medical care, specialists of medical safety and management, specialists of health education and health promotion, and other practitioners that acquire specialized techniques of public health.

Diploma Policy

The degree of Master of Public Health is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Core area 1 of public health sciences: epidemiology: an ability for application of epidemiology skills to apply basic knowledge relating to epidemiology as the core area of public health and an ability to apply such knowledge in public health activities.	Students shall learn if capable of solving health problems of human population or the method to verify research design, research ethics, data collection and interpretation and acquire an ability to practically apply it.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Core area 2 of public health sciences: an ability for application of biostatistics skills to apply basic knowledge relating to biostatistics as the core area of public health and an ability to apply such knowledge in public health activities.	Students shall learn the basic of biostatistics and acquire an ability relating to practical application of biostatistics from planning, selecting analysis method to putting into practice/interpretation of data.
	8. Core area 3 of public health sciences: an ability for application of health policy and management skills to apply basic knowledge relating to health policy and management as the core area of public health and an ability to apply such knowledge in public health activities.	Students shall analyze the issues relating to health/medical care such as disease prevention/medical care/nursing care etc. by making use of policy sciences and economics and procedures of health policy and management and acquire an ability to connect such learning with policy proposal.
	9. Core area 4 of public health sciences: an ability for application of social and behavioral sciences skills to apply basic knowledge relating to social and behavioral sciences as the core area of public health and an ability to apply such knowledge in public health activities.	Students shall learn the procedures of social science and behavioral science and acquire the skills to apply such learning to research relating to salutogenesis and intervention activities in society.
	10. Core area 5 of public health sciences: an ability for application of environmental health sciences skills to apply basic knowledge relating to environmental health sciences as the core area of public health and an ability to apply such knowledge in public health activities.	Students shall learn the impact on human health by environment and acquire knowledge/skills to plan/carry out environmental health measures in an international framework.

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is based on the “Achievement Evaluation Table” and objectively confirms and evaluates the acquisition status of competences based on the deplpma policy for each stage below. The stages and methods of achievement evaluation are shown below. 1st stage (end of fall semester of 1st year): The academic affairs committee and supervisor will conduct the 1st stage achievement review based on the rubric and share it with the chief examiner and co-examiners who are conducting the mid-term evaluation. Final stage (end of fall semester of 2nd year): The academic affairs committee and supervisor will conduct the second stage achievement review based on the rubric and will share this with the chief examiner and co-examiners who are reviewing the thesis. Afterwards, all members of the steering committee will conduct a final achievement review. The knowledge and abilities (competence) set out in the diploma policy will be presented as specific outcome goals at the time of admission, along with evaluation criteria and corresponding main studies. Self-evaluation is conducted when students advance to the next grade, and their achievement is promoted. Upon completion, students will be evaluated comprehensively, taking into account the percentage of achievement of each competence based on their subject completion status, performance at presentations, academic presentations, paper submissions, TA/TF experience, and extracurricular public health activities.
Evaluation Criteria for Degree Theses/ Dissertations	The master's degree (public health sciences) shall be awarded to the person whose master's thesis is approved as valid regarding the following evaluation items and judged as a pass in final examination after satisfying the requirements prescribed in school regulations of University of Tsukuba. The evaluation item shall include meaning of research tasks, grasping and understanding of previous research, validity of research method, conclusion and validity of logics to lead such conclusion, appropriateness of features/structure, appropriate quotation of literature/materials. Research of master's thesis shall be supervised by multiple faculty members as “Dissertation in Public Health Sciences”. For the students who pass midterm individual evaluation which shall be conducted from the latter half of the first year to the first half of the second year, the final examination shall be performed. Through consideration of results of such examination by the thesis examination committee and steering committee of Master's Program in Public Health Sciences and Graduate School Steering Committee, the degree conferment shall be decided.

Curriculum Policy

The curriculum of Master's Program in Public Health shall consist of basic subjects and specialized subjects, which is organized in order that students can learn specialized knowledge of public health sciences while comprehensively leaning by selecting from established subjects. In line with the curriculum of international standard required for acquisition of Master of Public Health（MPH）degree, the compulsory subjects shall be designated focusing on core learning areas. By establishing all the compulsory subjects and most of the selective compulsory subjects in English, the environment shall be organized in order that not only international students but also Japanese can acquire the degree by the curriculum in English. Additionally, by making use of the systems of TA（Teaching Assistant）and TF（Teaching Fellow）of University of Tsukuba, students can acquire educational ability to become educators in educational research institutions such as universities etc. in the future.

Curriculum Design Framework	The fundamental knowledge regarding the core study of public health sciences including epidemiology, biostatistics, health policy and management, environmental health and social and behavioral sciences shall be mainly evaluated by written examination. An ability relating to collection and analysis of information in public health sciences area shall be evaluated regarding students' ability to carry out it mainly through epidemiology and biostatistics analysis practicum, written examination and students term papers. The degree of achievement of the subjects taken in one's own area of expertise and relevant areas shall be judged in accordance with objectives to be achieved and evaluation standard and the feedback shall be provided for students. For master's thesis, in addition to evaluation by midterm individual evaluation by the members of the thesis examination committee, students' ability for presentation/questions and answers in research progress presentation by the members of academic affairs committee, by providing feedback for students as advice to improve their research, it shall be guaranteed that the level of the thesis becomes appropriate for the degree in the final examination.
Teaching and Learning Methods	The standard study schedule is as follows: 1. In the first year, students shall take subjects to meet completion requirements other than Dissertation in Public Health Special Exercise (master's thesis research). 2. In the second year, students shall take the Major Subjects focusing on specialized subjects. 3. In the latter half of the first year, the members of master's thesis examination committee shall be selected excluding research supervisor (one chief examiner and two sub chief examiners) and midterm individual evaluation shall be performed according to each student's progress status of research. 4. In the beginning of the latter term in the second year, presentation of research outcomes shall be held, where the research outcomes shall be presented so far. 5. At the end of the second year, the final examination shall be performed. The final examination shall consist of research presentation examination performed by the members of academic affairs committee at an open conference and individual examination performed by the members of master's thesis examination committee.

Admission Policy

Desired Student Profile	For this program, the persons who have motivation to actively solve problems of public health with an ability to logically analyze having creative and flexible idea shall be enrolled. The students shall be required not only to learn according to the curriculum, but also to have attitude to explore and independently solve various problems in their area of expertise from comprehensive perspective through research for master's thesis and internship.
Student Selection Process	By written examination and oral examination, the entrants shall be selected. The questions in written examinations shall be prepared to enable both English ability and basic knowledge relating to public health sciences of the students to be evaluated. The oral examination shall be performed in Japanese or in English.

Learning Support Framework

Academic Support	During the midterm evaluation of master's thesis research, faculty members other than the supervisor provide advice on research plans. A student counseling committee is appointed within the degree program, and a student support team is formed to handle student mental health issues.
Opportunities for Peer Interaction	Opportunities for students to interact with each other are provided during freshman orientation, second-year student guidance, research progress presentations, and presentation on master's thesis. In compulsory subjects, all students participate in seminars, group projects, and group work. Opportunities are provided for students to interact with alumni.
Opportunities for Student–Faculty Interaction	Faculty development (FD) is designed to be student-participatory. Opportunities for dialogue are provided at research progress presentations and presentation on master's thesis where students and faculty members come together.

Approaches to Assuring and Enhancing Educational Quality

The steering committee will evaluate students' learning outcomes and verify the validity of the curriculum and appropriateness of instruction.　The results of student class evaluation surveys are reviewed to make improvements. Faculty development (FD) is designed to improve quality of education.

Master's Program in Physical Education, Health and Sport Sciences

■ Master of Physical Education, Health and Sport Sciences

Program Educational Objectives

By setting physical education, sport, health and coaching as keywords, this program shall train highly specialized professionals as the top runners in global era and the human resources who acquire the basis as the researchers that intend to deepen various kinds of sciences by work on various problems relating to human body and exercise, its culture and environment, and additionally mental and physical adjustment in an interdisciplinary way and cultivating an ability and rich knowledge as the basis of such ability necessary for carrying out research in an independent/self-governing way which is developed on the basis of educational research institutions that have one's own areas/fields of expertise of the scale which the world has never seen.

Graduate Profile	The desired students shall become the specialized professionals who systematically understand physical education, health and sport sciences which is developed based on the essentials relating to physical education/sport/health, such as sport culture and global society, health promotion and vitality improvement, mechanism of physical exercises and competition ability improvement etc., have practical ability of high level to solve various problems that may be caused on the actual sites with broad perspective and specialized knowledge/skills, and additionally the human resources who are expected to play a leading role such as managers/coaches who lead countries in various kinds of sport competition, and the ones who lead coaching education of countries in educational institutions such as universities etc.

Diploma Policy

The degree of Master of Physical Education, Health and Sport Sciences is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: basic knowledge and skills to set research tasks in physical education/sport/health/coaching areas and research plan.	①If having acquired basic knowledge in order to set research tasks. ②If having acquired basic skills in order to carry out research plan.
	7. Specialized knowledge: highly specialized knowledge in physical education/sport/health/coaching areas.	①If capable of practically utilize specialized knowledge relating to physical education/sport/health/coaching areas in educational sites and coaching sites.
	8. Practical ability: practical command of specialized knowledge in physical education/sport/health/coaching areas.	①If having acquired basic and specialized knowledge relating to physical education/sport/health/coaching areas.

	Competences	Evaluation perspectives
Knowledge and Skills	9. Ethical view: ethical knowledge and ethical view appropriate for the human resources or highly specialized professionals who have basic research ability in physical education/sport/health/coaching areas.	①If having ethical knowledge appropriate for the human resources who have basic research ability. ②If having ethical view appropriate for highly specialized professionals.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes at each stage objectively confirms and assesses acquisition status of competences based on the degree awarding policy according to the achievement evaluations outlined in the Achievement Evaluation Table. The stages and methods of achievement evaluation are outlined below. First Stage (January to February of the First Year): The Curriculum Committee conducts the first achievement evaluation based on the Competence Evaluation Table and the Achievement Evaluation Table. Second Stage (October to January of the Second Year): – The Curriculum Committee conducts the second achievement evaluation based on the Competence Evaluation Table and the Achievement Evaluation Table. – The Master's Thesis Examination Committee evaluates the results of the master's thesis examination and assesses the knowledge and skills necessary for obtaining the degree based on the Competence Evaluation Table and the Achievement Evaluation Table.	
Evaluation Criteria for Degree Theses/ Dissertations	After satisfying the requirements prescribed in School Regulations of Tsukuba University, the doctoral thesis shall be approved as valid regarding the following evaluation items and judged as a pass in final examination. (Evaluation items) The examination committee for master's thesis established in order to implement examination of master's thesis etc. shall be composed of one chief examiner and two or more sub examiners. 1. The chief examiner shall be the supervisor of the said master's degree program. 2. The chief examiner and sub chief examiner(s) shall have the master's degree or more; provided that the sub chief examiner who do not have the master's degree or more may be allowed as an exception. 3. In the sub chief examiners, two Graduate School members shall be included. If necessary, it is possible to add the person fit as a sub examiner from outside Graduate School approved by educational conference of the said Degree Program. 4. The number of the person fit as a sub examiner from outside Graduate School shall not exceed the one of the chief examiner and sub examiner selected from the Graduate School.	

Evaluation Criteria for Degree Theses/ Dissertations	(Evaluation items) 1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in Physical education area is clearly described. 2. Right amount of original research outcomes that contribute to development of Physical education area is contained as master's thesis. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as master's thesis of the said area.

Curriculum Policy

In this program, by setting physical education, sport, health and coaching as keywords, students shall work on various problems relating to human body and exercise, its culture and environment, and additionally mental and physical adjustment in an interdisciplinary way. For this purpose, there are as many as 39 complex research areas to understand specialized knowledge and methodology in cultural sciences, social science and natura science as basic sciences or in many academic areas (philosophy, ethics, historical science, anthropology, pedagogy, sociology, jurisprudence, economics, busines administration, psychology, physics, engineering science, medical science, chemistry, biology and statistics).
Additionally, while each research area provides subject registration model in six systems while collaborating with each other, in order to develop competent knowledge/specialized knowledge/ethical view/research ability/practical ability/ability to lead, all the members centering on full-time teachers shall participate in education/research supervision. Furthermore, efforts shall be made to connect mainly with Doctoral Program in Physical Education, Health and Sport Sciences (D), Doctoral Program in Sport Medicine (D), Doctoral Program in Coaching Science (D) etc. regarding research instruction contents.

Curriculum Design Framework	– In order to secure diploma policy of this Master's Degree Program, the subjects shall be divided into three categories of Major Subjects, Foundation Subjects for Major and General Foundation Subjects. The groups of subjects corresponding to each subject category shall be as follows: “boundary subjects”, “area-specific subjects, research basic subjects”, “relevant area-specific subjects, Graduate General Education Courses, Inter-disciplinary Foundation Courses”. – In order to acquire specialized knowledge and an ability to see from a higher perspective/to lead, and also to correspond to a broad scope of work of this Degree Program (demand for human resources), the following six systems shall be established: 1) Sport Culture, Management and Politics, 2) Health and Sport Education, 3) Health and Fitness, 4) Athletic Conditioning, 5) Sport Coaching and 6) National Leading Coach Development.

Curriculum Design Framework	– ” Thesis Supervision” shall be performed in the following 39 research areas: Philosophy of PE and Sport, History of PE and Sport Anthropology, Sport Sociology, Theory of Budo, Management of PE and Sport, Sport Policy, Sport Industry, Sport Pedagogy, Theory of Adapted PE and Sport, Sport Psychology, Health Education, Environmental Health, Sport Physiology, Sport Biochemistry, Sport Nutrition, Physical Fitness, Health and Fitness for Active Living, Measurement and Evaluation of Sport, Sport Medicine for Wellness, Sport Medicine for Motor System, Sport Biomechanics, Applied Anatomy, General theory of Coaching and Training, Theory of movement, Coaching in Gymnastics, Coaching in Sport Gymnastics, Coaching in Track & Field, Coaching in Swimming, Coaching in Basketball, Coaching in volleyball, Coaching in Handball, Coaching in Soccer, Coaching in Rugby, Coaching in Racket and Bat Sports, Coaching in Judo, Coaching in Kendo, Coaching in Kyudo, Outdoor Pursuits and Education, and Coaching in Dance Studies. – By boundary subjects, the specialized knowledge and a basic ability as a researcher shall be acquired. – By area-specific subjects, specialized knowledge and an ability to solve problems/an ability to lead shall be acquired. – By research methodology of research basic subject, basic knowledge and a broad perspective, ethical view, competent knowledge and basic research method shall be acquired. Furthermore, in addition to Graduate General Education Courses (especially, the group of subjects such as training of international character etc.), The practicum focusing on discussion of Project-based Learning type, an ability to understand and communication skills as highly specialized professionals and researchers and international character shall be acquired. – For the purpose of smooth connection in education/research supervision contents with Doctoral Degree Program, each area-specific subject shall be arranged while taking curriculum into consideration: regarding the area 1) to 3), mainly Doctoral Program in Physical Education, Health and Sport Sciences (D), the area 3) to 4), mainly Doctoral Program in Sport Medicine (D), the area 5) to 6), Doctoral Program in Coaching Science (D). Additionally, the students who desire to advance to the Doctoral Degree Course, in order to acquire a broad relevant knowledge while they learn in the Master's Degree Course, it shall be recommended that they take Graduate General Education Courses, Inter-disciplinary Foundation Courses. – As formation of career path, through the following recommendation, this course shall allow students to acquire practical ability to promptly and accurately correspond to on-site needs: completion of the subjects to be able to acquire specialized certificate and practical training subjects established by PE center for the persons who desire to become PE teachers, completion of internship and Graduate General Education Courses (subject group such as career management etc.) for the ones who desire to be employed in companies/government agencies and to become coaches, and completion of subjects for international character specialized in English necessary for explanation and coaching of Japanese culture for the ones who desire to become the coaches of international level.

Teaching and Learning Methods	– Students shall acquire 30 or more credits in total from the designated scope of each group of subjects in “Major Subjects” (6 to 8 credits), “Foundation Subjects for Major” (13 to 23 credits) and “General Foundation Subjects” (0 to 6 credit). – By selecting one area from six systems, students shall acquire knowledge and skills required for highly specialized professional in specific scope. – Students shall create master's thesis by belonging to any of 39 research areas.

Admission Policy

Desired Student Profile	The desired students shall establish world peace and friendly relations, contribute to rich lives of people in local communities, love sport, have an ability to grasp various problems relating to sport culture and social environment, physical education/physical activities/sport and, mechanism between human bodies and exercise, and have qualification to globally play an active role as leaders. Moreover, the human resources who are expected to play a leading role in general organizations in the future and lead coaching education of Japan in educational institutions such as universities etc. shall be required.
Student Selection Process	– Recommendation entrance examination (general selection/special selection of working individuals) and general examination (general examination/special selection of working individuals) shall be implemented. – In recommendation entrance examination, document screening and oral examination shall be implemented both for general selection/special selection of working individuals. – In general selection of general examination, examination of foreign language, oral examination and examination of specialized subjects shall be implemented, and in its special selection of working individuals, oral examination and examination of specialized subjects shall be implemented.

Learning Support Framework

Academic Support	The 2-year study process(schedule) until the completion of the master's program and degree acquisition are presented during the orientation for new students held at the time of enrollment. Furthermore, a career development forum is also held in April, providing opportunities for interaction with working professionals who are active in major career paths after completing this degree program. On the research front, the “Conference Presentation Support Fund” system is offered to assist students belonging in this degree program by supporting their travel expenses and other costs for presenting at conferences and speaking at similar events. Moreover, participation in various training sessions such as research ethics workshops and network seminars is encouraged according to the needs of each student's research area.

Opportunities for Peer Interaction	This program hold open interim presentation sessions for master's theses, which enhances students' presentation and Q&A skills while providing opportunities for academic discussions on physical education, sports, and the health sciences across interdisciplinary and cross-sectional research fields. At the end of the academic year, a “Master's Thesis Competition” is held, where presentations, evaluations, and awards are given for particularly high-quality master's thesis research. This enhances students' attitudes toward and motivation for research and provides a lively forum for them to actively discuss and promote their research among themselves.
Opportunities for Student–Faculty Interaction	The “Student Area Representatives Meeting (Discussion Meeting)” is held to gather opinions from students belonging to this degree program and provide an opportunity for dialogue with faculty members to improve the learning environment. The gatherings held by the Graduate School provide further opportunities for interactions with faculty members beyond specialized fields.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee evaluates students' learning outcomes and verifies the appropriateness of the curriculum and suitability of instruction. Additionally, the Education Council continuously reviews and improves overall educational activities based on the results of student course evaluation surveys, thereby ensuring the quality of education and strengthening the system designed to achieve the objectives of degree programs. Furthermore, faculty development programs will be conducted to enhance teaching skills and abilities, contributing to the overall improvement of educational quality.

Master's Program in Sport and Olympic Studies

■ Master of Arts in Sport and Olympic Studies

Program Educational Objectives

This degree program shall aim at training the human resources who can seek for management ability of high level and integrity of sport required in international sport areas for the future. This program shall also train the human resources for sport required for the future in collaboration with International Olympic Committee or International Federations.

Graduate Profile	– The human resources who can exhibit leadership in the world by comprehensively learning cutting-edge knowledge necessary in the sport world of the 21th century, making use of management ability of high level and creating values of sport in society. – The human resources who can acquire management ability to learn Olympic/Paralympic education and the most advanced sport sciences and apply to each site, in collaboration with IOC, IPC, JOC, JPC, JSC, JADA.

Diploma Policy

The degree of Master of Arts in Sport and Olympic Studies is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Understanding of Olympic/ Paralympic Studies: an ability to understand values of Olympic and Paralympic and their social role.	①Ability to understand history of Olympic and Paralympic and their values. ②Ability to develop their social role.
	7. Specialized understanding relating to physical education/ sport/health: an ability to provide overview the problems of Olympic Studies in the studies of physical education/sport/health and the method to make use of them.	Ability to see from a higher perspective related to positioning of Sport and Olympic Studies in various sport sciences.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability to understand Japanese culture: an ability to understand Budo/Japanese culture and communication skills based on English.	①Ability to understand Japanese culture including Budo and manners and develop them in various places. ②Ability to convey Budo and Japanese culture through English.
	9. Ability to develop Sport and Olympic Studies: an ability to see from a higher perspective on a global scale and management ability on a global scale with consideration to people living in local communities.	Ability to manage Olympic education and sport events in various countries.
Guidelines for Assessing Learning Outcomes	The evaluation of student learning outcomes is conducted through an Achievement Assessment based on a “Achievement Assessment Form” . This process objectively confirms and evaluates the acquisition status of the competences stipulated in the Diploma Policy at the following stages. The stages and methods for this Achievement Assessment are outlined below: Stage 1 (First Year, Spring Semester) The submitted Achievement Assessment Forms are evaluated by the Curriculum Committee, followed by a Achievement Assessment conducted by all faculty members at the Education Council. Stage 2 (Second Year, Fall Semester) The submitted Achievement Assessment Forms are evaluated by the Curriculum Committee, followed by an Achievement Assessment conducted by all faculty members at the Education Council. Stage 3 (End of Second Year, Spring Semester) 1) Master's Thesis Research Review: The third-stage progress review is conducted by all research supervisors based on a rubric at the Master's Thesis Research Review Committee. 2) Final Degree Review: Subsequently, the Thesis Review Committee, consisting of a Chief Examiner and at least two Sub-Examiners, conducts a review based on a rubric, followed by a final progress review conducted by all faculty members at the Education Council. The specific evaluation content for the subjects pertaining to each stage and the details of the review committees are as follows. ①Knowledge Application and Problem Identification: Evaluate based on the specificity of the written and presentation content as to whether the student is endeavoring to apply knowledge for the benefit of society and if they can identify problems even outside their specialized field through research supervision courses, internship courses, master's thesis writing, and academic conference presentations.	

Guidelines for Assessing Learning Outcomes	②Planned Response and Problem Solving: Evaluate based on the student's planned response to challenges, their understanding of problems from multiple perspectives, and the subsequent solution to those problems, through research supervision courses, seminar courses, internship courses, and academic conference presentations. ③Communication and Explanation Skills: Evaluate based on the smoothness of communication regarding the implementation of research or other activities, and the clarity of explanation to people from different fields, through research supervision courses, seminar courses, internship courses, and academic conference presentations. ④Teamwork and Contribution: Evaluate based on the student's experience of actively working on challenges as a team and their contribution to the advancement of projects other than their own research, through research supervision courses, seminar courses, internship courses, questions at academic conferences, and questions during seminars. ⑤International Awareness and Language Proficiency: Evaluate based on the student's awareness of contributing to international activities and the language proficiency necessary for international information gathering and action, through research supervision courses, seminar courses, internship courses, and overseas activity experience. ⑥Understanding of Olympic and Paralympic Values: Evaluate based on the student's understanding of the history of the Olympic and Paralympic Games and their values, and the development of ideas regarding their social role, through Olympic Movement Studies, Olympic and Paralympic History, and master's thesis writing. ⑦Positioning of Olympic and Sport Studies: Evaluate based on the student's ability to survey and position Olympic and Sport Studies within the broader sport sciences, through Anti-Doping, Sport Technology, Biomechanics, and Exercise Physiology, and master's thesis writing. ⑧Understanding and Transmission of Japanese Culture: Evaluate based on the student's understanding of Japanese culture and its development, and the transmission of Budo and Japanese culture through the medium of English, through Budo, Japanese Culture, and Cross-Cultural Communication.

Evaluation Criteria for Degree Theses/ Dissertations	<Master's thesis> 1. That the contents of research contribute to academic development of the area of Sport and Olympic Studies. 2. That the meaning and purpose of research is clear and it outcomes are induced by making use of appropriate research methods. 3. The previous research is sufficiently considered. 4. That the expression of thesis writting and way of writing are appropriate throughout thesis. 5. That there is no ethical problem in the process of research. 【Examination method and examination system】 The examination method shall be as follows: the oral presentation shall be performed for the thesis as the final examination and such presentation shall be evaluated by the scores according to the examination standard by three members in charge of this Degree Program. The score of more than 60 points shall be judged as a pass.

Curriculum Policy

Education/research supervision shall be provided in order to cultivate broad basic culture in Olympic/ Paralympic movement sport and sport management, a broad view over Budo and sport sciences, and competences that support success in various scenes of society, along with research ability/specialized knowledge/ethical view in the three areas of PE and Sport, Coaching Science and Health Sciences.

Curriculum Design Framework	Students shall belong to any of four areas (Olympic/Paralympic Education, Sport Management, Sport Science and Medicine, Teaching/Coaching/Japanese Culture) and take the practicum of such area. Based on the students' major, in order to contribute to cultivating basic culture and a broad perspective, and competences, it is recommended that one credit be taken from Graduate General Education Courses, Inter-disciplinary Foundation Courses and Degree Programs' Common Courses. The specialized lectures as specialized courses in area of expertise and practical training and special research as selective compulsory courses shall be registered and basic knowledge and skills of the area of expertise shall be learned. 11 credits shall be arranged as compulsory subjects as specialized basic subjects to understand and learn Olympism and value of sport and Japanese culture. In order to achieve an ability to understand Budo/Japanese culture and communication skills based on English and an ability to see from a higher perspective on a global scale and management ability on a global scale with consideration to people living in local communities, common specialized subjects shall be arranged and internship for around four weeks shall be provided. Additionally, through the lectures and practicum in which external researchers and practitioners, management ability and communication skills shall be acquired as highly specialized professionals. It is also recommended that students actively participate in and give presentation in domestic sport organizations and relevant academic conferences and workshops.

Teaching and Learning Methods	At the same time as enrollment, with consideration to students' desire and future career path, students shall be classified into any of four areas (Olympic/Paralympic Education, Sport Management, Sport Science and Medicine, Teaching/Coaching/Japanese Culture). Simultaneously, their supervisors shall be also decided. By consulting with the supervisor and sub supervisor(s), 30 or more credits in total shall be acquired from 11 credits of Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, Graduate General Education Courses and Foundation Subjects for Major (compulsory), 4 credits of Major Subjects (Research Major [Seminar]), 8 credits of Major Subjects (common) and 6 to 9 credits of Major Subjects (Research Major) and the master's thesis shall be created. The place to serve students' internship shall be determined based on the students' desire, after consulting with their supervisor, by referring to internship committee.

Admission Policy

Desired Student Profile	The desired students shall have the following enthusiasm and qualification: 1. The persons who have basic knowledge relating to Olympic/Paralympic and motivation/sense of mission to promote integrity of sport. 2. The persons who have basic knowledge relating to studies related to sport/physical education/health and operational experience relating to sport (experience such as sport practice, instruction such as coaching, and event management etc.). 3. The persons who have interest in Olympic/Paralympic education and sport management. 4. The persons who have communication skills in English and understand importance and fairness to cooperatively achieve things.
Student Selection Process	General selection only. In April of the previous year, application guidelines shall be disclosed on the website. The application period shall be from the beginning to the middle of December of the previous year. Documents regarding the reasons for the applicants' applications and research plan shall be accepted. In late January, the entrance examination (oral examination) shall be implemented. The pass or failure shall be determined by the total score (on a 400-point scale of the total points) of oral examination and document evaluation. In the document evaluation, the reasons for the applicants' applications, research plan and previous experience shall be evaluated (on a 100-point scale of the average points of examiners). In the oral examination, the reasons for the applicants' applications, research plan, basic knowledge relating to Sport and Olympic Studies and communication skills in English shall be evaluated (on a 300-point scale of the total points by examiners).

Learning Support Framework

Academic Support	①Supervisors provide support for writing and guidance for presentations. ②Opportunities for presentations and Q&A sessions are provided through the master's thesis interim reporting meeting. ③The course offers students opportunities to receive presentation guidance and advice through engaging with visiting external experts.
Opportunities for Peer Interaction	①Networking events are held after the master's thesis interim reporting meeting and the final master's thesis examination to provide opportunities for interaction. ②All students across both academic years are provided with a shared student common room for conducting their research activities, which facilitates spontaneous interaction among students.
Opportunities for Student–Faculty Interaction	Through seminars featuring external speakers and SHED Seminars (Sport/Shared Educational Development Seminar), we foster interaction with non-supervising faculty by holding open discussions and post-event social gatherings.

Approaches to Assuring and Enhancing Educational Quality

① In the FD Forum organized by the Faculty Development Committee, evaluations of the progress assessment results are conducted. This is to verify the validity of the curriculum and the appropriateness of instruction, identify challenges, and exchange information on pedagogical methods.

② Faculty members are encouraged to attend FD Seminars organized by the Degree Programs in Comprehensive Human Sciences (or equivalent academic institution). By participating, they acquire information on teaching methods and reflect improvements in their own teaching methods in each course.

Master's Program in Sport and Wellness Promotion

■ Master of Sport and Wellness Promotion

Program Educational Objectives

This Degree Program shall aim at training the practical highly specialized professionals who have an ability to understand the idea and method to generate synergistic effects to promote sport and wellness and plan, design and analyze basic policy and strategy for the above-mentioned based on the practical experience where the students have engaged in promotion of sport wellness, an ability to assess necessary resources and systemize them and an ability to appropriate manage advanced system and an ability to develop reasonable programs etc.

Graduate Profile	The desire students shall exhibit leadership in the group of experts including in sport associations, administrative agencies and corporations etc. and contribute to further development of sport and wellness.

Diploma Policy

The degree of Master of Sport and Wellness Promotion is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Research ability: Basic knowledge and ability to set research tasks and carry out a research plan in the areas of sports wellness.	① If capable of researching societal challenges in the field of sports and wellness with a spirit of scientific inquiry. ②If capable of drafting and creating appropriate research plan relating to the area of sport and wellness. ③If capable of completing and presenting appropriate master's thesis relating to the area of sport and wellness.
	7. Specialized knowledge: Advanced specialized knowledge and command of the areas of sports wellness.	If capable of acquiring and utilizing highly specialized knowledge of the area of sport and wellness.

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ethical view: the persons with basic research ability in the area of sport and wellness or with ethical view and ethical knowledge appropriate for highly specialized professionals.	If having acquired basic research ability, ethical view and ethical knowledge of the area of sport and wellness.
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted objectively based on the “Achievement Evaluation Sheet (Rubric)”, which assesses the extent to which students have acquired the competences specified in the diploma policy at each stage. The stages and methods of achievement evaluation are as follows. First Stage (End of the Fall Semester in the First Year): Following the first-year mid-term presentation, the academic advisor conducts the first-stage achievement assessment using the rubric. Final Stage (End of the Fall Semester in the Second Year): After the second-year mid-term presentation, the academic supervisor conducts the second-stage achievement assessment using the rubric.	
Evaluation Criteria for Degree Theses/ Dissertations	This degree program designates both the master's thesis and the specific task research report as academic dissertations. Upon completion of the program, students are awarded the degree of Master of Sport and Wellness Promotion. ＜ Master's thesis ＞ The research or experimental findings must undergo rigorous statistical and scientific analysis within the context of sports or health-related themes. Alternatively, the study should demonstrate logical coherence and substantive validity through a comprehensive literature review while also exhibiting theoretical originality. 1. Formulation of Research Objectives 2. Review of Previous Studies, Identification of Research Issues, and Methodological Framework 3. Presentation of Results and Discussion, or Analysis of Research Content 4. Conclusion and Future Research Directions ＜ Specific task research report ＞ Engagement in problem-solving and goal attainment concerning specific issues related to sports or health through the application of practical methodologies, accompanied by a well-founded analysis of the process and outcomes, demonstrating empirical creativity. 1. Formulation of the Research Issues and Objectives 2. Project Planning for Resolution 3. Implementation and Evaluation of the Project 4. Analysis and Assessment of Project Outcomes	

Evaluation Criteria for Degree Theses/ Dissertations	(Evaluation Criteria for the Thesis) 1. Ability to research and manage to support enhancement of advanced ability to solve problems 2. Higher perspective and flexible thinking ability 3. Ability to solve problems by organizing a team with the human resources of various areas 4. Ability to promote advanced projects and problem-solving ability 5. Ability to solve problem on a global level by making full use of cutting-edge research skills The master's thesis shall be judged as having a great social or academic significance in the area of Sport Health Promotion and Sport Wellness Management and a pass or a failure shall be judged by the final examination. Review board members: The examination committee for master's thesis established in order to implement examination of master's thesis etc. shall be composed of one chief examiner and two or more sub examiners. Review method and review items, etc: Comprehensive evaluation shall be performed by master's thesis and final examination (presentation and oral examination).

Curriculum Policy

This Degree Program shall consist of two areas of Sport Health Promotion and Sport Wellness Management. The curriculum of this Degree Program shall be organized in order to acquire basic and practical knowledge and skills in the area of sport and health, an ability to understand the idea and method to generate synergistic effects to promote sport and health and plan, design and analyze basic policy and strategy for the above-mentioned, an ability to assess necessary resources and systemize them and an ability to appropriate manage advanced system and an ability to develop reasonable programs etc.

Curriculum Design Framework	– Competence of knowledge application: to be acquired by Introduction to Sport and Health Promotion, Methodology of Sport and Health Promotion, Sport methods in Sport and Health I, Topics of Sport Promotion, Topics of Sport Event. – Management competence: to be acquired by Topics of Sport Event, Seminar in Sport Promotion I and Seminar in Sport Promotion II. – Communication skills: to be acquired by Research Method in Sport and Health II, Research Method in Sport and Health III, Seminar in Sport Promotion I, Seminar in Sport Promotion II, Practice of Sport Promotion and Conference Presentation etc. – Teamwork competences: to be acquired by Methodology of Sport and Health Promotion, Seminar in Sport Promotion I, Seminar in Sport Promotion II and Practice of Sport Promotion. – Competence in Internationality: to be acquired by Topics of Sport Promotion, Topics of Sport Event, Topics of Health Promotion, Topics of Community Sport Promotion and Introduction to Human Care Science. – Research ability: Research Methods in Sport and Health I, II, III, Topics of Sport Promotion and Seminar in Sport Promotion I, II.

Curriculum Design Framework	– Specialized knowledge: to be acquired by Introduction to Sport and Health Promotion, Methodology of Sport and Health Promotion, Topics of Sport Promotion and Seminar in Sport Promotion I, II, Method in Use of Generative AI in Sport Wellness, Evidence-Based High Performance Support Strategies. – Ethical view: to be acquired by Introduction to Sport and Health Promotion, Methodology of Sport and Health Promotion and learning in eAPRIN. Furthermore, centering on students' majors, in order to contribute to cultivating basic knowledge and wide view, generic competences in relevant areas, it shall be recommended to take one credit from Inter-disciplinary Foundation Courses.
Teaching and Learning Methods	– In the first year, 3 credits (compulsory) of Introduction and Methodology shall be established in spring term in order to acquire specialized basic ability. – During the first and second year, in order to acquire basic ability of relevant areas, basic ability for promotion practice, presentation/communication skills, in the area of Sport Health Promotion, regarding sport promotion, either of sport promotion area or sport management area shall be selected and in the area of health promotion, either of health promotion or stress management shall be selected. 11 or more credits in total shall be taken mainly from Topics, Seminar, and Practice of Major Subjects of the area selected as mentioned above where students belong and Topics in the neighboring areas. Regarding Major Subjects relating research tasks, 4 or more credits shall be taken from the Major Subjects of other areas. – In the area of Sport Wellness Management, 17 or more credits shall be taken primarily from Major Subjects in the area of Sport Health Promotion and Sport Wellness Management.

Admission Policy

Desired Student Profile	The desire students shall have performance in practice and basic knowledge relating to promotion of physical education/sport and mental and physical health promotion, have motivation and interest to enhance research ability through recurrent education base on such performance and knowledge and be able to play an active role in various relevant areas as highly specialized professionals.
Student Selection Process	Recommendation entrance examination and general examination shall be performed. Allocations of the examination score shall be as follows: regarding the recommendation entrance examination, 50 points for document screening, 50 points for oral examination and regarding general examination, 30 points for document screening, 30 points for examination of specialized subject and 40 points of oral examination. The applicants shall be judged by the total points as mentioned above.

Learning Support Framework

Academic Support	– Enhancement of facilities and learning environment in the computer laboratory (e.g., upgrading PCs and software, providing a comfortable study space). – Strengthening the acquisition and updating of books and academic journals in the resource room to improve access to essential information for study and research. – Expansion of study and research opportunities through stronger collaboration with external research institutes and industry partners (e.g., joint research projects, research meetings).
Opportunities for Peer Interaction	– Implementation of group work projects in the “Introduction to Sport Wellness Studies” course. – Exchange of opinions through full participation in the interim presentation session. – Promotion of collaborative learning through exercises and practicum courses that emphasize teamwork.
Opportunities for Student–Faculty Interaction	– Direct instruction through small-group seminars in each practicum course. – Comprehensive feedback from all full-time faculty members during thesis supervision and interim presentations. – Bidirectional academic exchange through oral examinations conducted by the Master's Thesis Examination Committee.

Approaches to Assuring and Enhancing Educational Quality

– The curriculum is designed with coherence and systematic structure based on the three policies: Diploma Policy, Curriculum Policy, and Admission Policy.
– The criteria for evaluating doctoral dissertations are clearly defined to ensure transparency and fairness, thereby enhancing the visibility of educational outcomes and ensuring quality assurance.
– Regular assessments of learning outcomes are conducted, and the results are utilized to verify the appropriateness of the curriculum and the effectiveness of instructional methods.
– A combination of individualized faculty supervision and peer evaluation ensures the quality of education from multiple perspectives.
– Collaboration with external organizations is utilized to periodically verify the social relevance and validity of the educational content.
– A Curriculum Committee and related bodies are established to continuously review and improve educational activities, thereby ensuring educational quality and strengthening the system for achieving the objectives of the degree program.
– Regular curriculum reviews are conducted, incorporating feedback from both students and faculty to establish a continuous improvement cycle.
– Completion of ethics education (e-learning programs such as APRIN and ethics training workshops) is mandatory to ensure the integrity of research and educational activities.
– An annual student survey is conducted, and based on the results, student–faculty meetings are held and improvement proposals are formulated to enhance the educational environment.

Master's Program in Art

■ Master of Science in Art

Program Educational Objectives

Through theoretical studies and professional practice related to art and design from a wide range of perspectives, develop highly skilled professionals and researchers who play leading roles in a globalized society to meet today's diverse development of art and design by applying advanced skills, practical approach, and planning capabilities.

Graduate Profile	Individuals with advanced knowledge, skills, and expressive abilities in art and design, as well as applied skills and planning capabilities, who contribute to society through creative activities in art or design and take on leadership roles in educational institutions, government agencies, and private enterprises.

Diploma Policy

The degree of Master of Science in Art is awarded to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Creativity: Creative ability to promote novel and valuable research in the field of art and design	Whether to have expert knowledge and advanced skills in art or design as the basis for excellent research and creative expression
	7. Comprehension: Capability to understand the significance and role of art and design and to identify problems and evaluate their solutions.	Whether to demonstrate a deep understanding of the significance and role of art and design, as well as the ability to identify problems based on broader knowledge and experiences

	Competences	Evaluation perspectives
Knowledge and Skills	8. Problem-solving capability: Capable to identify and solve challenges in the field of art and design by means of appropriate methods	①Whether to have broader knowledge and experiences in art and design and problem-solving skills based on logical thinking ②Whether to have sound, high sense of research ethics, ethical awareness of the rights of artists, designers, and others in professional practice, and the ability to solve problems related to art or design?
	9. Insightfulness: Capability to foresee research developments that contribute to the advancement of arts and culture	①Capable to actively present research results? ②Capable to work with a diverse group of people and have broader perspectives and the energy to act as an international leader?
Guidelines for Assessing Learning Outcomes	As for learning outcome evaluation, in accordance with achievement evaluation results based on Table of Competence and Assessment of Achievement Form, the status of attainment of competences on the basis of the Diploma Policy is confirmed and evaluated objectively for each of the following stages. The stages and methods of achievement evaluation are shown below. [1st Year] – Research planning and readiness are checked based on the Research Trend Survey Sheet (in April), and on an as-needed basis, primary and secondary academic advisors evaluate the degree of attainment of competences on the basis of efforts and achievements related to learning and research and provide necessary instruction. – On the basis of achievements from activities listed in the “Corresponding main learning activities” section (examinations, reports, and artworks in classes, extracurricular activities, etc.), the degree of attainment of competences is checked in accordance with criteria listed in the “Evaluation perspectives” section. Then, on the basis of the results of the interim evaluation “Achievement Evaluation” (Table of Competence, Assessment of Achievement Form), which is conducted in December, the status of attainment of competences based on the Diploma Policy is confirmed and evaluated. [2nd Year] – Ahead of the submission of a Master's dissertation (in December), the progress of research is checked based on the Master's Dissertation Proposal Form (in May) and the Master’s Dissertation Title (Finalized) Form (in November), and on an as-needed basis, primary and secondary academic advisors evaluate the degree of attainment of competences on the basis of efforts and achievements related to learning and research and provide necessary instruction.	

Guidelines for Assessing Learning Outcomes	– On the basis of achievements from activities listed in the “Corresponding main learning activities” section (examinations, reports, and artworks in classes, extracurricular activities, etc.), the degree of attainment of competences is checked in accordance with criteria listed in the “Evaluation perspectives” section. Then, on the basis of the results of the final evaluation “Achievement Evaluation” (Table of Competence, Assessment of Achievement Form), which is conducted in December, the status of attainment of competences based on the Diploma Policy is confirmed and evaluated. – The Master's Dissertation Review Committee examines final research projects (“Thesis”, “Work and Thesis”, “Work and research reports”), and on the basis of the final evaluation “Achievement Evaluation” (Table of Competence, Assessment of Achievement Form), it is judged whether competences necessary to acquire a degree have been attained.
Evaluation Criteria for Degree Theses/ Dissertations	Master's dissertations or research outcomes on a specific subject are subject to evaluation under the following criteria. Students are subject to submit either < a > < b >,or < c >. < a > Thesis 1. The significance and purpose of the research are clearly indicated and the method taken is appropriate. 2. The conclusions may contribute to the development of the field. 3. Logically clear, based on preceding. < b > Work and thesis (Work) 1. The theme, intent and method of production are clear and original. 2. High level of perfection and may contribute to the development of the field. (Thesis) 1. The significance and purpose of the research are clearly indicated and the method taken is appropriate. 2. The conclusions may contribute to the development of the field. 3. Logically clear, based on prior research. < c > Work and research report (Work) 1. The theme, intent and method of production are clear and original. 2. High level of perfection and may contribute to the development of the field. (Research report) 1. The content of the research is highly relevant to the work. 2. The significance and purpose of the research are clearly indicated and the method taken is appropriate. 3. The points and conclusions are sufficiently valid.

Evaluation Criteria for Degree Theses/ Dissertations	【Examination System and Examination Method】 The Master's Dissertation Review Committee, consisting of one primary examiner and two or more secondary examiners, shall be established, and an oral examination on the relevant research and related fields shall be conducted as a final examination to determine whether the standards of the above items are satisfied.

Curriculum Policy

The Master's Program in Art comprises 12 fields, including Art History, Art Environment Support, Western-style Painting, Japanese-style Painting, Printmaking, Sculpture, Sho-Calligraphy, Art and Design Science, Plastic Art and Mixed Media, Craft, Visual Communication Design, and Environmental Design. Under an educational policy that leverages the unique characteristics of each field, the program encourages interdisciplinary and cross-sectoral study and research. It aims to cultivate broad-ranging capabilities while fostering high-level expertise, expressive skills, and rich academic knowledge, ultimately developing the professional and practical skills necessary for research activities in the Doctoral Program.

Curriculum Design Framework	– "General Foundation Subjects" allow students to acquire basic knowledge and logical thinking skills in all aspects of art and design. – "Major Subjects" enable students to acquire research skills and creative expressive abilities corresponding to the expertise of each field. – "Special Seminars and Workshops: Presentation and Exhibition I and II" provides opportunities to present the results of classes and research to develop the ability to deliver presentations and to objectively analyze their own research. – "Core Seminar" allows students to acquire the ability to carry out research in each expert field that will lead to their master's thesis studies. – "Core Research" allows students to acquire the ability to carry out master's thesis studies in their expert fields.
Teaching and Learning Methods	– In the 1st year, the "research trend survey sheet" must be submitted. Accordingly, the primary and secondary academic advisors shall be decided according to the content of the research. – In the mid-term and end of each semester, an "art exhibition", "work review", and "paper presentation" will be held to confirm and evaluate research status. (Special Seminars and Workshops: Presentation and Exhibition I) – In the 2nd year, students are to submit a "Master's dissertation proposal form" and a "Master's dissertation title (finalized) form" for their final research, and their primary and secondary advisors shall give guidance accordingly. – In the middle of each semester and at the end of the semester, "art exhibition", "work review", "paper presentation" will be held to confirm and evaluate the status of research. (Special Seminars and Workshops: Presentation and Exhibition II)

Admission Policy

Desired Student Profile	Highly motivated students who have basic knowledge, skills, and a high level of interest in art and design, and are willing to take the initiative in solving various problems in response to the diversified and sophisticated demands of art in modern society
Student Selection Process	– Examinations are conducted in relation of expert areas and to evaluate the ability to think, express, and envision according to the characteristics of the field. – Applicants will be selected based on a comprehensive assessment of their abilities in expert fields, language proficiency and willingness to study.

Learning Support Framework

Academic Support	– By including secondary academic advisors, the system ensures the objectivity of research supervision and capability to respond to various inquiries. – Voluntary learning and research activities outside classroom hours (release of theses and artworks, participation in projects on and outside campus, etc.) are recommended, and to enhance their motivation, students are informed that extracurricular activities, such as independent art production and research will be considered as elements of learning outcome.
Opportunities for Peer Interaction	– To hold the Master's Program in Art Degree Exhibition (outside campus), where the results of final research projects (theses, artworks, etc.) are presented, a working group is organized, consisting of students who are to complete the Master's program and other students, and students are encouraged to cooperate with each other in planning and operating the exhibition proactively. – By organizing artwork exhibitions and research presentation workshops, where students can present their learning and research achievements in each field of study (each class), projects on and outside campus, and other events, opportunities are provided to enable students to exchange opinions.
Opportunities for Student–Faculty Interaction	Exchanges between students and faculty members are promoted by encouraging them to participate in research and other projects hosted by faculty members mainly in charge of this degree program; at the same time, they are encouraged to take part in academic society meetings, art councils/organizations, and study group meetings where they can interact with outside researchers, art creators, and others. In this manner, individual students' motivation for learning is enhanced by providing communication with leaders and predecessors in the field of art, leading to improvement in the quality of research.

Approaches to Assuring and Enhancing Educational Quality

The Learning and Education Review Committee and other organizations evaluate students' learning outcome and verify the adequacy of the educational program and the appropriateness of educational guidance.

- The status of students' learning is confirmed on the basis of information on academic affairs and institutional research data.
- Problems in learning and research at art-related organizations are identified, and faculty development training sessions are hosted together with such organizations.

Master's Program in Design

■ Master of Design

Program Educational Objectives

The goal of this program is to train advanced professionals with the qualities of an international top leader who can master the practical skills to create products and environments that improve the state of people's minds and hearts, to create social systems that create connections between people and make them brighter and more fulfilling, and who can utilize their creativity to nurture and sustain an affluent and constructive community and society.

Graduate Profile	Students who have the will to propose solutions to problems that transcend regional and cultural barriers through cross-sectional, practical, and international studies, who have the tenacity to produce results, and who have the ability to judge (task extraction capability), the ability to break through (planning ability and logical persuasiveness), and the ability to complete duties based on their expertise.

Diploma Policy

The degree of Master of Design is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Conceptual and expressive skills: problem identification (discernment) and planning skills	Have you mastered the ability to plan and express research and production using problem identification skills, while also being familiar with specialized issues?
	7. Analysis: Expert problem analysis to solve problems from a broad perspective	Have you acquired the ability to analyze specialized problems in order to carry out excellent research in their field of specialization? Has the student acquired the ability to analyze comprehensive design issues from a wide range of fields?
	8. Solvency: Ability to create new solutions and propose outcomes to society and academia, backed by expertise	Have you acquired problem-solving (task completion) and breakthrough (planning) abilities through internships and practical exercises.

Guidelines for Assessing Learning Outcomes	– At the end of the fall semester of the first year, all research advisors will conduct the first-stage achievement review to evaluate the students' academic progress. – In the second year, from the end of the spring semester to before the fall semester, the second-stage achievement review and the mid-term evaluation of the completion research will be conducted. – At the end of the second year, a public presentation of the completion research (thesis or creative work, including projects) will be held, followed by a review of the research by a dissertation committee consisting of a primary examiner and at least two secondary examiners, along with the final achievement review.
Evaluation Criteria for Degree Theses/ Dissertations	The purpose of this course is to evaluate students' ability to analyze and apply design issues and their ability to solve complex problems from an interdisciplinary perspective The evaluation is based on either a. or b. below. Applicants will be evaluated based on one of the following a. b. criteria, and the final examination by the dissertation review committee based on each of the following criteria. The Doctoral Dissertation review committee will consist of one primary examiner and two or more secondary examiners, and reviews are conducted through oral examination. a. Standards for Theses Paper 1. The ability to think and analyze based on interdisciplinary knowledge of design and the ability to apply it to society. 2. Expertise in design and analytical techniques with a recognized ability to promote interdisciplinary applied research. 3. Recognized ability to apply design and manufacturing in domestic and international social settings, based on an academic background in design studies. b. Standards for Works and Research Reports (Works) 1. The problem-setting, production methods, and means of realization are clear and original. 2. It has a high degree of completeness and can contribute to the development of the field. (Research reports) 1. The content of the research must be found to be relevant to the work. 2. The student must have specialized knowledge and analytical skills in design and the ability to promote interdisciplinary work. 3. Academic knowledge of design and the ability to apply it to design and manufacturing in domestic and international settings.

Curriculum Policy

The Master's Program in Design provides students with the ability to tackle problems from a broader perspective by combining specialized problem identification skills (discernment), specialized fields and integrated methodologies in order to research and design for a variety of industrial and social issues such as products, planning, entertainment, composition, architecture, and spatial planning as a system. The course fosters mission completion, logical persuasion, and international communication and proposal skills. Specifically, in addition to the various fields of design, including composition, Kansei science, and visual psychology, faculty members from related fields such as systems information technology, environmental engineering, physiology, ergonomics, and disability science will provide cross-disciplinary and practical training courses.

Curriculum Design Framework	– The curriculum is organized to ensure that students achieve learning outcomes through primary studies corresponding to the knowledge and abilities outlined in the Diploma Policy. – Students acquire knowledge and logical thinking skills ranging from basic design theory to application and practice through General Foundation Subjects. – Interdisciplinary knowledge and broad knowledge are acquired through the Graduate General Education Courses and the Inter-disciplinary Foundation Courses. – Students acquire a wide range of design theory and research and development methods that support its application through Major Subjects across disciplines. – Through project exercises, students will acquire problem identification, planning and presentation skills that correspond to the implementation of the design. – Through internships, etc. students acquire the ability to identify practical issues, as well as planning and persuasion skills. – Through overseas training, etc., students acquire international negotiation and networking skills to succeed in design, layout, and planning. – Students acquire comprehensive planning ability and task completion ability through special design study exercises.
Teaching and Learning Methods	– In the first year, students will submit a “research plan form”, and the primary and secondary academic advisors will be decided according to the content of the research. – In addition to General Foundation Subjects and Major Subjects offered every other year, students will take Graduate General Education Courses and Inter-disciplinary Foundation Courses. – Students will undertake systematic project seminars, internships, and overseas training to deepen research. – In the second year, students receive research guidance through biennial Major Subjects and special exercises in design. – In the fall semester (end of December), final research (articles or works (including projects) and reports) is submitted and reviewed, and the final achievement level is reviewed.

Admission Policy

Desired Student Profile	We seek individuals who have talents and are willing to propose solutions to problems that transcend regional and cultural barriers, and individuals who are willing to constantly challenge themselves to create new solutions and develop the tenacity to produce results.
Student Selection Process	Through general selection process, special selection process for self-recommended applicants, and special selection process for overseas residents, those who excel in expressive skills in design and in various research and educational fields related to design will be selected. – In general selection process, professional aptitude is evaluated through written and oral examinations, and fundamental research capabilities are evaluated based on application document screening. – In special selection process for self-recommended applicants and special selection process for overseas residents, professional aptitude and fundamental research capabilities are comprehensively evaluated by application document screening and oral examination.

Learning Support Framework

Academic Support	– At each stage—orientation upon enrollment, formulation of research plans, and achievement evaluations—we confirm the learning conditions necessary to produce academic outcomes. We establish a system to collaboratively explore course opportunities with students, such as graduate school common subjects and foundational courses, and to prepare the necessary environment. – Through the associate advisor system, we ensure objectivity in research guidance and establish a framework to address diverse consultation needs. – Opportunities to participate in seminars and research presentation sessions outside one's own academic year are provided. This serves as an opportunity to objectively review one's research framework and supports the deepening of research. – Faculty Development (FD) programs, such as copyright workshops, are conducted to provide opportunities to enhance the knowledge and ethical awareness necessary for advancing research.
Opportunities for Peer Interaction	– The curriculum incorporates mechanisms that provide opportunities for students to participate in seminars and presentation sessions outside their own academic year, promoting cross-year/cross-organizational student interaction through Q&A sessions and similar forums. – Through the TA/tutor system and the promotion of student projects, mechanisms are created to continuously generate opportunities for students to learn from each other. – Student gatherings held by the academic division provide opportunities for students to interact across disciplines.

Opportunities for Student–Faculty Interaction	– We encourage student participation in faculty development (FD) initiatives organized by the Academic Division/degree programs, supporting enhanced interaction by fostering shared awareness of common challenges. – Through student gatherings held by the Academic Division, we provide opportunities for interaction with faculty members across disciplines. – All faculty members responsible for degree programs participate in presentations of outcomes from project seminars, special seminars in design studies, and similar events. This facilitates exchange of opinions and provides opportunities for interaction between students and their advisors as well as other faculty members.

Approaches to Assuring and Enhancing Educational Quality

- The philosophy of the degree program, its activities, and student engagement in classes and projects are summarized annually and published as Design Discourse DPD. This serves both as a public relations tool and as a means to seek guidance from internal and external sources.
- Within the Degree Program Management Committee, the following subcommittees are established: the Academic Affairs Committee (handling matters related to DP), the Curriculum Committee (handling matters related to CP), the Admissions Committee (handling matters related to AP), the Faculty Development Committee (handling matters related to improving teaching quality), and the Student Committee (handling matters related to the learning support system). Each subcommittee reviews the previous year's performance during the first half of the academic year and discusses improvement measures for the following year.
- For improvement items related to enhancing teaching quality or learning support systems, the FD Committee organizes them and plans FD activities in collaboration with the university-wide/academic divisions, striving to improve teaching quality.
- The Management Meeting comprehensively reviews the results of these discussions, establishes necessary improvement goals, compiles them into an inspection and evaluation report, and, as needed, formulates a plan to update standards reflecting these goals. This becomes the plan for the next academic year.
- Discussed items and countermeasures are compiled and published via the degree program's website and other channels, establishing a system to seek guidance from both internal and external sources.

Master's Program in Heritage Studies

■ Master of Heritage Studies

Program Educational Objectives

The purpose of this course is to provide students with a comprehensive understanding of the problems facing the world's cultural and natural heritage from various aspects such as politics, economics, society, and the natural environment, and to acquire the theories and techniques for solving issues for their protection, and to train highly specialized professionals who can contribute to the protection of cultural and natural heritage at home and abroad, as well as world heritage sites based on the World Heritage Convention.

Graduate Profile	To develop students capable of comprehensively understanding theories for the protection and evaluation of cultural and natural heritage, technologies for the management and restoration of cultural and natural heritage, and the locations of problems faced by cultural and natural heritage, and accurately defining and solving problems in relation to the goals of the international community, as well as to develop students with the communication skills to negotiate freely with stakeholders in a wide range of areas of general society for the protection of cultural and natural heritage.

Diploma Policy

The degree of Master of Heritage Studies is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Ability to use shared knowledge: The ability to make use of common knowledge of cultural and natural heritage conservation for the benefit of society.	Does the student intend to use their broad knowledge of the conservation of cultural and natural heritage for the benefit of society?
	7. Ability to utilize specialized knowledge: The ability to make use of advanced knowledge of cultural and natural heritage for the benefit of society.	Does the student intend to use their expertise in preserving cultural and natural heritage for the benefit of society?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability to use common skills: The ability to address common cultural and natural heritage issues.	Can the student tackle the problem from a broad perspective in order to preserve cultural and natural heritage?
	9. Ability to utilize expertise: The ability to address specialized cultural and natural heritage protection issues.	Can the student use their professional skills to solve problems for the preservation of cultural and natural heritage?
	10. International practical ability: Awareness of protecting cultural and natural heritage from an international perspective	Has the student acquired the will and language skills to contribute to the international community for the preservation of cultural and natural heritage?
Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted through multiple staged evaluations based on the “Master's Thesis Assessment Sheet”, whereby the program objectively verifies and evaluates the student's attainment of the competences stipulated in the diploma policy at each stage as follows: First Stage (Autumn Semester of Year 1): During the Master's Thesis Proposal Presentation, all faculty members evaluate the student's work using a rubric-based assessment. Second Stage (Autumn Semester of Year 2): During the Individual Thesis Review, the principal advisor and two co-advisors conduct a rubric-based assessment. Third Stage (End of Autumn Semester of Year 2): During the Master's Thesis Presentation, all faculty members evaluate the thesis using the rubric, followed by a final achievement review conducted by all faculty members in the Education Committee. In addition, each course offered in the program clearly identifies the knowledge and skills it aims to develop. The evaluation of students is grounded in the knowledge and abilities acquired through their coursework, while also considering various academic and professional activities outside the program requirements—such as conference presentations, field investigations, and internships. These activities are assessed comprehensively in light of the knowledge and competences enhanced through each experience.	

Evaluation Criteria for Degree Theses/ Dissertations	(Master's Dissertation Review) 1. The master's dissertation review expert committee shall be composed of one primary and two secondary examiners. Two of the three will be full-time faculty members of the World Heritage Degree Program. 2. Individual reviews will be conducted privately with the attendance of all the examiners of the master's dissertation review committee. However, when it is necessary for other teachers, etc. to participate, the handling of such matters shall be determined through consultation between the primary and secondary examiners. Individual reviews shall normally be conducted once, but when necessary, multiple individual reviews may be conducted through discussions between primary and secondary examiners. In the individual examination, a pass or fail decision is made based on the agreement of all examiners. 3. At the open review, all degree program faculty members will review the students based on the results of the individual reviews, and a decision on acceptance or rejection will be made at the full-time faculty meeting. The treatment of students who are absent from the open examination due to illness or other unavoidable circumstances will be discussed at the full-time faculty meeting. (Evaluation criteria) 1. Appropriate theme for a master's dissertation in World Heritage Studies (problem and issue setting) 2. Clear positioning of the paper based on prior research (research positioning) 3. Research methods appropriate to the subject are selected and the grounds for the selection are credible (Reliability of research methods and arguments). 4. The argument has been sufficiently developed and there is no major contradiction overall (Structure of the paper) 5. No ethical issues in the conduct of the study and the publication of the results (ethics) (Evaluation items) 1. Originality: Novelty of either the concepts and methods introduced or the facts and laws discovered. Includes improvement of a known method, application from a different field, etc. 2. Budding potential: Research that is at the beginning of the research process, but is based on new ideas and concepts and has great potential for future development. 3. Inventiveness: It can clarify new facts that may change conventional theories, or to develop new research areas, research and technology systems. 4. Usefulness: Can provide useful information that is useful for improving technology or for practical or academic purposes.

Curriculum Policy

Establish practical and interdisciplinary courses to acquire a wide range of knowledge and expertise in the preservation and restoration of not only world heritage but also cultural properties, the preservation of cultural and natural heritage, and the planning and management of heritage sites.

Curriculum Design Framework	– The curriculum will be organized so that all graduate students can take compulsory subjects and elective subjects to acquire specialized skills. – The elective subjects will be divided into three categories: International Heritage, Assessment and Preservation of Heritage, and Management and Planning of Heritage, and consideration will be given so that credits can be acquired in a balanced manner according to the expertise of graduate students.
Teaching and Learning Methods	– In the first year, students present their research plan in the required subject “World Heritage Studies” and summarize their research plan at the end of the first year with guidance from their supervisor in the required subject “Special Seminar on World Heritage Studies”. – From the first year to the second year, graduate students will take courses and exercises tailored to their specialty from among the elective subjects in the fields of International Heritage, Heritage Evaluation and Preservation, and Heritage Management and Planning. – In the second year, master's research will be presented in the required subject “Special Research for World Heritage Studies “ under the guidance of an academic advisor, and the Master's dissertation will be finalized with the advice of faculty in other fields.

Admission Policy

Desired Student Profile	We seek students who have a broad interest in the protection, management, and utilization of World Heritage sites, as well as international cooperation in the exchange and inheritance of diverse cultures, efforts to protect the global environment, including biodiversity, and regional development efforts, including tourism, and who have the academic skills and qualifications necessary for research activities.
Student Selection Process	The selection of entrants will be conducted based on a foreign language (English) score submitted and oral examination to comprehensively evaluate language skills, basic professional knowledge, and research ability which are necessary for Heritage Studies.

Learning Support Framework

Academic Support	In order to effectively implement learning that culminates in the preparation of a master's thesis—serving as the final task and contributing to the acquisition of specialized knowledge as well as practical problem-solving—the program provides support in collecting and organizing prior literature and research, understanding thesis structure and writing methods, employing research methodologies such as interviews and questionnaires, using software for preparing figures and tables, developing presentation skills, applying data analysis techniques (including statistics, GIS, and 3D measurement), and acquiring technical skills necessary for submitting papers to academic journals. Furthermore, a “Student Research Achievements” page is created on the program website to publicly showcase student research outcomes, thereby encouraging and motivating students to submit their work for publication.
Opportunities for Peer Interaction	As opportunities for student interaction beyond academic year and laboratory boundaries, the program provides intensive learning sessions on each specialized field, incorporating group work and accompanying peer review. In addition, numerous opportunities such as joint research presentations—including those with laboratories at other universities—and off-campus training are offered to broaden perspectives and interests, while also helping students to clarify their own specialization and enhance their study habits and motivation. Furthermore, in order to promote interaction between Japanese and international students, group work and peer review activities are actively employed as opportunities to foster cross-cultural understanding and collaborative skills.
Opportunities for Student–Faculty Interaction	In addition to coursework and research supervision on campus, the program provides numerous multi-day off-campus training opportunities that allow students to engage in dialogue and interaction, thereby contributing to their personal development. Furthermore, each student is assigned not only a primary supervisor but also a co-supervisor, and participation in other seminars is encouraged. By creating an environment in which students can easily consult with faculty members beyond their own supervisors, the program supports learning from interdisciplinary and multifaceted perspectives.

Approaches to Assuring and Enhancing Educational Quality

In the Education Committee, the validity of the curriculum and the appropriateness of instructional practices are examined using the results of students' learning outcome assessments and their demonstrated competences. In the process of preparing the master's thesis, the program provides multiple staged presentation opportunities, as well as opportunities to receive guidance and advice from faculty members in related fields. Through these structured evaluations, the program is designed to enhance the quality of education and to foster a broad academic perspective. Furthermore, through faculty development (FD) activities, instructors conduct mutual reviews of course syllabi to ensure balance and comprehensiveness in the content of each course. Based on these reviews, revisions to the curriculum and updates to course content are made as necessary.

Master's Program in Informatics

■ Master of Science in Informatics

Program Educational Objectives

Information has played an important role in human activities, but its importance has rapidly increased with recent technological advances. In order to respond to such situations, the Master's Program in Informatics (doctor first semester course) will train personnel engaged in specialized work to utilize information for academic purposes, education, daily life, culture, etc., through an interdisciplinary approach that combines humanities and sciences.

Graduate Profile	A person who understands human and information-related issues and has the expertise and skills to carry out tasks – The ability to use the latest information technology to analyze data, develop systems and produce media – A person who can propose the best information environment for the community based on the interaction between humans and information – A person who understands the diversity of history and culture, and is able to share and pass on knowledge and information resources

Diploma Policy

The degree of Master of Science in Informatics is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Qualitative research competence: the ability to analyze data semantically using appropriate methods.	①Can the student obtain data for research and select appropriate methods for semantic analysis ②Can the student get a reasonable interpretation from the results of the analysis, depending on the purpose?
	7. Quantitative research competence: The ability to analyze data mathematically using appropriate methods.	①Can the student obtain data for research and select appropriate methods for mathematical analysis ②Can the student get a reasonable interpretation from the results of the analysis, depending on the purpose?
	8. Media Expertise: Expertise in developing new media with an awareness of its application to social systems.	①Can the student explain the impact of media and network technologies on society? ②Can the student develop media based on information design and its impact on society?

	Competences	Evaluation perspectives
Knowledge and Skills	9. Systems Expertise: Expertise in designing systems that analyze multiple aspects of human-information interaction	①Can the student build a computational model of human information behavior ②Can the student propose a new service system based on human-information interaction?
	10. Resource Expertise: Expertise in understanding historical and cultural diversity through materials and building a knowledge resource base	①Can the student understand the diversity of history and culture and envision the future of information resources? ②Can the student understand the various issues of information distribution and evaluate information management and information services?
	11. Information Ethics: Ethics and normative awareness of information	① Does the student have accurate knowledge of intellectual property rights and the ability to make appropriate judgments? ②Can the student act in a normative manner when it comes to the handling of information?
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted by objectively confirming and assessing the acquisition status of competences based on the policy for degree conferral at each stage according to the achievement evaluation using the “Competence Evaluation Chart”. The stages and methods for achievement evaluation are indicated as follows. – The faculty member responsible for research guidance conducts the achievement assessment based on a rubric in response to the student's reflection. – Subsequently, a Master's Thesis Review Committee consisting of a primary examiner, secondary examiner, and reviewer totaling three members, a direct assessment of the attainment status of competences is conducted based on a rubric along with the dissertation review, and the steering committee conducts the final evaluation of the student's competence achievement.	

Evaluation Criteria for Degree Theses/ Dissertations	Dissertation submitted for a degree for which all of the following evaluation items are deemed appropriate or have been achieved will be accepted as a master's dissertation upon completion of the final examination. 1. Significance of the research theme 2. Grasping and understanding of prior research 3. Validity of the research method 4. Conclusions and the validity of the logic leading to them 5. Adequacy of style and organization 6. Appropriate citation of documents and materials The method of dissertation examination shall be as follows. Dissertation reviews are conducted by the Dissertation review committee, which is established for each dissertation, after comprehensively judging the content of the dissertation, the presentation of the dissertation in public, and the final examination. 1) The Dissertation review committee consists of one primary examiner and two or more secondary examiners. 2) The public presentation will take about 30 minutes including questions and answers. 3) Final examinations shall be conducted by oral or written means, mainly on the dissertation and related fields. However, an open dissertation presentation may be substituted for an oral examination, and if necessary further oral or written examinations will be given.

Curriculum Policy

To train individuals who will be involved in specialized work to utilize information for academic, educational, lifestyle and cultural activities through an interdisciplinary approach that integrates the humanities and sciences, students will acquire general and specialized knowledge and abilities as outlined in the diploma policy. General knowledge and ability will be acquired mainly through Graduate General Education Courses, Inter-disciplinary Foundation courses, degree programs' common courses and compulsory seminar subjects, and specialized knowledge will be acquired mainly through elective lecture subjects. Curricula in both Japanese and English for students who enrolled in either the spring semester (April) or the fall semester (October), and a curriculum at the Tokyo Campus will be created in an integrated manner.

Curriculum Design Framework	– The curriculum consists of Graduate General Education Courses, Inter-disciplinary Foundation Courses, and the Degree Programs' Common Courses, as well as Media Science Specialized Courses, Information Interaction Specialized Courses, Library and Information Science Specialized Courses, and the Methodological Foundation Courses, the Research Practice Courses, and the Research Seminar Courses all of which are unique to this degree program. – Students will acquire general knowledge and abilities such as knowledge utilization, Management competence, Communication competence, Teamwork competence, and Competence in Internationality through the Graduate General Education Courses, the Inter-disciplinary Foundation Courses, and the Degree Programs' Common Courses.

Curriculum Design Framework	– The Specialized Courses in Media Science (lecture subject) provide students with the ability to read the nature of data, select appropriate methods for their purposes, and analyze the data. They also acquire media expertise that includes the ability to develop new media with an awareness of its application to information and social systems. – The Special Courses on Information Interaction (lecture subject) teaches students system expertise that includes the ability to analyze multifaceted interactions between human intellect and computer input/output and the ability to design information services and various Web services. – The Special Courses in Library and Information Science (lecture subject) provide students resource expertise that includes the ability to understand the meaning of historical and cultural materials, foster an understanding of society, foster a new society, and design information services for libraries, archives, museums, and a variety of Web services. – The Methodological Foundation Courses group (seminar courses) consists of Research Foundation, Literature Survey, Surveys and Data Analysis, aiming to develop fundamental research skills. The Research Practice Courses group (seminar, practical training courses) consists of Research Design, Job Design, Content Production and Development, Records and Information Management, MDA-related courses, aiming to develop practical research skills. – The Group of Research Seminar Courses (seminar courses) consists of the Special Seminar in Informatics. Students will acquire research ability through the practice of research in semantic research skills, mathematical research skills, and information ethics, as well as theories and applications of data usage leveraging the characteristics of media, theories and applications of information usage centered on communication, and theories and applications of knowledge resource management as social infrastructure. – Each subject is evaluated according to the evaluation method described in the syllabus.
Teaching and Learning Methods	– 12 credits or more from Major subject groups (lecture subjects). – Seminar, Practical Training courses 6 credits or more from Methodological Foundation Courses and Research Practice Courses and 4 credits from Research Seminar Courses. In principle, students will solidify their basic research skills by taking basic methodological subjects in their first year, and acquire research execution skills based on their basic research skills by taking Research Seminar Courses in their first and second year. – Up to 8 credits from Graduate General Education Courses, Inter-disciplinary Foundation Courses, Degree Programs' Common Courses, and lecture courses of other graduate schools or degree programs of the University. – Regardless of the entrance examination category and the instructional language, the prescribed credits may be included in the completion requirements.

Admission Policy

Desired Student Profile	– Individuals who have a deep interest in the use of information and strive to take an interdisciplinary approach to the formulation and resolution of problems. – Individuals who have basic knowledge of informatics or related fields and who have communication skills, presentation skills, and language skills.
Student Selection Process	Selection will be based on a comprehensive evaluation that includes the English language scores, the oral examination results and the application review. The English language test may be waived for applicants who are applying through the Special Selection Process for Recommended Applicants and the Special Selection Process for Working Individuals.

Learning Support Framework

Academic Support	– Methodological Foundation Courses in Master's Program (Seminar courses) - “Research Foundation in Informatics”, “Literature Survey”, and “Survey and Data Analysis” - provide students with the basic skills they need to learn.
Opportunities for Peer Interaction	– Master's course (Seminar courses) “Research Design” is aimed at students who have specific motivations for writing a research plan, such as applying for external funding or scholarships, or aspiring to a research career. Students learn the basics of writing a research plan using their own individual research themes, and are then asked to evaluate each other's plans to enhance the peer effect among students. – Upper-level students provide academic advice to under-level students at the Kasuga Learning Commons (KLC) in Library on Library and Information Science. – Student tutors are assigned to international students.
Opportunities for Student–Faculty Interaction	– Student meetings are held jointly for master's and doctoral students, allowing them to freely exchange opinions about Informatics degree program. – Multiple faculty members provide group guidance with the aim of discussing each other's research progress and receiving advice from different perspectives. – Students can participate in a lunch colloquium held approximately once a month to promote interdisciplinary research, providing an opportunity for them to discuss the latest research topics with faculty members.

Approaches to Assuring and Enhancing Educational Quality

As part of the degree program, a PDCA cycle has been established that refers to direct assessment data of competences from the previous year and leads to educational improvements in the following years.
Specifically, under the degree program leader, the Curriculum Design Group, Research Advisory Group, and Diploma Assessment Group are formed, with regular information sharing within the steering committee ensuring coordination between the groups. As a result, a system has been established that consistently works on improving the content of curricula and research guidance based on the results of competence evaluation.
Decisions and discussions within each group are first reviewed and coordinated by the steering committee, and then shared and discussed among all the faculty members at the degree program faculty meeting held once a month. Through this process, a common understanding of the educational policies and areas for improvement is formed across the entire program.
Furthermore, alongside these efforts, faculty members regularly participate in faculty development programs at the Graduate School of Comprehensive Human Sciences, strict implementation of syllabus reviews using checklists based on categories independently established by the Curriculum Design Group, and feedback is provided to the instructors of each course based on class evaluation results.
Through these processes, continuous improvement in the quality of educational practices by individual faculty members is also pursued.

Master's Program in Life Science Innovation (Disease Mechanism)

■ Master of Disease Mechanism

Program Educational Objectives

The Master's Program in Life Science Innovation cultivates highly specialized professionals who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	As Japan's population ages and the birthrate declines, there is an urgent need to understand the pathological mechanisms of these diseases. It is expected that we will not only develop innovative treatments for diseases, but also stimulate the economy by creating solutions to the problems of an aging society with declining birthrates before the rest of the world. The area of disease mechanism fosters “individuals with the basic skills for doctoral dissertation research to become outstanding basic medical researchers who pioneer innovative knowledge in the field of biomedical sciences, while keeping in mind the need to give back to society the fruits of their research, and highly skilled professionals with a wide range of knowledge who are active in a variety of medical fields”.

Diploma Policy

The degree of Master of Disease Mechanism is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Innovation ability: Ability to open up new developments in the areas of life science	①If the basic concepts about the areas of life science were widely gained and problems are interpreted from a higher perspective ②If one has the motivation to gain new skills and knowledge instead of being bound by one's area of expertise ③If the social needs in the areas of life science are understood ④If appropriate research plans are drawn up and carried out to solve Pathophysiology issues
	7. Specialized knowledge: Advanced knowledge and command of an area of expertise	①If leading-edge specialized knowledge about Pathophysiology was gained ②If gained knowledge was put to use to solve issues

<table>
<tr><td rowspan="2">Knowledge and Skills</td><td>Competences</td><td>Evaluation perspectives</td></tr>
<tr><td>8. Advanced practical English: Practical English proficiency that works in the areas of life science</td><td>①If an accurate description of one's understandings or opinions about problems in the areas of life science is provided in English
②If written research proposals, reports, etc. are created in English</td></tr>
<tr><td>Guidelines for Assessing Learning Outcomes</td><td colspan="2">The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods.
– Based on a curriculum designed to achieve the competences defined by the Master's Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion.
– At the end of the first year, Achievement Evaluation I is administered, through document review and an oral examination, to determine whether the student has attained the required level of the competences specified in the Diploma Policy.
– In the second year, Achievement Evaluation II and the Final Examination are administered, through document review and an oral examination, to verify that the student has fully achieved the competences specified in the Diploma Policy.</td></tr>
<tr><td>Evaluation Criteria for Degree Theses/ Dissertations</td><td colspan="2">【Level standards required for the degree thesis】 The degree thesis must be the results of work in which the diploma applicant took the initiative and must contain unprecedented research findings that contribute to make strides in the areas of Pathological mechanism field. The degree thesis must be written logically and scientifically and must be constructed in an appropriate format as a degree thesis.
【Review board members】 A thesis is reviewed by an exclusive board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the two or more sub-reviewers, one or more faculty members qualified to supervise the research in the Program must be included. The three or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the three or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included.
【Review method and review items, etc.】 The applicant is asked to explain their degree thesis content and then questioned by exclusive board members about what they have explained. During this examination, in which the applicant is required to make a presentation about their degree thesis logically and scientifically, the applicant is evaluated to see if they can convince the reviewers sufficiently by answering the reviewers' questions using the specialized knowledge of the areas of Pathophysiology with insight.</td></tr>
</table>

Curriculum Policy

Under the education and research environment where there is the active participation by not only the faculty members of Tsukuba but also by collaborative graduate school faculty members from the research institutes or such which belong to the Tsukuba Life Science Promotion Association, students learn about unsolved issues of the society and get engaged in research activities to pursue to open up new strides in the areas of Pathological mechanism field. The Master's Program in Life Science Innovation, whose purpose is to cultivate globally active highly specialized professionals, offers all lectures in English and organizes lectures and seminars taught by researchers who are active in the front lines and belong to overseas research institutes. To cultivate the ability to have the big picture in mind from a cross-disciplinary perspective, students benefit from the General Foundation Subjects which cover all-around basic concepts in the areas of life science. As part of the career training, the curriculum includes internship subjects and other subjects such as for learning the operations of research organizations, etc. Moreover, Major Subjects for cultivating the expert abilities in Pathophysiology are also organized.

Curriculum Design Framework	− The curriculum of the Department of Disease Mechanism consists of Major Subjects, General Foundation Subjects common to all six fields of the degree program (Disease Mechanism, Drug Discovery and Development, Food Innovation, Environmental Control, Bioinformatics, and Biomaterials), and common subjects for graduate students. In addition to the lectures in the Major Subjects, students receive research guidance on pathological mechanisms in the laboratories to which they belong. − Competence of knowledge application is gained with master's thesis creation, etc. − Management competence is gained with “Regulatory Science”, etc. − Communication competence is gained with “Master's Research in Life Science Innovation”, etc. − Teamwork competence is gained with “Team Learning in Life Science Innovation (Basic)”, etc. − Competence in Internationality is gained with “Master's Life Science Innovation Seminar”, etc. − Innovation ability is gained with Major Subjects, “Master's Research in Life Science Innovation” , etc. − Specialized knowledge is gained with Major Subjects, etc. − Advanced practical English is gained with General Foundation Subjects, Major Subjects, etc.
Teaching and Learning Methods	− After learning how to gather information and understanding social needs under the supervision of supervisory faculty members, students draw up and carry out an appropriate research plan for solving Pathophysiology issues and round up the results into research outcomes. − Students acquire English presentation skills in the process of presenting their research outcomes at the T-LSI student workshop and other events. − Through General Foundation Subjects and Graduate General Education Courses, students widely gain the basic concepts in the areas of life science and improve communication ability in English in order to be capable of using knowledge not bound by one's area of expertise. − Practical abilities as working individuals are cultivated through internships. − Specialized knowledge is gained through Major Subjects.

Admission Policy

Desired Student Profile	We seek candidates who possess the motivation to make innovations in the areas of Pathophysiology and have the sufficient qualities to gain the specialized knowledge necessary to attain such innovations, and advanced practical English.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess bachelor's degree level knowledge necessary for learning in the Master's Program in Life Science Innovation and the ability to write about research backgrounds and future prospects in English. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation to drive innovation in the field of Pathological Mechanism and their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for studying in the Master's Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Master's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Master's Program in Life Science Innovation (Drug Discovery)

■ Master of Medical Science

Program Educational Objectives

The Master's Program in Life Science Innovation cultivates highly specialized professionals who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	Innovative medicines that solve unmet medical needs are required to meet the needs of society. In the field of drug discovery and development, the student should be able to “grasp the trends of medical needs in response to the times, acquire the ability to design drugs and verify the effects of drugs through regulatory science, organic chemistry, medicinal chemistry, and pharmacology, and have the basic skills for doctoral research in order to contribute to the creation of innovative drugs. and highly skilled professionals” .

Diploma Policy

The degree of Master of Medical Science is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Innovation ability: Ability to open up new developments in the areas of life science	①If the basic concepts about the areas of life science were widely gained and problems are interpreted from a higher perspective ②If one has the motivation to gain new skills and knowledge instead of being bound by one's area of expertise ③If the social needs in the areas of life science are understood ④If appropriate research plans are drawn up and carried out to solve Drug discovery development studies issues
	7. Specialized knowledge: Advanced knowledge and command of an area of expertise	①If leading-edge specialized knowledge about Drug discovery development studies was gained ②If gained knowledge was put to use to solve issues

<table>
<tr><td rowspan="2">Knowledge and Skills</td><td>Competences</td><td>Evaluation perspectives</td></tr>
<tr><td>8. Advanced practical English: Practical English proficiency that works in the areas of life science</td><td>①If an accurate description of one's understandings or opinions about problems in the areas of life science is provided in English
②If written research proposals, reports, etc. are created in English</td></tr>
<tr><td>Guidelines for Assessing Learning Outcomes</td><td colspan="2">The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods.
– Based on a curriculum designed to achieve the competences defined by the Master's Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion.
– At the end of the first year, Achievement Evaluation I is administered, through document review and an oral examination, to determine whether the student has attained the required level of the competences specified in the Diploma Policy.
– In the second year, Achievement Evaluation II and the Final Examination are administered, through document review and an oral examination, to verify that the student has fully achieved the competences specified in the Diploma Policy.</td></tr>
<tr><td>Evaluation Criteria for Degree Theses/ Dissertations</td><td colspan="2">【Level standards required for the degree thesis】 The degree thesis must be the results of work in which the diploma applicant took the initiative and must contain unprecedented research findings that contribute to make strides in the areas of Drug discovery development field. The degree thesis must be written logically and scientifically and must be constructed in an appropriate format as a degree thesis.
【Review board members】 A thesis is reviewed by an exclusive board formed by one chief reviewer and two or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the two or more sub-reviewers, one or more faculty members qualified to supervise the research in the Program must be included. The three or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the three or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included.
【Review method and review items, etc.】 The applicant is asked to explain their degree thesis content and then questioned by exclusive board members about what they have explained. During this examination, in which the applicant is required to make a presentation about their degree thesis logically and scientifically, the applicant is evaluated to see if they can convince the reviewers sufficiently by answering the reviewers' questions using the specialized knowledge of the areas of Drug discovery development field with insight.</td></tr>
</table>

Curriculum Policy

Under the education and research environment where there is the active participation by not only the faculty members of Tsukuba but also by collaborative graduate school faculty members from the research institutes or such which belong to the Tsukuba Life Science Promotion Association, students learn about unsolved issues of the society and get engaged in research activities to pursue to open up new strides in the areas of Drug discovery development field. The Master's Program in Life Science Innovation, whose purpose is to cultivate globally active highly specialized professionals, offers all lectures in English and organizes lectures and seminars taught by researchers who are active in the front lines and belong to overseas research institutes. To cultivate the ability to have the big picture in mind from a cross-disciplinary perspective, students benefit from the General Foundation Subjects which cover all-around basic concepts in the areas of life science. As part of the career training, the curriculum includes internship subjects and other subjects such as for learning the operations of research organizations, etc. Moreover, Major Subjects for cultivating the expert abilities in drug discovery development are also organized.

Curriculum Design Framework	− The curriculum of the Drug discovery development area consists of Major Subjects, General Foundation Subjects common to all six fields of the degree program (Disease Mechanism, Drug Discovery and Development, Food Innovation, Environmental Control, Bioinformatics, and Biomaterials), and common subjects for graduate students. In addition to the lectures in the Major Subjects, students receive research guidance on Drug discovery development in the laboratories to which they belong. − Competence of knowledge application is gained with master's thesis creation, etc. − Management competence is gained with “Regulatory Science”, etc. − Communication competence is gained with “Master's Research in Life Science Innovation”, etc. − Teamwork competence is gained with “Team Learning in Life Science Innovation (Basic)”, etc. − Competence in Internationality is gained with “Master's Life Science Innovation Seminar”, etc. − Innovation ability is gained with Major Subjects, “Master's Research in Life Science Innovation” , etc. − Specialized knowledge is gained with Major Subjects, etc. − Advanced practical English is gained with General Foundation Subjects, Major Subjects, etc.
Teaching and Learning Methods	− After learning how to gather information and understanding social needs under the supervision of supervisory faculty members, students draw up and carry out an appropriate research plan for solving drug discovery development issues and round up the results into research outcomes. − Students acquire English presentation skills in the process of presenting their research outcomes at the T-LSI student workshop and other events. − Through General Foundation Subjects and Graduate General Education Courses, students widely gain the basic concepts in the areas of life science and improve communication ability in English in order to be capable of using knowledge not bound by one's area of expertise. − Practical abilities as working individuals are cultivated through internships. − Specialized knowledge is gained through Major Subjects.

Admission Policy

Desired Student Profile	We seek candidates who possess the motivation to make innovations in the areas of Drug discovery development field and have the sufficient qualities to gain the specialized knowledge necessary to attain such innovations, and advanced practical English.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess bachelor's degree level knowledge necessary for learning in the Master's Program in Life Science Innovation and the ability to write about research backgrounds and future prospects in English. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation to drive innovation in the field of Drug Discovery and their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for studying in the Master's Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Master's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Education

■ Doctor of Philosophy in Education

Program Educational Objectives

The purpose of this program is to investigate both specific issues of education that must be addressed in the face of rapid social change and essential issues of education that must be resolved from a global perspective, based on a wide range of academic knowledge in pedagogy, and to disseminate the results of original research both domestically and internationally, and to foster pedagogical researchers and highly skilled professionals who can lead policy and practice reforms on an international scale.

Graduate Profile	– Graduates of the program will be able to engage in educational research at domestic and foreign educational universities, faculties, and educational research institutes and lead academic activities in their specialized fields. They are also capable of actively disseminating the latest results of educational research at international academic societies and international organizations and engaging in research exchange. – They can contribute to the formulation and implementation of educational policies of national and local governments and related organizations at home and abroad, and to the professional development of school faculty and staff, educational administration, and private organizations, using their research achievements.

Diploma Policy

The degree of Doctor of Philosophy in Education is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research skills: the ability to set essential research questions based on the latest expertise in the field of education and to carry out research projects independently.	①Can the student set an essential research agenda based on previous research in pedagogy? ②Does the student use research methods appropriate to the tasks set and produce academic research results?
	7. Specialized knowledge: Leading-edge and advanced specialized knowledge and command of the field of education	①Is the research output supported by pedagogical expertise in the student's field of study? ②Does the student show willingness to actively seek to absorb expertise in relevant educational sciences

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ethical view: Ethical view and ethical knowledge appropriate for researchers in the field of education and deep ethical knowledge about the specific area of expertise	①Does the student have the ethics and ethical knowledge appropriate for a researcher in the field of education? ②Does the student have ethics and ethical aspirations related to their specific field of study?
	9. Global-mindedness: the ability to see educational issues from an international perspective and disseminate solutions to domestic and international audiences	①Can the student accurately grasp domestic and international educational issues and set research agendas with an international perspective? ②Is the student actively seeking to disseminate their research results domestically and internationally?
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted by verifying and assessing the extent to which competences defined in the degree conferral policy have been acquired, using the “Achievement Evaluation Form (Rubric)”. Stage 1: In the first year, during the paper presentation session, the primary and secondary supervisors conduct a Stage 1 achievement review based on the rubric. Stage 2: In the second year, during the doctoral thesis interim presentation, the primary and secondary supervisors conduct a Stage 2 achievement assessment based on the rubric. Stage 3: In the third year, during the preliminary review meeting, the supervisor provides guidance to confirm the student's learning progress and prepare for the final achievement assessment. Final Stage: The thesis examination committee reviews the doctoral dissertation and simultaneously conducts the final achievement assessment.	

Evaluation Criteria for Degree Theses/ Dissertations	1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in field of education is clearly described. 2. If the dissertation contains original research outcomes contributory to make strides in field of education sufficiently enough to be presented as an academic paper. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. If research backgrounds, purposes, methods, results, discussions, conclusions, etc. are organized in a format appropriate as doctoral dissertation in the field of education. Those who wish to apply for a dissertation review must pass a preliminary examination in the degree program in advance. The dissertation review committee shall consist of three to five members. At least one member of the review committee shall be selected from outside the applicant's degree program (or faculty).

Curriculum Policy

The purpose of this program is to increase the research capacity required for research in specialized fields and to familiarize students with research methods, such as graduate students who have acquired specialized knowledge in education before entering the master's program, in-service teacher graduate students who have taught at universities, elementary, junior high, and high schools with a master's degree and engaged in educational research, and those who have enhanced their research interests while working in education administration or private organizations (companies, NPOs, etc.). The curriculum is organized for working graduate students with the aim of improving their research skills and becoming proficient in research methods in their field of specialization. The curricula are organized into Common General Foundation Subjects, Common Elective Subjects, and Major Subjects in order to systematically and effectively acquire the skills set forth in the diploma policy.

Curriculum Design Framework	– Through the common General Foundation Subjects students acquire education in the whole field of basic education and school education, and will be motivated to contribute to the development of educational research. – Through common elective courses, students will acquire the leadership skills necessary to plan and promote joint research, communication skills to facilitate academic discussions with overseas researchers, and the ability to search, read, and accurately examine appropriate literature and materials. – In Major Subjects, students receive guidance from faculty members in specialized fields related to their research themes to deepen their expertise, develop insight into research ethics issues, and acquire a variety of skills to present and discuss their research findings at professional conferences.

Curriculum Design Framework	– By taking these courses and participating in research activities outside the university, students will be able to become independent researchers and acquire the ability to see global educational issues from a broad perspective and consider solutions to them from an international perspective.
Teaching and Learning Methods	In the first year, students are required to take common General Foundation Subjects and research methods based on their own research topics to receive guidance in their specialized field of study. In the fall semester of their first year, they learn how to prepare their dissertations with guidance from faculty members outside their field of specialization at a presentation event for submitted papers. In their third year, they receive guidance on their doctoral dissertation from several faculty members under the supervision of a research guidance committee. Because the integration of subject specialization and pedagogy is required, especially in the field of subject pedagogy, students are instructed to actively take courses offered in degree programs established in other academic schools.

Admission Policy

Desired Student Profile	We seek individuals who are deeply interested in the real and fundamental problems of education, who have acquired basic knowledge of pedagogy and research methods in the master's program, who have a clear research agenda, and who are proactive and ambitious in their research. We seek individuals who have a broad perspective and deep specialized knowledge based on academic knowledge in pedagogy, and who have the ability to play an active role in professional societies at home and abroad in order to solve various educational issues.
Student Selection Process	Selection will be made twice a year (October and February) under the jurisdiction of the Admission Committee. Selection will be based on an examination of the content of the master's dissertation (or a dissertation in lieu of the master's dissertation) and an oral examination based on the research plan for the degree program. In addition, a special selection process for working adults will be implemented with a fixed number of applicants.

Learning Support Framework

Academic Support	The dual-advisor system creates greater objectivity in research supervision, and enables support for a wide range of consultation needs. Participation in doctoral thesis proposal presentations provides students with opportunities to objectively reassess one's research structure, and supports the further development of their research. Additionally, students may opt to participate in Faculty Development (FD) sessions, which provide opportunities to learn about research ethics and other essential aspects of scholarly work.
Opportunities for Peer Interaction	Student laboratories have been established to ensure opportunities for student interaction. Additionally, mechanisms are in place to provide opportunities for participation in activities such as doctorial thesis guidance sessions, thereby promoting cross-year interaction. Book discussion clubs and information-sharing opportunities that transcend research areas are also encouraged.

Opportunities for Student–Faculty Interaction	All faculty members responsible for the degree program participate in doctoral thesis guidance meetings, providing opportunities for students to interact with faculty members other than their primary advisor. Additionally, faculty-student discussion sessions are held to hear students' requests regarding the learning environment and other matters. Furthermore, opportunities for interaction with faculty members across disciplines are provided through student gatherings held by the academic division.

Approaches to Assuring and Enhancing Educational Quality

To ensure the rigor and quality of the curriculum, the Degree Program Curriculum Committee consolidates rubric evaluations, reviews, and analyzes them. Should improvements be necessary, the committee deliberates on measures at the Education Council.

Doctoral Program in Psychology

■ Doctor of Philosophy in Psychology

Program Educational Objectives

To cultivate psychology researchers and highly specialized professionals who, from a psychological perspective, identify new challenges concerning unresolved academic and social issues facing modern Japan and the world regarding human minds and behavior. To achieve this, they will collaborate across national borders, cultures, academic disciplines, and professional fields, guided by high ethical standards, to create new psychological theories, methodologies, and support technologies. This will enable the resolution of various conflicts and contribute to the development of Japan and the world.

Graduate Profile	Based on the educational objectives of above degree programs,we cultivate independent researchers who can master the latest psychological methodologies, knowledge, and skills. By incorporating interdisciplinary perspectives, they will independently define problems, generate insights, create new value, and excel on the international stage. Specifically, we cultivate highly specialized professionals and doctoral-level leaders who can creatively solve challenges faced in private companies, government agencies, clinical psychology settings, and other fields through advanced psychological research capabilities, thereby contributing broadly to society.

Diploma Policy

The degree of Doctor of Philosophy in Psychology is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Psychological understanding of human nature and problem-finding ability: Ability to scientifically understand human minds and behaviors, and independently discover unresolved psychological problems.	①Can you identify unresolved critical issues facing people in modern society, understand them from a psychological perspective, and independently formulate research questions? ②Have you comprehensively and systematically researched and grasped the current state and background of the independently formulated psychological issue both domestically and internationally?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Psychological problem-solving ability: Ability to adhere to research ethics, independently solve problems concerning human minds and behavior by utilizing psychological methodologies, theories, and findings, and contribute to contemporary society.	Can you adhere to research ethics and accomplish the following? ①Can you formulate and execute a well-structured, original solution to an unresolved, significant problem concerning human mind and behavior, utilizing psychological methodology and knowledge? ②Can you objectively observe and record the results of the executed solution and the findings gained, apply valid analysis, evaluate and revise the solution and findings, and contribute to contemporary society?
	8. Psychological clinical support ability: Ability to practice psychological clinical support as an independent practitioner, adhering to professional ethics while utilizing psychological knowledge, methodology, and clinical skills, and to support colleagues and junior practitioners.	Can you adhere to professional ethics and do the following? ①Can you practice psychological clinical support as an independent psychological clinician? ②Can you provide advice and support regarding psychological clinical support to colleagues and junior practitioners?
	9. Psychological information dissemination skills: The ability to contribute to and lead society by disseminating psychological knowledge, methods and results with high ethical standards	Can you adhere to research ethics and accomplish the following domestically and internationally? ①Can you summarise and inform psychological theories, methodologies, and research findings through papers and books? ②Are you attempting to influence society by communicating psychological theories, methodologies, and research findings to people?
	10. Multidisciplinary communication ability: Ability to leverage expertise in psychology to engage in discussion, collaborate, and lead professionals from other fields and occupations.	①As a psychology expert, can you communicate, discuss, and synthesize information in a way that professionals from other fields and disciplines can understand? ②As a psychology expert, can you collaborate with and lead professionals from other fields and disciplines while respecting them?

Guidelines for Assessing Learning Outcomes	①At each doctoral thesis review meeting (interim/preliminary) held during the academic year, all faculty members serving as primary and secondary advisors will evaluate each student's submitted materials, presentation, and Q&A session according to the rubric to determine their attainment of general competences and specialized competences. ②Two associate examiners will evaluate the candidate's achievement of general competences and specialized competences by comprehensively assessing the content of the doctoral dissertation submitted during the academic year, along with the presentation and Q&A session at the examination committee. Additionally, they will consider dissertation publication, conference presentations, applications for and acquisition of competitive funding, awards, etc., as supplementary indicators demonstrating learning outcomes.
Evaluation Criteria for Degree Theses/ Dissertations	Upon fulfilling all requirements stipulated in the Tsukuba University Graduate School Regulations, a candidate shall be judged to have passed if their thesis is deemed appropriate based on the following evaluation criteria and if they are confirmed to have met the two standards below in the final examination. ＜ Passing Standards for the Final Examination ＞ 1. The thesis sufficiently contains new academic insights within the field of psychology. 2. The candidate possesses advanced research capabilities sufficient to conduct research activities as an independent researcher in the field of psychology. <Evaluation Criteria> 1. The thesis clearly articulates the academic significance and positioning of the research within the field of psychology, based on an accurate understanding of domestic and international research trends and prior studies in related fields. Furthermore, the candidate must not have engaged in research misconduct (fabrication, falsification, plagiarism) or other harmful research activities throughout the entire thesis preparation process. 2. The paper contains original research findings contributing to the advancement of psychology, presented at a level and volume appropriate for publication as an academic paper. 3. The discussion of the research results is appropriate, and the conclusions are derived based on objective and logical reasoning. 4. The background, purpose, methods, results, discussion, conclusions, and references of the research are appropriately organized in a format and at a level suitable for a doctoral dissertation in the field of psychology. Applicants for dissertation review must have passed the preliminary review within the degree program beforehand. <Thesis Examination System> The thesis examination committee established to evaluate doctoral dissertations consists of one chair and at least three co-examiners. As a basic principle, two co-examiners are selected from the Psychology Degree Program (DP) and one from another degree program. With the approval of the Education Council, co-examiners may also be appointed from outside the university. <Thesis Evaluation Method> ①Evaluation of the Thesis Itself: All examiners who reviewed the thesis will grade it according to the rubrics for the four evaluation criteria listed above. ②Evaluation of the Presentation and Q&A at the Preliminary Review Meeting: All faculty members of the Psychology Degree Program at the rank of Primary Supervisor or Research Advisor Assistant and above will grade the content of the presentation, the manner of delivery, and the Q&A session at the preliminary review meeting according to the rubric. The overall evaluation of the doctoral thesis will be based on the combined results of evaluations ① and ② .

Curriculum Policy

In the Program in Psychology, students will deepen their knowledge, methodology, skills, and values across the entire field of psychology in order to question what the mind is as the key to human understanding and clarify the function of the mind, and will develop problem-solving skills that can contribute to society as experts in the human sciences, while maintaining diverse and close relationships with adjacent fields and multidisciplinary research.

Curriculum Design Framework	Doctoral Program in Psychology offers common courses shared by both the Psychological Basic Science Subprogram and the Psychological Clinical Studies Subprogram. Additionally, each subprogram offers specialized courses specific to that subprogram. By completing the common courses “Advanced Research in Psychology 1”, “Advanced Research in Psychology 2”, “Advanced Research in Psychology 3”, and “Applied Statistics in Psychology”, students primarily acquire psychological understanding of human nature and problem-identification skills. The practical courses within the common subjects— “Psychology Experiment Practicum”, “Psychology Research Management Practicum 1”, and “Psychology Management Practicum 2” —guide psychology students through statistical exercises and group research. Completing these courses primarily develops clinical psychological practice skills, psychological information dissemination capabilities, and interdisciplinary communication skills. The seminar courses within the common subjects— “Special Research in Psychology D1” and “Special Research in Psychology D2” — “Special Research in Psychology D3” are seminar courses for doctoral thesis guidance by the primary and secondary supervisors. Through completing these courses and participating in presentations and Q&A sessions during review meetings such as the concept presentation, interim presentation, and preliminary examination, students acquire psychological understanding of human nature, problem-identification skills, psychological problem-solving abilities, psychological information dissemination skills, and interdisciplinary communication skills. In addition, courses such as “Psychology English Presentation 1”, “Psychology English Presentation 2”, and “Psychology English Presentation 3” are offered to enhance research communication skills in English, particularly for international conferences. The Psychological Basic Science Subprogram includes “Psychological Basic Science English 1” and “Psychological Basic Science English 2”, which grant credits for activities at international conferences and completion of overseas on-demand courses, fostering international competence as a general competence. Furthermore, the “Psychology Internship” course is offered to enhance all five specialized competences in real-world settings. Within the Clinical Psychology Subprogram's specialized courses, students acquire advanced specialized knowledge in clinical psychology through the lecture course “Special Topics in Clinical Psychology D”. They gain practical clinical skills specifically through the practicum courses “Clinical Psychology Practicum D1” and “Clinical Psychology Practicum D2”. Evaluation for each course is based on multiple-choice tests, reports, other deliverables, practical skills, and behavioral observations during practicum sessions. The specific evaluation methods are detailed in each course's syllabus.

Teaching and Learning Methods	The learning methods in the Psychology Degree Program (Doctoral Program) are broadly categorized into lectures, seminars, and practical training. Lecture courses include “Advanced Research in Psychology 1”, “Advanced Research in Psychology 2”, “Advanced Research in Psychology 3”, and “Special Topics in Clinical Psychology D”. These courses involve lectures and Q&A sessions led by the instructor, followed by discussions among students. Seminar courses include “Special Research in Psychology D1”, “Special Research in Psychology D2”, “Special Research in Psychology D3”, “Psychology English Presentation 1”, “Psychology English Presentation 2”, and “Psychology English Presentation 3”. In these seminars, students take the lead in proposing topics, presenting assigned sections, conducting demonstrations, and leading discussions. Among the practicum courses, “Psychology Experiment Practicum”, “Psychology Research Management Practicum I”, and “Psychology Research Management Practicum II” provide graduate students with experience instructing undergraduate psychology students in statistical exercises and group research. The Clinical Psychology Subprogram's “Clinical Psychology Practicum 1” and “Clinical Psychology Practicum 2” provide experience in psychological clinical activities primarily at the University of Tsukuba Counseling Center, the University of Tsukuba Child Counseling Center, or external facilities, under faculty supervision. The distinctive curriculum features of the Psychology Degree Program are as follows: ①“Psychology Internship” grants credits for internship experience at companies or organizations meeting specific criteria. ②“Fundamental Psychological Science English 1” and “Fundamental Psychological Science English 2” grant credits for presentations and activities at international conferences meeting specific criteria, or for completing courses offered by overseas universities. ③Achievement levels for general competences and specialized competences are assessed through self-evaluation upon admission, followed by self-confirmation using the TWINS achievement assessment support system at the time of advancement to the second year, advancement to the third year, and preliminary examination. The level of competence achievement is shared with the student's advisor at each stage, who provides guidance and advice on course selection and other matters. ④For doctoral thesis supervision, a co-advisor is selected early after enrollment. Intensive research guidance is provided through a joint supervision system involving both the primary advisor and the co-advisor. ⑤The degree program as a whole establishes a three-stage review process—conceptual, interim, and preliminary—to ensure the quality of doctoral theses. The Concept Presentation is held in the first year to review the overall thesis concept. The Interim Presentation is held in the second year for those who passed the Concept Presentation, reviewing progress and other aspects. The Preliminary Review is typically held in the third year for those who passed the Interim Presentation and who meet the requirements for reference papers, competence achievement level, and expected fulfillment of graduation requirements. It assesses whether the thesis meets the standards defined in the internal regulations.

Admission Policy

Desired Student Profile	The Doctoral Program in Psychology seeks individuals aspiring to become researchers, university faculty members, highly specialized professionals, or doctoral-level leaders in psychology. We welcome not only recent graduates of master's programs in psychology-related fields, but also professionals already engaged in psychology-related specialized work.
Student Selection Process	Admission is conducted through both the general entrance examination and the internal advancement entrance examination. The general entrance examination selects candidates based on specialized foreign language (English) proficiency and an oral examination. It comprehensively evaluates foreign language ability relevant to the field of study, research capabilities for thesis writing, and communication skills. The internal advancement entrance examination selects particularly outstanding students from the Psychology Degree Program (Master's Program) through an oral examination, comprehensively evaluating research capabilities for thesis writing and communication skills.

Learning Support Framework

Academic Support	By the following methods, effective learning support is being provided. ①By adopting a dual instructor system, we ensure that students have the opportunity to receive guidance from different perspectives than those of their main instructors. ②A student support team is formed by the degree program leader, primary and secondary instructors, and student counseling staff, providing psychological adaptation support in a manner that is optimal for each individual student. ③A career support committee has been established to provide information on various career support initiatives within the university.
Opportunities for Peer Interaction	Two secondary examiners will assess the level of achievement in general competences and specialized competences by comprehensively evaluating the content of the doctoral dissertation submitted during the academic year, along with the presentation and Q&A during the examination committee. They will also take into account dissertation publication, conference presentations, applications for and acquisition of competitive funding, awards, etc., using these as supplementary outcome indicators to demonstrate learning achievements.

Opportunities for Student–Faculty Interaction	The following methods are employed to provide opportunities for interaction with faculty members, aiming to enhance learning motivation and research quality. ①All faculty members responsible for the degree program participate in thesis guidance meetings and thesis review meetings. By posing questions and offering advice to each student, they provide opportunities for research exchange with faculty members other than the student's primary advisor. ②Student-Faculty Consultation Meetings are held to broadly gather student feedback on education, research guidance, clinical psychology practicums, and student life within the Psychology Degree Program, enabling the program to strive for improvement. ③Participation in the “Student Gathering” hosted by the Faculty of Arts and Sciences is encouraged to promote interaction with faculty members across disciplines. ④Faculty members participate in student-organized social events, such as new student welcome parties, to foster interaction.

Approaches to Assuring and Enhancing Educational Quality

At the end of each academic year, the Degree Program Educational Outcomes Review Committee convenes. Based on the evaluation results of the doctoral dissertation examination committee and the status of student research activities, it confirms the educational outcomes for each subprogram and for the degree program as a whole. These results are analyzed over time to identify educational strengths and areas for improvement. Necessary improvement measures are then formulated and implemented to ensure educational quality assurance.

Doctoral Program in Disability Sciences

■ Doctor of Philosophy in Disability Sciences

Program Educational Objectives

This program trains researchers who can conduct advanced research on various topics related to disabilities and provides leading education in the field of disability sciences from a global perspective.

Graduate Profile	To prepare professionals who can provide expert solutions to problems related to people with disabilities from a scientific perspective. Specifically, graduates will have a broad knowledge of disabilities and be able to contribute to problem-solving, as well as identify research issues from real-world problems and promote research plans and their implementation with collaborators to solve those issues.

Diploma Policy

The degree of Doctor of Philosophy in Disability Sciences is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research creativity: The ability to discover issues related to disability sciences and create original research	①Can the student identify and formulate research questions related to disability sciences from a professional standpoint? ②Can the student solve problems related to disability sciences with an original research plan?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Ability to plan and execute research: The ability to plan and execute cutting-edge research on disability sciences	①Can the student develop a long-term research plan for an important issue related to disability sciences? ②Can the student research disability sciences based on a research plan they developed and modify it as appropriate?
	8. Research dissemination ability: The ability to disseminate research findings related to disability sciences through academic journals	①Can the student present and discuss their own research findings on disability sciences in class or other settings? ②Has the student published the findings of their own research on disability sciences in an academic journal?
	9. Ability to understand and communicate about disabilities: Advanced and extensive knowledge of disability sciences and the ability to teach it to others	①Can the student clearly and logically describe the nature of their specialized knowledge in disability sciences?
	10. Ethical understanding and attitude: The ability to implement and teach others the ethical procedures necessary for research and practice in disability sciences	①Has the student completed a research ethics application? ②Can the student acquire the ethical values and knowledge necessary for research on disability sciences and communicate them clearly?

Guidelines for Assessing Learning Outcomes	The doctoral dissertation is highly valued as the culmination of learning achievements. The comprehensive evaluation of students' attainment of learning outcomes, based on the degree-awarding policy, is conducted through the process of dissertation writing and the dissertation design, interim, and final presentations. The doctoral dissertation is examined and evaluated by a Dissertation Examination Committee composed of four members: one main examiner and three co-examiners. The evaluation is based on the criteria for the degree thesis and the knowledge and skills (competences) stipulated in the degree-awarding policy, specifically assessing whether students: – Produce new knowledge or show potential contributions to future society (Creation of Knowledge) – Set and solve research problems with broad perspective (Management Ability) – Present research content and results clearly and logically, and respond accurately to questions (Communication Ability) – Demonstrate leadership by cooperating with collaborators and stakeholders to achieve research goals (Leadership) – Have the awareness and language ability to contribute internationally, gather global information, and disseminate findings (International Competence) – Generate original research ideas in disability science (Research Creativity) – Plan and conduct advanced research in disability science (Research Planning and Execution) – Publish research results in academic journals and other outlets (Research Dissemination) – Explain specialized knowledge of disability science clearly and logically (Understanding of Disability) – Conduct research appropriately with ethical awareness and knowledge (Ethics and Attitude) These evaluations are reflected in course assessments, including: – 1st year: Disability Science Research Practice (compulsory, 1 credit), Seminar I (compulsory, 1 credit), Overseas Research Activity I (elective, 1 credit) – 2nd year: Seminar II (compulsory, 1 credit), Overseas Research Activity I / II (elective, 1 credit each) – 3rd year: Seminar III (compulsory, 1 credit), Overseas Research Activity I / II (elective, 1 credit each)

Evaluation Criteria for Degree Theses/ Dissertations	– The Research Guidance Committee, consisting of 1 academic advisor (research supervisor, chairman) and 2 assistant academic advisors (committee members), will guide doctoral dissertations until the dissertation is submitted. The submitted dissertation will be reviewed and evaluated by a Dissertation Review Committee comprising 1 primary reviewer and 3 secondary reviewers. At least 1 member of the review committee is selected from the faculty not in charge of this program. – Evaluation of the doctoral dissertation will be made comprehensively from the following perspectives, based on the peer review of the submitted dissertation, the content of the final presentation, and the oral examination results. 1. The significance and position of the research in the field of disability sciences is clearly expressed based on an understanding of past research and research trends in relevant fields both in Japan and internationally. 2. The results of original research that contributes to the development of the field of disability sciences are included in an amount appropriate for an academic paper. 3. The reliability of the research findings has been adequately verified based on sufficient knowledge of research integrity. 4. The discussion of the research findings is valid, and the conclusion is based on objective evidence. 5. The research background, objective, method, results, discussion, and conclusion are organized in a format appropriate for a doctoral dissertation in the field of disability sciences.

Curriculum Policy

The Doctoral Program in Disability Sciences fosters researchers or highly skilled professionals with research skills who can independently carry out research to understand the characteristics of people with disabilities and overcome or eliminate the difficulties associated with them, focusing on their respective areas of specialization, and disseminate the results of their research both domestically and internationally.

Curriculum Design Framework	– Through major coursework (research in a specialized field), students will acquire ethical understanding and attitude, the ability to plan and execute research, research creativity, and research dissemination ability by participating in activities such as individual and group discussions on research topics with their academic advisor and two assistant academic advisors. – Through the foundational course Disability Sciences Research and Practice, students will acquire the ability to understand and communicate about disability (knowledge and research methods) by assisting in classes in the College of Disability Sciences under the guidance of the faculty member in charge of the class. – Through the foundational course Overseas Research Activities, students will acquire research dissemination ability by presenting research at international conferences and participating in research exchange with graduate students at overseas universities and other partner institutions.

Curriculum Design Framework	– Through research ethics workshops, students will acquire ethical understanding and attitude. – Through presentations regarding their doctoral dissertation, students will acquire research dissemination ability.
Teaching and Learning Methods	The degree program curriculum consists of courses for the preparation of a doctoral dissertation. Research courses are structured within specialized fields; graduate students must take one group of research courses (Research I, II, and III) from their chosen specialization as a compulsory subject. In all specializations, students must take part in a design presentation in Research I (October of the first year), submit an academic paper in Research II, and take part in a mid-term presentation in Research III (June of the third year). In the spring semester of the first year, a research ethics workshop is held separately from classes to train attitudes toward research ethics and specific research ethics review procedures. Then, in Disability Sciences Research and Practice in the fall semester of the first year, students develop the teaching skills by working in the research methods for their own specialized field as class assistants for courses in the College of Disability Sciences under the guidance of the faculty member in charge of the class. In addition, through presentations at international conferences and classes for research exchange seminars with graduate students of international partner universities (Overseas Research Activities), students develop the communication ability, international character, and research dissemination ability necessary for a researcher or highly skilled professional with research skills.

Admission Policy

Desired Student Profile	We are seeking individuals with research skills of disability sciences, possessing a strong interest in cutting-edge research in Japan and abroad, and aiming to become researchers or highly skilled professionals with research skills who have global perspectives in fields such as education, welfare, clinical practice, public administration, or international cooperation in the future.
Student Selection Process	– Evaluation will be based on the score of the English external examination, the master's thesis review, and an oral presenation on their research plan and oral presentation. – Through the entrance examination, the applicant's English proficiency and research skills related to disability sciences will be reviewed.

Learning Support Framework

Academic Support	– Doctoral supervision is provided by one main advisor and two sub-advisors, offering support for study skills, time management, and presentation skills from faculty with diverse expertise. – Four dissertation presentation sessions are held annually (June, October, November, February). At each session, students may give design, interim, or final presentations (internal pre-defense), depending on their preparation and progress. – As the standard study plan, students are guided to give the design presentation in October of the 1st year, the interim presentation in June of the 3rd year, and the final presentation in November of the 3rd year. – Support for learning skills such as information gathering, analysis, logical thinking, and writing is provided through seminars, including literature reviews, progress checks, and research presentations. – Each year, students and advisors are informed of the JST “Next-Generation Researcher Challenging Research Program”, and students are encouraged to apply. – The program provides independent financial support to partially cover Article Processing Charges (APCs) and English editing costs, thereby facilitating the international dissemination of research by graduate students.
Opportunities for Peer Interaction	– For international exchange, students are given opportunities to interact with partner universities in Asia and North America through CIC partnerships and inter-departmental agreements, raising international awareness and motivation for global research. – At the end of each year, a joint student meeting for master's and doctoral students is held to share information on thesis writing, job hunting, and student life. – An orientation event “Building Your Own Career with Disability Science” is held for students considering continuing to the doctoral program. It includes talks and networking with graduates, providing opportunities to think about careers after degree completion. – In graduate school guidance sessions, graduates give talks on career paths after degree completion and join discussions with current and prospective students. – In common graduate courses organized by this program (BHE), students with diverse expertise form teams to propose new projects, encouraging interaction, motivation, and solutions to social issues.

Opportunities for Student–Faculty Interaction	– In the doctoral supervision system, each student is guided by one main advisor and two sub-advisors, providing opportunities to work with faculty from diverse fields. – Participation in joint research meetings and faculty-led projects gives students opportunities for interaction and motivation in research. – Networking events with graduates active in society provide chances for career and research consultations. – In some research areas, students join collaborative projects as research assistants (RAs) or co-researchers. – Upon graduation, students are asked to provide an active email address to build an alumni network. – At the end of each year, program-specific student surveys and meetings are held to exchange opinions on education and research guidance.

Approaches to Assuring and Enhancing Educational Quality

– Graduates serve as external evaluation committee members, providing feedback and engaging in discussions to improve education and research guidance. This external input guides quality assurance and educational improvement.
– At the end of each year, program-specific student surveys and meetings exchange opinions on education and guidance. The results are used to inspect activities and plan improvements for subsequent years.
– The program facilitates career paths where graduates of the master's program, after gaining experience as highly skilled professionals, return to the doctoral program to resume research with practical insights. This assures educational quality and strengthens the framework for achieving program objectives.

Doctoral Program in Counseling Science

■ Doctor of Philosophy in Counseling Psychology

Program Educational Objectives

The program provides comprehensive fundamental education in counseling for researchers and professionals in the counseling field, and fosters highly-skilled professionals and university faculty (researchers) who can contribute to society by acquiring the results and methodologies of international and interdisciplinary research, and solving various problems in the workplace and society scientifically, practically, and developmentally in cooperation with other professions.

Graduate Profile	To develop human resources who can set up original and excellent themes in the field of counseling science, write papers with a systematic logical structure using appropriate methods, obtain high academic reputation in the relevant academic field, apply the results to society, and conduct research that contributes to society.

Diploma Policy

The degree of Doctor of Philosophy in Counseling Phychology is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research skills: Ability to set up advanced research topics based on the latest expertise in the counseling science field, and to carry out research plans independently.	①Being able to formulate an advanced research agenda based on the latest expertise in the field of counseling science ②Independently carry out a research plan based on current expertise in the field of counseling science

	Competences	Evaluation perspectives
Knowledge and Skills	7. Expertise: Advanced and specialized knowledge and operational skills in the field of counseling science	①Acquired advanced and specialized knowledge in the field of counseling science ②Mastery of advanced operational skills in the field of counseling science
	8. Ethics: ethics and ethical knowledge appropriate for a researcher or a highly skilled professional in the counseling science field, and in-depth ethical knowledge of the specific field of study.	①Mastery of ethics and ethical knowledge appropriate for a researcher or advanced professional in the field of counseling science or highly skilled professional in the field of counseling science. ②In-depth ethical knowledge of the specific field of study in the counseling sciences.
Guidelines for Assessing Learning Outcomes	− Achievement evaluation is assessed based on the “Achievement Evaluation Form”, confirming and evaluating the acquisition of competences according to the Diploma Policy at each stage. − Regarding the “Research Plan Presentation” held during the spring semester of the first year, the primary supervisor and other faculty members will conduct assessment, review, and guidance on the research preparation status based on the presentation materials and content. − Regarding the “Literature Review Presentation” conducted during the autumn semester of the first year, the primary supervisor, secondary supervisor, and other faculty members will conduct an assessment, review, and guidance of the theoretical examination section of the doctoral dissertation based on the presentation materials and content. Additionally, the supervisor will conduct a Stage 1 Achievement Assessment to review and assess the student's progress and provide guidance. − During the spring and autumn semesters of the second year, two 'research progress presentations' will be held. Based on the presentation materials and content for each session, the primary supervisor, secondary supervisor, and other faculty members will conduct assessment, review, and guidance regarding the empirical examination and conclusion sections of the doctoral dissertation. Additionally, at the end of the second year, the primary supervisor conducts a second-stage achievement review, which involves assessment of progress, evaluation, and guidance. − During the Spring Semester of the third year, the 'research progress presentation' will be conducted. Based on the presentation materials and content, the primary supervisor, secondary supervisor, and other faculty members will conduct assessment, review, and guidance regarding the theoretical examination section of the doctoral dissertation.	

Guidelines for Assessing Learning Outcomes	– In the third year, a preliminary review committee consisting of the primary supervisor and two secondary supervisors will review the doctoral dissertation and judge it through an oral examination. Upon passing the preliminary review committee, the thesis is then reviewed by the primary supervisor and three secondary supervisors (one of whom must be affiliated outside the degree program and approved by the Academic Council as possessing sufficient expertise for doctoral thesis review). A final review committee is conducted, and the thesis is judged through an oral examination. Additionally, at the end of the third year, the supervisor conducts a Stage 3 Achievement Review, which involves assessment, review, and guidance of the student's progress.
Evaluation Criteria for Degree Theses/ Dissertations	1. The significance and position of the relevant research in the field of counseling science should be clearly stated based on an understanding of domestic and international research trends and previous research in related fields. 2. The doctoral dissertation must consist of multiple studies conducted with a consistent research purpose. 3. Original research results that contribute to the development of the counseling science field should be included in an amount suitable for publication as an academic paper. 4. The reliability of the research results should be sufficiently verified based on sufficient knowledge of research fairness. 5. The discussion of the research results is reasonable and the conclusions are based on objective evidence. 6. The background, purpose, methods, results, discussion, and conclusions of the research must be summarized in a format appropriate for a doctoral dissertation in counseling science. Those who wish to apply for the examination of the dissertation must pass the preliminary department examination in advance. Standard to be met by the thesis: Both the Chair and Co-Chairs must judge that the thesis meets 1-6 above. Review committee members: 1 Chair, 3 Co-Chairs (including at least 1 member from outside the degree program) Examination method: Doctoral dissertation, thesis presentation, and oral examination are judged by the Chair and Co-Chairs based on the academic paper standards. Examination items: Doctoral dissertation, thesis presentation, and oral examination

Curriculum Policy

Based on a combined coursework-research-work curriculum policy optimized for working adults, the program provides flexible and organically related guidance on dissertation preparation and dissertation examination, leading up to degree completion.

Curriculum Design Framework	Education and research guidance will be provided to cultivate a broad basic background in the field of counseling science, a broad perspective, and general knowledge and abilities to support activities in various fields of society, as well as research skills, specialized knowledge, and ethical views in developmental psychology, social psychology, clinical psychology, industrial/organizational psychology, educational psychology, and criminal psychology. In principle, students must be enrolled for at least three years. Students are required to take 6 credits of required courses in each course to build a conceptual understanding and academic foundation of counseling science, and 4 credits of elective courses based on their research topics. Students must take at least 4 credits from elective courses designated by their academic advisor and secondary advisor, and receive the necessary research guidance and conduct research to prepare their doctoral dissertation. They are required to pass the preliminary examination and final examination of the doctoral dissertation. In the doctoral dissertation examination, the student will be actively evaluated not only on the basis of scientific logic, but also on the basis of practical issues, usefulness in the field, effectiveness, and novelty. It is recommended that students take one credit from the common specialized foundation courses of the Faculty of Engineering to contribute to the cultivation of fundamental knowledge, broad perspectives, and general knowledge and abilities in related fields, with the major field of study as the axis. Students who pass the final examination will be awarded the degree of “Doctor of Counseling Science” .
Teaching and Learning Methods	In the first year, students are required to give a presentation on their research plan, a presentation on literature research necessary for writing a doctoral thesis, and submit a list of references. Students are required to report on the progress of their doctoral thesis research at the Progress Report Meeting and Interim Presentation in the second year, and Progress Report Meeting in the third year. In addition, students are required to participate in seminars given by their supervisors in principle, and seek guidance from their secondary supervisors after each debriefing session.

Admission Policy

Desired Student Profile	The purpose of this program is to develop individuals who can make full use of their positions and experiences as working adults and who can independently and enthusiastically conduct research and inquiry on practical issues related to counseling science using counseling science techniques. In particular, students who have work experience in companies, school education (including special needs education), psychology-related fields, medical and health institutions, welfare facilities and consultation facilities, training schools for psychology professionals, vocational support centers and companies employing people with disabilities, and government and administrative agencies, and who are highly interested in creating new research and practical clinical practice are desirable. The ideal candidate will have a strong interest in creating new research and clinical practice.
Student Selection Process	In principle, applicants must have at least two years of work experience before admission. Successful applicants will be announced in early December.

Learning Support Framework

Academic Support	– The program provides opportunities to participate in presentations other than the student's own academic year, helping them objectively reassess their research framework and supporting deeper understanding. – All faculty members, led by the supervisor, will establish a system enabling individual consultations regarding issues specific to working graduate students, such as balancing work and studies, and family circumstances including childcare and caregiving. – The program prepares data analysis rooms and graduate student research labs to enable working graduate students to balance their employment with their studies and research activities. – To prevent disruption to their work, intensive lectures for working graduate students are generally held on weekends under the program. – The program regularly holds faculty development sessions (twice a year) that provide a broad perspective, including presentations from other degree programs, on various topics such as how to synthesize research outcomes including paper submissions and examples of career development after graduation. – The program provides working graduate students with dedicated instructors separate from faculty members to support the acquisition of knowledge and skills in various research methods that are considered difficult to learn on their own. This support arrangement is provided to facilitate smooth mastery.
Opportunities for Peer Interaction	– The program provides opportunities for students to participate in presentations other than the student's own academic year, integrating into the curriculum chances for interaction among students across different grades. – The program provides a forum for mutual Q&A during the aforementioned FD program, creating opportunities for interaction among students.

Opportunities for Student–Faculty Interaction	– At each presentation session, all faculty members responsible for the degree program participate, ensuring opportunities for discussion and providing chances for interaction with faculty members other than the student's primary supervisor. – Furthermore, after the presentations, all faculty members, led by the secondary supervisor, engage in follow-up guidance to ensure students have opportunities to smoothly continue their learning and research activities. – The program holds an annual student-faculty roundtable discussion and actively incorporates feedback from students.

Approaches to Assuring and Enhancing Educational Quality

- Students' study progress is reviewed at the program management meeting, and improvement measures are considered as necessary.
- At the program management meeting, students' learning outcomes are assessed, and the validity of the curriculum and the appropriateness of instruction are verified.
- Program-wide educational issues are discussed in FD activities in which all degree-program faculty members participate.

Doctoral Program in Rehabilitation Science

■ Doctor of Philosophy in Rehabilitation Science

Program Educational Objectives

In this course, interdisciplinary highly specialized professionals shall be trained, who provide comprehensive and fundamental education for the researchers and specialized professionals relating to rehabilitation, acquire international/interdisciplinary research outcomes and methodology in collaboration with other occupations, scientifically/practically/developmentally solve various problems in their workplace and society and contribute to society.

Graduate Profile	In this Degree Program, the human resources shall be trained who have comprehensive and inclusive ability necessary for correspondence and development in a broad view relating regarding various problems which working individuals in-service encounter at their workplaces and whose solutions are promptly required. In comprehensive and inclusive rehabilitation area, highly specialized professionals and faculty members with high practical R&D ability relating to scientific solution of frontline problems shall be especially trained.

Diploma Policy

The degree of Doctor of Philosophy in Rehabilitation Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in areas of rehabilitation.	①Can the student set up an advanced research project on rehabilitation and communicate the plan appropriately to others? ②Is the student able to publish the results of their advanced research on rehabilitation in domestic and international professional journals? ③Can the student complete an advanced doctoral dissertation on rehabilitation and present the results appropriately?
	7. Specialized knowledge: Leading-edge and advanced specialized knowledge and command areas of rehabilitation	Can the student acquire advanced, highly specialized knowledge about rehabilitation and gain the ability to disseminate it by themself?
	8. Ethical view: Ethical view and ethical knowledge appropriate for researchers areas of rehabilitation and deep ethical knowledge about the specific area of expertise	Is the student able to gain advanced research skills, ethics and in-depth ethical knowledge about rehabilitation?
Guidelines for Assessing Learning Outcomes	– Achievement evaluation is assessed based on the “Achievement Evaluation Form”, confirming and evaluating the acquisition of competences according to the Diploma Policy at each stage. – Regarding the “Research Plan Presentation” held during the spring semester of the first year, the primary supervisor and other faculty members will conduct assessment, review, and guidance on the research preparation status based on the presentation materials and content. – Regarding the “Literature Review Presentation” conducted during the autumn semester of the first year, the primary supervisor, secondary supervisor, and other faculty members will conduct an assessment, review, and guidance of the theoretical examination section of the doctoral dissertation based on the presentation materials and content. Additionally, the supervisor will conduct a Stage 1 Achievement Assessment to review and assess the student's progress and provide guidance. – During the spring and autumn semesters of the second year, two 'research progress presentations' will be held. Based on the presentation materials and content for each session, the primary supervisor, secondary supervisor, and other faculty members will conduct assessment, review, and guidance regarding the empirical examination and conclusion sections of the doctoral dissertation. Additionally, at the end of the second year, the primary supervisor conducts a second-stage achievement review, which involves assessment of progress, evaluation, and guidance.	

Guidelines for Assessing Learning Outcomes	– During the Spring Semester of the third year, the 'research progress presentation' will be conducted. Based on the presentation materials and content, the primary supervisor, secondary supervisor, and other faculty members will conduct assessment, review, and guidance regarding the theoretical examination section of the doctoral dissertation. – In the third year, a preliminary review committee consisting of the primary supervisor and two secondary supervisors will review the doctoral dissertation and judge it through an oral examination. Upon passing the preliminary review committee, the thesis is then reviewed by the primary supervisor and three secondary supervisors (one of whom must be affiliated outside the degree program and approved by the Academic Council as possessing sufficient expertise for doctoral thesis review). A final review committee is conducted, and the thesis is judged through an oral examination. Additionally, at the end of the third year, the supervisor conducts a Stage 3 Achievement Review, which involves assessment, review, and guidance of the student's progress.
Evaluation Criteria for Degree Theses/ Dissertations	1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in rehabilitation science field is clearly described. 2. Right amount of original research outcomes that contribute to development in and outside Japan of rehabilitation science field is contained as master's thesis. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for research outcomes is valid and conclusion is based on objective evidence. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as dissertation of rehabilitation science field. Level standards required for the degree thesis: Both chief supervisor and sub supervisor(s) can judge that master's thesis has satisfied the above-mentioned 1 to 5. Review board members: 1 primary examiner, 3 secondary examiners Examination Method: doctoral dissertation, dissertation presentation, and oral examination, judged comprehensively by primary and secondary examiners.

Curriculum Policy

Along with advanced research skills, expertise, and ethics across the four fields of rehabilitation (Medical Rehabilitation, Special Needs Education, Social Rehabilitation, and Vocational Rehabilitation), education and research guidance will be provided to cultivate interdisciplinary and advanced professionals based on interdisciplinary rehabilitation and general-purpose knowledge and abilities to train teachers of higher education, such as those in professional rehabilitation training schools. Based on a Curriculum Policy of combined coursework and research work optimized for working professionals, the program provides a flexible and organically related instruction in dissertation writing and dissertation review leading up to the degree.

Curriculum Design Framework	In order to contribute to the cultivation of basic knowledge, a broad perspective, and versatile knowledge and abilities in related rehabilitation fields, students are required to take Basic Lecture on Rehabilitation Sciences, Seminar of Rehabilitation Sciences, and Special Lecture on Rehabilitation Sciences, as well as one credit from the Inter-disciplinary Foundation Courses in the Graduate School of Science to contribute to the acquisition of knowledge in a broader range of related fields, based on the student's field of expertise. Specific subjects to be registered and system to deploy sub supervisor(s) shall be determined based on research plans career plans of individual students etc. As a general rule, students must be enrolled in the program for a total of three years or more. Complete 6 credits of compulsory subjects that build up a conceptual understanding and academic foundation of rehabilitation science, as well as 4 or more credits of elective subjects that are highly elective and suited to the research topic. Complete at least 4 credits of elective courses designated by the advisor and secondary advisor, receive research guidance and training necessary for the preparation of the doctoral dissertation. Pass the preliminary and final examinations for the doctoral dissertation. In the doctoral dissertation review, not only scientific logic, but also practical problem-setting, usefulness, effectiveness, and novelty in the field will be actively evaluated. The degree of “Doctor of Rehabilitation Science” is awarded to those who pass the final exam.
Teaching and Learning Methods	In the first year, students are required to give a presentation on their research plan, a presentation on research necessary for writing their doctoral dissertation, and to submit a list of references required for the preparation of the doctoral dissertation; (1) Progress report meeting in the second year, (2) Midterm presentation meeting in the third year, and (3) Progress report meeting in the third year to report the progress of doctoral dissertation research. In addition, students are expected to participate in the seminars of their advisors and seek the guidance of their secondary advisors after each report meeting.

Admission Policy

Desired Student Profile	The purpose of this program is to develop individuals who can make full use of their positions and experiences as working adults and who can independently and enthusiastically conduct research and inquiry on practical issues related to rehabilitation science using rehabilitation science techniques. It is particularly desirable to have work experience in medical and health care institutions, welfare facilities, school education (including special needs education), rehabilitation professional training schools, vocational support centers and companies that employ people with disabilities, and government and administrative agencies, and to have a strong interest in the creation of new research and clinical practice.
Student Selection Process	As the entrance examination will be held in November, information on the examination will be released in May, and the deadline for application is early October. Successful applicants will be announced in early December.

Learning Support Framework

Academic Support	– The program provides opportunities to participate in presentations other than the student's own academic year, helping them objectively reassess their research framework and supporting deeper understanding. – All faculty members, led by the supervisor, will establish a system enabling individual consultations regarding issues specific to working graduate students, such as balancing work and studies, and family circumstances including childcare and caregiving. – The program prepares data analysis rooms and graduate student research labs to enable working graduate students to balance their employment with their studies and research activities. – To prevent disruption to their work, intensive lectures for working graduate students are generally held on weekends under the program. – The program regularly holds faculty development sessions (twice a year) that provide a broad perspective, including presentations from other degree programs, on various topics such as how to synthesize research outcomes including paper submissions and examples of career development after graduation.
Opportunities for Peer Interaction	– The program provides opportunities for students to participate in presentations other than the student's own academic year, integrating into the curriculum chances for interaction among students across different grades. – The program provides a forum for mutual Q&A during the aforementioned FD program, creating opportunities for interaction among students.

Opportunities for Student–Faculty Interaction	– At each presentation session, all faculty members responsible for the degree program participate, ensuring opportunities for discussion and providing chances for interaction with faculty members other than the student's primary supervisor. – Furthermore, after the presentations, all faculty members, led by the secondary supervisor, engage in follow-up guidance to ensure students have opportunities to smoothly continue their learning and research activities. – The program holds an annual student-faculty roundtable discussion and actively incorporates feedback from students.

Approaches to Assuring and Enhancing Educational Quality

Student progress is reviewed at Rehabilitation Science Degree program and curriculum meetings monthly, where improvement measures are discussed as needed to prevent potential issues.

Doctoral Program in Neuroscience

■ Doctor of Philosophy in Neuroscience

Program Educational Objectives

The program aims to cultivate researchers and highly skilled professionals in neuroscience who possess a broad and profound academic foundation in brain function, contribute to the understanding of the human mind as a higher brain function, and are sensitive and committed to addressing the complex issues related to the mind and behavior that society faces. These individuals are expected to have a strong sense of professionalism as experts in neuroscience, supported by rich personal qualities.

Graduate Profile	– Individuals who, grounded in an interdisciplinary understanding of neuroscience, can respond flexibly and responsibly to the complex issues related to the mind and behavior that modern society faces in diverse settings both domestically and internationally. – Individuals who, in domestic and international educational and research institutions, can take a leading role in human resource development and interdisciplinary research by upholding research ethics and demonstrating a sense of professionalism in neuroscience, strong self-management, and well-rounded personal qualities. – Individuals who possess the highest level of interdisciplinary knowledge on both normal and disordered brain functions and are capable of advancing both basic and applied research.

Diploma Policy

The degree of Doctor of Philosophy in Neuroscience is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. High level of expertise: Expertise in the neurosciences to develop and implement advanced research designs and produce superior research results	①Can the student identify new challenges based on expertise in the field of neuroscience? ②Can the student develop and implement a research plan to solve the problems found?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Advanced research skills: Ability to conduct advanced research (experiments and surveys) in human and animal subjects in the field of neuroscience based on research ethics	Can the student use advanced research methods in the field of neuroscience to solve research problems?
	8. Research information gathering and dissemination skills: Ability to write, express, and debate in English appropriately to present and discuss research findings	①Can the student grasp the latest research trends in the field of neuroscience published in international journals and apply them to their own research? ②Can the student accurately explain their expertise and research results in the field of neuroscience based on logical thinking, in an international context?
Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted by evaluating the extent to which competences, as defined in the degree conferment policy, have been achieved. This evaluation is carried out using the “Achievement Evaluation Table (Rubric)”. First Stage (End of the Autumn Semester of the Second Year): Regardless of the submission of QE3, all faculty members responsible for research supervision conduct an assessment based on the rubric at the Doctoral Dissertation Progress Report Meeting. Final Stage: At the Doctoral Dissertation Review Meeting, members of the Doctoral Dissertation Examination Committee who belong to the Neuroscience Degree Program conduct a rubric-based evaluation. Subsequently, the final achievement assessment is carried out by all faculty members at the Educational Council.	

Evaluation Criteria for Degree Theses/ Dissertations	Successful completion of Qualifying Examinations (QE) 1, 2, and 3 is required for submission of the doctoral dissertation. The dissertation must be judged as acceptable with the following two criteria confirmed by the final examination. 1. The dissertation must contain sufficient new academic knowledge in the field of neuroscience. 2. The applicant must have the high level of research skills necessary to work as an independent researcher in the field of neuroscience. (Evaluation items) 1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in neuroscience is clearly described. 2. Contain a reasonable amount of original research findings that contribute to the advancement of the field of neuroscience to be published in academic papers. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as doctoral dissertation in the area of neuroscience. Those who wish to apply for a dissertation review must pass a preliminary examination in their department. (System for examiner/examination method) The dissertation review committee consists of four members, including three faculty members from the degree program (the primary advisor is one of the research supervisors) and one faculty member from outside the degree program. All members attend the final examination, which consists of an oral examination on the dissertation and related fields, and pass/fail decisions are made.

Curriculum Policy

1) Research skills based on the mastery of specialized knowledge and research methods in all areas of neuroscience; 2) Logical thinking skills, writing skills, advanced English expression skills, debating skills; 3) Communication and planning skills required for collaboration with experts in other fields; 4) Understanding and practice of research ethics, self-management skills and research leadership skills as a researcher; 5) The Basic curriculum is designed to help students acquire the ability to disseminate the results of scientific research to society, and the awareness and the human skills to support them as professionals who are sensitive and sincere in dealing with the mental challenges that society faces.

Curriculum Design Framework	– In this course, the “Career Plan, Researcher Ethics, and TF Training Seminar” is a compulsory subject to develop a foundation for professional researchers and educators in neuroscience. In particular, students will be encouraged to clarify their career plans and strengthen their self-management skills through the use of MyIDP and other tools. – In addition, students are encouraged to take open-ended subjects such as the “Foundation Courses” (free choice of subjects), “Introduction to Academic Integrity” and “Applied Ethics” as common subjects for the graduate school, in order to cultivate a broader perspective and to cultivate flexible thinking and research planning skills that are not limited by existing academic systems. – Our department offers “Advanced Scientific Research Proposal in English” as a Foundation Subject for Major, and fosters advanced scientific English skills that will contribute to the writing of English papers and doctoral dissertations, as well as communication and debate at international conferences and in international collaborative research. – The “Advanced Neuroscience Seminar “ where students participate in research seminars held by internal and external research organizations, and the “Advanced Neuroscience Internship” where students are encouraged to participate in training courses offered by national and international educational and research institutions, to encourage the acquisition of cutting-edge techniques and knowledge that are essential for specialized research in neuroscience, and to give students hands-on experience of research activities in practical settings. – The students will develop their research leadership skills through TF experience as a review/ discussion of Introduction to Neuroscience, an introductory course in the Master's Program, an English Journal Club, and as a facilitator in an advanced neuroscience research seminar. – ” Neuroscience Dissertation Research” is offered in six compulsory courses to guide students through the process of deciding on a doctoral dissertation research topic, conducting research, three doctoral research qualifying exams, doctoral dissertation writing, doctoral dissertation final examinations, final public presentation of the doctoral dissertation, and obtaining the doctoral degree in a step-by-step manner, in order to ensure the quality and completion of degrees within the standard time frame.

Teaching and Learning Methods	Learning in the first year – Students are required to take the " Career Planning, Researcher Ethics, and TF Training Seminar" held immediately after enrollment and formulate their own academic and career plans up to and after the completion of the doctoral course. In addition to learning about researcher ethics, students will also attend a basic course on researcher ethics in order to be involved in teaching first semester courses as a TF. – Acquire a broad perspective as a researcher by taking "The Inter-disciplinary Foundation Courses (free choice of subjects). – Students will acquire advanced communication, debating, and reading skills in English, as well as specialized and advanced knowledge and research methods in neuroscience by taking compulsory courses in "Advanced Scientific Research Proposal in English 1" and "Advanced Neuroscience Seminar 1". Students also take "Advanced Neuroscience Internship" to gain research experience at universities and research institutions in Japan and abroad. – Students are required to take "Neuroscience Dissertation Research 1" to determine the theme of their doctoral research, conduct literature research and preliminary research. "Neuroscience Dissertation Research 2" is to advance doctoral research. At the same time, preparation for the Qualifying Examination for Doctoral Dissertation Research (QE1) will proceed. Learning after 2nd year – Students take compulsory courses in "Advanced Neuroscience Seminar 2", "Advanced Scientific Research Proposal in English 2", free courses in "Advanced Neuroscience Seminar 3", and courses in "Foundation Courses (free choice of courses)" and other degree programs to further their studies as neuroscientists. – Students are required to take "Neuroscience Dissertation Research 3" to advance their doctoral research. At the same time, prepare for the Qualifying Examination for Doctoral Dissertation 2 (QE2). During "Neuroscience Dissertation Research 4", students will do research for their doctoral dissertations. At the same time, students prepare for the Qualifying Examination for Doctoral Dissertation 3 (QE3) and prepare for submission to an international journal. – Students complete "Neuroscience Dissertation Research 5" and work on their doctoral dissertation. In "Neuroscience Dissertation Research 6", students complete their doctoral dissertation. At the same time, they prepare for the final doctoral examination and the final public presentation of the doctoral dissertation.

Admission Policy

Desired Student Profile	Applicants must have majored in neuroscience, psychology, disability science, biology, or basic medicine in the master's course. Applicants must have achieved a certain level of proficiency in the master's course and have the ability and desire to become independent researchers after completion of the course.

Student Selection Process	The entrance examination will be conducted through an oral examination. The following qualities will be emphasized in the selection process: (1) content and understanding of the research conducted in the master's course, (2) research planning ability, and (3) presentation ability.

Learning Support Framework

Academic Support	The program supports participation in training courses organized by the International Brain Research Organization (IBRO Schools) as well as the Neuroscience Summer Camp at National Taiwan University. These opportunities are designed not merely as venues for international exchange, but as platforms for building global research networks that will contribute to future scholarly activities. The Tri-Institutional Neuroscience Graduate Seminar (TiNGS), jointly organized by the University of Tsukuba, National Taiwan University, and Monash University Malaysia, is conducted online. Prior to presenting research abroad, students are provided with an international academic exchange setting in which they can challenge themselves in a familiar environment. As part of this initiative, they are given the opportunity to deliver concise three-minute flash talks in English. We require doctoral students to attend the Master's Thesis Research Qualification Examination (interim presentation) in the spring semester, as well as the proposal presentation and public presentation in the autumn semester. This requirement provides them with an opportunity to practice asking questions and giving comments.
Opportunities for Peer Interaction	The program actively encourages students to participate in the Gathering of the Graduate School of Comprehensive Human Sciences, thereby fostering interaction and exchange across academic years and disciplinary boundaries. The Master's Thesis Research Qualification Examination (interim presentation) in the spring semester, as well as the proposal presentation and public presentation in the autumn semester, are conducted in person. These occasions are designed to provide opportunities for mutual learning among students at all stages of both the Master's and Doctoral programs. Upon completion of overseas training or related activities, a public debriefing session is held, offering students an open forum for interaction and exchange with their peers.
Opportunities for Student–Faculty Interaction	We require the degree program's core faculty members and doctoral students to attend the Master's thesis proposal presentation, thereby creating a space for interaction between faculty and students. Similarly, debriefing sessions following overseas training and related activities are organized as venues for interaction and exchange between faculty and students.

Approaches to Assuring and Enhancing Educational Quality

In the first half of the academic year, activities from the previous year—such as a review of the degree conferment process and the career paths of program graduates—are examined. In the second half, activities from the spring semester—including student admissions and grade distributions in major courses—are reviewed. These evaluations are conducted through Faculty Development (FD) sessions with the participation of all members of the Educational Council.

Doctoral Program in Medical Sciences

■ Doctor of Philosophy in Medical Sciences

Program Educational Objectives

Doctoral Program in Medical Sciences aims to understand the fundamental process of life phenomena, including fetal development, birth, growth, aging, senescence, and death, and find better ways to prevent, diagnose, and cure human diseases. The goal is to train researchers and practitioners who could make significant contributions to our society's health and welfare.

Graduate Profile	The scope of our medical science program includes biomedical, clinical, and public health sciences. Our graduates are expected to carry out original research utilizing cutting-edge techniques acquired from a wide range of medical and life technologies. High-quality research, combined with ethical knowledge and communicative skills, would advance the development of new diagnoses and treatments for diseases.

Diploma Policy

The degree of Doctor of Philosophy in Medical Sciences is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Establish research agendas: Identify issues related to diseases and life phenomena and to formulate into an original research plan.	Be able to identify critical issues and develop an original research plan based on the latest findings in the field.

	Competences	Evaluation perspectives
Knowledge and Skills	7. Conduct advanced research: Ability to plan and execute cutting-edge research in life sciences.	①Be able to understand and apply the latest methods and procedures available from various fields of study to accomplish your research. ②Be able to have skills in collecting literature, developing a strategy, and consulting with others to achieve your research.
	8. Specialized knowledge: Understand and utilize advanced knowledge to overcome difficulties in elucidating diseases or life phenomena.	Acquire and apply basic, clinical, and social medicine knowledge to understand diseases and elucidate life phenomena.
	9. Ethics: High awareness and sense of ethics appropriate for researchers and professionals who overcome diseases and elucidate life phenomena.	①A high level of awareness and motivation to elucidate the diseases and life phenomena? ②Have an ethical view and moral principles suited for researchers and medical professionals.
	10. Ability to express informative content: Think logically and express oneself as a researcher and advanced medical professionals.	Be able to explain technical information logically and clearly in native and foreign languages.
Guidelines for Assessing Learning Outcomes	The Competence Self-Assessment Form is submitted at both the mid-term evaluation and the preliminary defense, and is verified by the supervisor and reviewers.	

Evaluation Criteria for Degree Theses/ Dissertations	Dissertation Requirements 1. Publish a research report that contributes to the development of medicine and in scientific journals. 2. The purpose, methods, results, and discussion of the research must be in a format appropriate for a dissertation. 3. The results obtained need to be verified for authenticity. 4. The research outcomes should be discussed appropriately. 5. The significance of the research should be addressed clearly, with an understanding of global research trends in related fields. Review board members – The dissertation review committee consists of one principal examiner and three secondary examiners. Candidates for the primary and secondary examiners are selected by a consensus of the medical degree program leader and the members of the Academic Affairs Committee. The establishment of the dissertation review committee is decided by the Steering Committee of the Graduate School of Comprehensive Human Sciences committee. – Candidates for principal examiners will be selected from the research advisors of the Graduate School of Comprehensive Human Sciences Research Group. – Candidates for secondary reviewers will be selected from among the research advisors or course instructors of the Graduate School of Comprehensive Human Sciences Research Group. In addition, faculty members of other graduate schools of the university, graduate schools of other universities, or those who are recognized by the Steering Committee of the Doctoral Program in Medical Sciences as having research achievements equivalent or superior to those of the graduate school may be added as candidates for secondary reviewers. – The dissertation review committee shall, in principle, select as candidates the same primary and secondary examiners as the preliminary dissertation review committee. Evaluation – In the second half of the fourth year, a preliminary dissertation review committee consisting of one primary examiner and three secondary examiners is formed. The committee will evaluate and provide guidance on dissertation preparation based on the content of the presentation and the planned dissertation. – The student meets the qualifications to submit a final dissertation if they pass the mid-term evaluation, publish at least one original research article as a first author in a peer-reviewed international journal (written in English), and obtain a passing grade by the preliminary dissertation review committee. – Upon submitting the dissertation, the dissertation review committee is established. The committee will review the dissertation and conduct a final examination.

Evaluation Criteria for Degree Theses/ Dissertations	Criteria for passing the final examination 1. Communication skills to merit the degree in Doctor of Medicine. 2. Understand the legal and ethical requirements in conducting medical research. 3. Be able to explain the objective, methods, and results of their research clearly and concisely. 4. Be able to explain, discuss and justify the results scientifically. 5. Explain the significance of the research in relation to global research trends in their field of study. 6. Be able to conduct independent research and publish the new research finding in academic journals in the future.

Curriculum Policy

While the remarkable progress in life and medical sciences has brought steady improvement in medicine, there is still a need for new treatment and prevention methods for most diseases. For this purpose, it is necessary to understand all phenomena of human life. The Biomedical Science division has promoted education and research to understand life phenomena and diseases mainly from life sciences and basic medicine prospective. The Clinical Medical Science division focuses on understanding life phenomena and diseases from clinical and social medicine perspectives.

The Doctoral Program in Medical Sciences merged the two divisions to provide education and research guidance beyond conventional training for doctoral students. The new program consists of core course subjects to prepare students to select their research topics. The students could formulate and implement the research plans, evaluate their results, and publish research findings in internationally recognized journals. The curriculum emphasizes research guidance involving multiple faculty members. It provides an environment where students can learn with international students and international researchers.

In addition to research activities, students will learn their capabilities and ethics in basic, clinical, and social medicine through various courses offered from both divisions. The education and research guidance in Comprehensive Human Science Research Group aims to understand the nature and science behind the “human beings”. Students will learn essential backgrounds and skills in medicine that apply to various fields of study.

Curriculum Design Framework	The General Education Courses provide ethical and legal knowledge to conduct biomedical research. The students will plan their research independently and learn advanced methodologies and research trends. The classes are taught in English with international students. In addition, maximizing the number of 50-course credits allows students to select courses relevant to their studies. Japanese will also be used for guidance and examination if student is more familiar or fluent in Japanese than English language.

Curriculum Design Framework	– "Introduction to Medical Research" course introduces bioethics, research ethics, information ethics, and legal knowledge about recombinant DNA and animal experiments. Students set their dissertation research agenda through discussions with their research advisors in the "Special Studies on Medical Sciences" and "Special Practice in Medical Sciences". The students will acquire the ability to plan and implement a research plan. – In the "Seminar in Medical Sciences", students will discuss various areas of medicine, refine their application skills, and acquire scientific writing skills. – "International Practical Medical Science" and "Medical and Scientific Communication" courses allow students to discuss their research with overseas researchers. They will also have an opportunity to present and listen to the research presentations from various topics. – In the "Lecture and Discussion" of the Major Subject group, students will learn to plan, conduct, and evaluate experimental approaches. In the "Seminar" , students learn from the abstracts of original research papers to understand the content research in their field of specialization and evaluate their research on global trends and standards. – It is recommended that students take two additional credits from Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, and Graduate General Education Courses to acquire general and specific knowledge with broad perspectives.
Teaching and Learning Methods	The Program schedule is listed below. – By the end of the second year, students must earn 30 credits in required and elective courses. – In the first half of the third year, there will be a mid-term evaluation. Students will receive guidance on the preparation of their dissertations. – The student meets the qualifications to submit a final dissertation if they pass the mid-term evaluation, publish at least 1 original research article as a first author in a peer-reviewed international journal (written in English), and obtain a passing grade by the preliminary dissertation review committee during the second half of the fourth year. – Upon submitting the dissertation, the dissertation review committee is established. The committee will review the dissertation and conduct a final examination.

Admission Policy

Desired Student Profile	The objective of the program is to train individuals who can contribute to the understanding of life phenomena and diseases. We seek students who are motivated, ethically fit, and academically competent to the above objectives. We accept students from all over the globe in pursuing innovative research and have a strong will to contribute to the future of humanity.

Student Selection Process	– The candidates shall be selected by written and oral examinations. – The written examination will assess both English language skills and basic knowledge in life sciences and medicine. – The oral examination will be conducted in Japanese or English to evaluate the applicant's objectives, motivation, ethical quality, basic and specialized knowledge in the field of study, and communication skills

Learning Support Framework

Academic Support	The Program Office provides a range of academic support services, including assistance with mid-term and preliminary reviews, competence self-assessments, degree evaluations, and responding to student inquiries as needed. The program also supports students in preparing original research papers as first authors.
Opportunities for Peer Interaction	In the courses 'Lectures and Discussion' and 'Seminar', participation in lectures or seminars hosted by different laboratories is either recommended or required, offering opportunities for interaction with faculty and students across diverse fields.
Opportunities for Student–Faculty Interaction	In the mandatory course 'Lectures in Comprehensive Medical Sciences', students are encouraged to learn about the research conducted by faculty members in both basic science and clinical departments, and to acquire research techniques from experts in different fields that may be applicable to their own work.

Approaches to Assuring and Enhancing Educational Quality

The Educational Planning and Evaluation Committee carries out faculty development activities in collaboration with faculty organizations and academic programs.

Doctoral Program in Nursing Science

■ Doctor of Philosophy in Nursing

Program Educational Objectives

There is a need for health care professionals who can respond creatively, scientifically, and flexibly to the diverse medical needs of people from various cultural backgrounds. Based on an interdisciplinary and international perspective, this degree program will train students to become advanced professionals in nursing, educators, researchers, and nursing and medical experts in the fields of policy and administration who not only possess specialized knowledge and skills, but who are also capable of constantly examining nursing practice with a research mindset. In addition, we will develop individuals who can develop new nursing techniques, education, and research methods based on “interdisciplinarity” and “science”, not only in the specialized fields of nursing.

Graduate Profile	Individuals who can become educators, researchers, and high-level professionals who can serve as bridges between practice and theory, with the ability to systematize education and research methods that form the basis for the creation of new knowledge and technological development required for the next generation.

Diploma Policy

The degree of Doctor of Philosophy in Nursing is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Ability to create scientific evidence: Research ability to create new knowledge that will become the basis for nursing practice.	①Do you have results that can be regarded as the creation of new knowledge? ②Is the research expected to create knowledge that will contribute to the development of nursing science?
	7. Expertise in nursing science: Ability to deepen advanced expertise in nursing science.	①Can you explore the essence of expertise in nursing science? ②Can you grasp the phenomena of nursing science and make them concrete and abstract?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ethics as a researcher and educator: Ability to conduct research and education with a solid sense of ethics	①Can you make decisions and take actions based on ethical standards that protect human dignity? ②Can you formulate a research plan that takes research ethics into consideration and carry it out appropriately for an advanced research project?
	9. International research and practice skills: Ability to conduct research and practice at an international level	①Can you disseminate his/her achievements in international academic exchange? ②Can you discuss his/her expertise with students and researchers whose native language is not Japanese?
Guidelines for Assessing Learning Outcomes	Each knowledge and competence outlined in the “Degree Conferment Policy” is evaluated using the following indicators and methods. [Assessment by Numerical Indicators] Numerical indicators are established for each competence item across all courses and student learning activities to conduct objective evaluations. Achievement target benchmark values are set for each knowledge and competence item to quantitatively measure students' attainment levels. [Assessment Process] ≪ Annual Assessment ≫ Once a year, supervisory faculty and the Academic Affairs Committee collaborate to confirm and evaluate each student's competence attainment level. The assessment is conducted from the following perspectives: – Achievement status of numerical indicators in each course – Attainment level against established benchmark values – Demonstration of knowledge and competences in research activities ≪ Final Assessment ≫ During the dissertation examination, the Dissertation Review Committee confirms that all competences have achieved the benchmark values. The committee comprehensively evaluates quantitative assessment results based on numerical indicators and the manifestation of knowledge and competences in the dissertation to determine the final level of achievement.	

Evaluation Criteria for Degree Theses/ Dissertations	(Evaluation criteria) 1. The contents of research contribute to nursing science. 2. The dissertation must be original and the arguments supporting the originality must be sound. 3. The significance and purpose of the research must be clearly defined, the research must be conducted using appropriate methods, and the paper must be written using the appropriate format and notation. 4. The data used must have been collected by the applicant in accordance with the purpose of the research. The data used should have been collected by the applicant in accordance with the purpose of the research. On the other hand, if the data includes data from the past (before entering the second semester), the analysis of the data should be new. 5. There should be no ethical issues in conducting the research or publishing the results. (Review Procedure) – In the research protocol review, a review committee consisting of one primary examiner and one secondary examiner will be organized to review the research protocol and the presentation at the research protocol review meeting together. – After the research protocol review meeting, the review committee decides whether to accept or re-examine based on the evaluation criteria. – The acceptance or rejection of a dissertation is determined by a preliminary examination by the Preliminary Dissertation Examination Committee (hereinafter referred to as the “Preliminary Examination Committee”), followed by a dissertation examination and final examination by the Dissertation Examination Committee. – The role of the Preliminary Examination Committee is to confirm the eligibility of the applicant and to confirm that the dissertation submitted is of a level worthy of examination by the Dissertation Examination Committee. In order to improve the quality of the dissertation, the student may be required to revise the submitted dissertation within a certain period of time. – The Preliminary Examination Committee will consist of three or four faculty members in charge of the nursing science degree program other than the advisor and the secondary advisor. Of these, the primary examiner and one secondary examiner will be members of the research proposal review committee. – At the Preliminary Examination Committee, a presentation session will be held to allow the applicant to explain the contents of his/her research and to answer questions about related matters. In principle, the presentation session will be open to the public, and the date, time, place, title of the dissertation, and name of the applicant will be posted in advance.

Evaluation Criteria for Degree Theses/ Dissertations	– In principle, the Preliminary Examination Committee shall consist of four or five faculty members in charge of the Master's Program in Nursing Science other than the advisor and the secondary advisor. The primary examiner shall be the faculty member in charge of research guidance for the Master's Program in Nursing Science. The primary examiner and two secondary examiners shall be members of the Preliminary Examination Committee for the relevant dissertation, and one or more faculty members from other degree programs of the university or from outside the university shall be included as new secondary examiners. In principle, the examiners should have doctoral degrees. – The expert committee shall have the applicant explain the contents of the research by holding a presentation and carrying out question-and-answer sessions on the matters related to such contents. The presentation shall be open to the public in principle and be announced in advance by releasing the date, place, title of the research assignment, and the applicant's name. The deliberation by the primary and secondary examiner after the presentation to determine the pass/fail will be closed to the public. If, by consensus of the reviewers, the submitted paper is judged to require additional revisions, the reviewers may request the applicant to make such revisions within a certain period.

Curriculum Policy

The curriculum shall be designed to enable students to work toward the creation of a new nursing science by emphasizing academic fusion and interdisciplinary ideas. As a measure to enhance learning, the curriculum will be structured to enable students to deepen their learning of theory based on scientific evidence and to develop nursing science as a practical science, with the aim of developing individuals with a true balance between practice and theory, beyond the narrow framework of academic disciplines. In addition, the program will provide an environment to cultivate research skills of an international standard by invigorating academic exchange related to education and research, as well as allowing students to study abroad at universities with which we have academic agreements.

Curriculum Design Framework	– The curriculum will be organized to emphasize integration and interdisciplinary thinking, with the entire educational program as one area (nursing science), without being bound by existing nursing science fields. – Students are required to take two or more credits from Graduate General Education Courses, Degree Programs' Common Courses, and Inter-disciplinary Foundation Courses in order to contribute to the cultivation of basic knowledge, broad perspectives, and general knowledge and abilities in related fields with the major field of study as the axis.

Curriculum Design Framework	– Students will acquire the ability to deepen their expertise in nursing science through "Foundations and Principles of Nursing Science", and acquire the competence of knowledge creation based on scientific evidence through "Advanced Research Methods in Nursing Science". In addition, students will acquire a sense of ethics as researchers and educators through "Advanced Nursing Education" and ability to perform advanced statistical analysis through "Application of Statistics in Nursing Research", and focus on improving their basic abilities and qualities as researchers and educators. – Based on the knowledge and abilities acquired in the Foundation Subjects for Major, students will develop advanced knowledge of nursing and research skills to create scientific evidence for the basis of nursing practice through Major Subjects such as "Advanced Topics in Nursing Science", "Advanced Seminars in Nursing Science I", and "Advanced Seminars in Nursing Science II" . – Students will acquire international-level research skills in the process of working on their dissertations through Major Subjects such as "Research in Advanced Nursing Science", seminars in research groups, and special lectures by lecturers from academic partner universities. – Students will also acquire research skills backed by solid ethics and value standards through Graduate General Education Courses, eAPRIN, ethics in clinical research courses, and "Advanced Seminars in Research Ethics" .
Teaching and Learning Methods	– The number of credits necessary for completion of doctoral degree course shall be 25 or more – Students are required to take at least ten credits of foundation subjects for their major. The "Foundations and Principles of Nursing Science" (2 credits) and "Advanced Research Methods in Nursing Science" (2 credits)" are required. Others are selected from the elective subjects "Advanced Nursing Education" (2 credits), "Application of Statistics in Nursing Research" (2 credits), Graduate General Education Courses, Degree Programs' Common Courses, and Inter-disciplinary Foundation Courses. Students Students are encouraged to take the foundation subjects for their major in the first half of the first year. – The minimum number of Major Subjects to be taken for completion is 15 credits, including "Advanced Topics in Nursing Science" (2 credits), "Advanced Seminars in Nursing Science I" (2 credits), "Advanced Seminars in Nursing Science II" (1 credit), "Advanced Seminars in Research Ethics" (1 credit), and "Research in Advanced Nursing Science" (9 credits). – In the second half of the first year, students take "Advanced Seminars in Nursing Science I", in which they review domestic and international papers on research topics, systematically and logically plan and present their research objectives and methods, and constructively discuss their research plan for review. – Students who are able to draft a research plan will present their research plan at the research plan review meeting and have their research plan reviewed.

	– Students who have passed the research proposal review (expected to be in the latter half of the second year) will take “Advanced Seminars in Nursing Science II” so that they can proceed with their research according to the research proposal, and present the originality and novelty of their research topics with evidence and discuss them constructively. – Students are required to take “Research in Advanced Nursing Science”, which is a course for writing a doctoral dissertation. In April of the first year, a faculty advisor and secondary faculty advisors (up to two) will be selected, and a system will be established for students to receive research guidance. For research projects involving human subjects, the plan must be approved by the appropriate ethics review committee before the start of the research.

Admission Policy

Desired Student Profile	Students are expected to be motivated to contribute to the knowledge system of nursing science through the creation of new knowledge by utilizing the nursing practice and research skills developed in the Master's and Doctoral programs. Furthermore, we seek students who aim to become researchers, educators, and advanced professionals who can bridge the gap between practice and theory based on an interdisciplinary and international perspective.
Student Selection Process	– The entrance examination shall be performed in August. In the case where there are insufficient number of applicants in the examination of August, the examination shall be implemented again in the following February. – The number of applicants shall be 8. – Applicants must meet one of the following qualifications. (1) Those who have a master's degree or are expected to have a master's degree by March of the year before admission, (2) Those who have a professional degree or are expected to have a professional degree by March of the year before admission, (3) Those who have been granted a degree equivalent to a master's degree or a professional degree in a foreign country, or who are expected to do so by March of the year before admission. Those who have reached the age of 24 or who will reach the age of 24 by March of the year before admission. – In the entrance examination, academic ability and character will be assessed through written and oral examinations of specialized subjects and English. In the examination of specialized subjects, questions will be asked using texts related to nursing and medical care in order to evaluate the candidates' specialized knowledge of nursing. In the English examination, questions will be given to evaluate whether the candidate has the English ability to use academic papers from overseas. The oral examination will evaluate whether the student has the ability to conduct original research as a graduate student, and whether the student has aptitude, qualities, future potential, and a clear sense of purpose in the field of nursing science as a researcher, educator, or practitioner. – For the examinees of international students, the following shall be considered: the questions shall be in English and preparation of such questions shall be devised etc.

Learning Support Framework

Academic Support	The following initiatives are implemented to support effective learning among graduate students. – Individual support for research supervision and thesis/dissertation writing (one-on-one meetings). – Presentation guidance, such as rehearsal sessions before conference presentations inside and outside the university. – English writing support.
Opportunities for Peer Interaction	The following systems and frameworks exist to enhance peer effects, which foster learning motivation and improve research quality. – Seminars in each specialized field. – Classes that integrate special lectures and exercises across different fields, enabling student discussions. – Collaborative activities at research proposal presentations and thesis/dissertation presentation sessions. – Student tutor system.
Opportunities for Student–Faculty Interaction	The following activities are conducted to enhance learning motivation and research quality through dialogue and supervision with faculty members. – Development of research supervision systems and regular individual meetings. – Study groups and research meetings organized by faculty. – Social gatherings within academic fields, held once or twice a year, such as group meals. – Research project in collaboration with faculty members.

Approaches to Assuring and Enhancing Educational Quality

The following activities are carried out to assess and enhance the quality of education:

– Faculty Development (FD) activities
– Analysis of student surveys and providing feedback
– Regular review of the curriculum

At meetings of the Curriculum Committee for the Nursing Science Degree Program, student learning outcomes are evaluated, and the validity of the curriculum and the appropriateness of instruction are reviewed.

In addition, an Academic Affairs Committee has been established to ensure continuous monitoring and improvement of all educational activities, thereby guaranteeing the quality of education and strengthening the structure necessary to achieve the objectives of the degree program.

Doctoral Program in Public Health

■ Doctor of Philosophy in Public Health

Program Educational Objectives

The program fosters advanced public health specialists with specialized knowledge related to the promotion of the physical, mental, and social well-being of people and the quality of their lives, cross-disciplinary knowledge in related fields, and research skills to solve a variety of health problems faced at a global level, such as the ultra-low birthrate and the aging society.

Graduate Profile	Individuals who have a sufficient specialized and interdisciplinary knowledge, and research and education skills related to the promotion of the physical, mental, and social well-being of people and the quality of their lives and who can contribute to public health administration and community, school, occupational, and global health.

Diploma Policy

The degree of Doctor of Philosophy in Public Health is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research skills: Ability to set contemporary and future research questions based on the latest expertise in the field of public health, and to carry out research plans independently.	①Can the student identify contemporary and future issues in the field of public health based on the latest expertise ②Can the student independently carry out a research plan for the research topic set

	Competences	Evaluation perspectives
Knowledge and Skills	7. Expertise: Advanced and specialized knowledge in the field of public health and interdisciplinary expertise in related sciences.	①Does the student have advanced and specialized knowledge in the field of public health? ②Does the student have interdisciplinary expertise in related sciences?
	8. Ethics: Ethical awareness and knowledge appropriate for a researcher in the field of public health, and in-depth ethical knowledge of the specific field of study.	①Does the student have in-depth ethical knowledge in the field of public health? ②Does the student have a sense of ethics and ethical knowledge about the specific field of their major?
	9. Interdisciplinary application skills: Ability to apply interdisciplinary knowledge and skills related to public health to the solution of contemporary and future problems.	①Is the student addressing contemporary and future issues in public health from an interdisciplinary perspective? ②Is the student attempting to apply interdisciplinary and comprehensive approaches to solving contemporary and future issues in public health?
Guidelines for Assessing Learning Outcomes	Learning outcomes are evaluated using the Study Record, while the acquisition of competences outlined in the Degree Conferral Policy is assessed using the Competence Evaluation Form. Regarding learning outcomes, academic advisors evaluate them with their students at the end of each semester based on the Study Record, and the Program Council confirms each student's learning outcomes. Regarding competence, students' self-assessments and evaluations by their academic advisors are conducted at the end of the first year, the end of the second year, and upon completion, based on the Competence Evaluation Form. These are reviewed by the Program Council and the Thesis Examination Committee.	
Evaluation Criteria for Degree Theses/ Dissertations	After satisfying the requirements stipulated in the Graduate School Regulations of the University of Tsukuba, the dissertation review committee, consisting of one primary examiner and at least three secondary examiners, must confirm that the dissertation meets the following evaluation criteria, and the final examination must result in a passing grade. 1. In public health, which is an interdisciplinary and multidisciplinary field of study, the student must be able to develop an original and novel theme based on relevant previous research. 2. The background, objectives, methods, results, discussion, and conclusions of the research should be logically organized in the form of a dissertation. 3. To be recognized as contributing to the solution of health issues by obtaining results of high social contribution through appropriate research methods in public health. 4. The research must be fair and free from ethical problems.	

Curriculum Policy

The program provides education and research guidance for students to acquire interdisciplinary expertise related to the promotion of the physical, mental, and social health of people and the quality of their lives and to develop advanced research competence, ethics, and problem-solving skills through a multidisciplinary cross-section of human, physical, and medical sciences at the Graduate School in collaboration with the National Institute of Public Health.

Curriculum Design Framework	Students learn theories and research methods in a wide range of specialized fields, such as pedagogy, psychology, physical education, health science, nursing, and medicine, through a cross-disciplinary faculty structure consisting of faculty members from the humanities, physical education, medicine and medical science, and the National Institute of Public Health. In this way, students will acquire interdisciplinary specialized research skills and problem-solving abilities related to public health from multiple perspectives of individuals, society, and the environment. – Students study theories and research methods in public health and related fields and acquire interdisciplinary perspectives for population health through the Foundation Subjects (Special Lecture on Public Health I, II, III, IV, V, and VI, a total of 6 credits). – Students acquire cutting-edge expertise in specialized fields through the Seminar in Public Health Science (3 credits), and acquire advanced research methods and ethics through the Research in Public Health Science (3 credits). Additionally, students acquire interdisciplinary research skills and problem-solving abilities through instructions by multiple academic advisors.
Teaching and Learning Methods	Students will receive guidance from multiple instructors in a systematic and continuous manner according to the standard course flowchart, aiming for completion (degree acquisition) in three years, the standard years of study. – In the first year, students develop a research plan for their dissertation, go through a research ethics review, and begin their research. – In the first and second year, students acquire interdisciplinary knowledge in various fields through “Special Lecture on Public Health I, II, III, IV, V, and VI” . – In the second year and thereafter, students acquire cutting-edge knowledge and research methods in their specialized fields through “Seminar on Public Health” and “Research in Public Health”. In addition, they receive guidance from their advisors on the preparation of their dissertations, and actively make presentations at conferences and submit papers. – Immediately after admission, at the end of each academic year, and at the time of application for dissertation review, students are required to submit a Competence Evaluation Form (self-evaluation of his/her level of achievement regarding the knowledge and abilities outlined in the Diploma Policy, which is confirmed by their academic advisors). – Students are required to submit a study record (a record of academic achievements and research progress to be confirmed by their academic advisors) every semester until passing the midterm review meeting. – Students make a presentation at the midterm examination, preliminary examination, dissertation examination, and doctoral dissertation presentation.

Admission Policy

Desired Student Profile	Students must have a deep interest in public health and related sciences and a willingness to work on scientific clarification and problem solving from an interdisciplinary perspective. Individuals who aim to solve various global-scale issues through advanced specialized knowledge and technology, and who contribute to the field both domestically and internationally.
Student Selection Process	Selection will be based on the ability to conduct research, practice, and international collaboration, and will include written examinations in specialized fields and English, as well as an oral examination based on the research plan, for a comprehensive evaluation.

Learning Support Framework

Academic Support	To assist students with full-time jobs, and given the effectiveness of repeated learning, the advanced foundation subjects offered by this program are delivered via on-demand or online (synchronous) formats. Financial support is provided for English proofreading and publication fees when submitting an academic paper. A student support team has been established within the program to address students' learning needs.
Opportunities for Peer Interaction	We provide students with several opportunities to interact with other students during orientation and presentation sessions. At the interim review sessions, peer review is conducted among students for academic exchange.
Opportunities for Student–Faculty Interaction	To enhance research capabilities for both faculty and students, we implement student-participatory faculty development (FD) programs. We also provide students with opportunities for dialogue with faculty to improve teaching and learning environments. Furthermore, students can interact with faculty across disciplinary boundaries through gatherings held by the Graduate School.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum and Faculty Development (FD) Committee is established to continuously review and improve the curriculum based on the results of student course evaluation surveys and student academic performance, and to conduct FD to improve the quality of education. The Program Council verifies the validity of the curriculum and the appropriateness in academic supervision.

Doctoral Program in Sports Medicine

■ Doctor of Philosophy in Sports Medicine

Program Educational Objectives

To train researchers and highly-skilled professionals who can contribute to sports medicine from the following perspectives and who can be accepted internationally, as well as University faculty professors who can nurture such personnel.

- Researchers and highly-skilled professionals who can contribute to the enhancement of athletic performance from a scientific perspective.
- Researchers and highly-skilled professionals who can contribute to the maintenance and promotion of health, and the prevention and improvement of diseases by evaluating the prevention of lifestyle-related diseases and aging from a scientific perspective.

Graduate Profile	Individuals who have basic knowledge of sports and health, enhancement of athletic performance, and prevention of sports injury and disease, and who are motivated to enhance their research ability in sports medicine based on this knowledge, and who can play an active role in various related fields such as support for competitive sports and sports for health.

Diploma Policy

The degree of Doctor of Philosophy in Sports Medicine is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research skills: Ability to conduct original research in sports medicine	①Do students have original research results in sports medicine? ②Can students be expected to contribute to the development of sports medicine?
	7. Expertise: Advanced and specialized knowledge and operational skills in sports medicine	①Do students have cutting-edge and advanced expertise in sports medicine? ②Do students have research findings related to sports medicine?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ethics: High ethical standards and ethical knowledge appropriate for a researcher or highly-skills professional	①Can students engage in research based on high ethical standards and ethical knowledge? ②Can students conduct research activities with integrity and responsibility?
	9. Interdisciplinarity: Ability to fully demonstrate the interdisciplinary characteristics of sports medicine	①Can students engage in research that demonstrates the interdisciplinary characteristics of sports medicine? ②Do students have interdisciplinary research results in sports medicine?
Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes objectively confirms and evaluates the acquisition status of competences based on the Diploma Policy at each of the following stages, using an achievement evaluation based on the “Achievement Evaluation Sheet（Rubric)”. The stages and methods of this evaluation are outlined below. The evaluation of learning outcomes is conducted by confirming and assessing the acquisition status of competences based on the Diploma Policy using the “Achievement Evaluation Sheet (Rubric)”. Evaluation Subjects and Methods: Competence evaluation is based not only on coursework grades but also on research presentations, oral examinations, daily research activities, and research outcomes (conference presentations, published papers). Evaluation Timing and Framework: Evaluations are conducted at four stages prior to degree completion (Research Proposal Presentation, Interim Report Meeting, Preliminary Review, and Final Review). In addition to assessments by the main supervisor, during the final examination, the main and sub-supervisors collaborate to conduct the review based on the Achievement Evaluation Sheet. Subsequently, a final achievement review is conducted by all faculty members at the Educational Council.	

Evaluation Criteria for Degree Theses/ Dissertations	After satisfying the requirements prescribed in School Regulations of the University of Tsukuba, the doctoral dissertation must be approved as valid regarding the following evaluation items and judged as a pass in the final examination. (Evaluation items) 1. Based on understanding of domestic and international research trends and previous research in related fields, the significance and position of the research in the field of sports medicine must be clearly described. 2. Appropriate amount of original research results that contribute to development of the field of sports medicine must be contained as a dissertation. 3. Reliability of research results must be sufficiently verified based on sufficient knowledge regarding research integrity. 4. Discussion for the research results must be reasonable, and the conclusions must be based on objective evidence. 5. Background, purpose, methods, results, discussion and conclusions etc. of the research must be summarized in an appropriate format as dissertation in the field of sports medicine. (Review system, review method etc.) 1. After the doctoral dissertation is completed, a preliminary examination is held to evaluate the dissertation and determine whether or not to proceed to the final examination. 2. The final examination consists of the submission of the dissertation and a question-and-answer session, and is conducted by an examination committee consisting of the primary examiner (other than the primary advisor), two associate examiners, and at least one faculty member other than the faculty member in charge of this degree program. 3. In the field of sports medicine, the criteria for passing will be that results appropriate for the doctoral degree have been obtained and the appearance is appropriate. The examination will be opened to the public.

Curriculum Policy

In addition to cultivating basic knowledge and abilities, general knowledge and abilities, and sense of ethics that form the basis of sports medicine, education and research guidance will be provided to cultivate the advanced research skills necessary to independently conduct research related to sports medicine by organizing a broad curriculum in sports medicine with faculty members belonging to the physical education, medical science, and human science departments in charge of curricula that cannot be encompassed by existing fields.

Curriculum Design Framework	– It is recommended that students take several courses from the Degree Programs' Common Courses, Interdisciplinary Courses, and Graduate General Education Courses in order to contribute to the cultivation of basic knowledge, broad perspectives, and general knowledge and abilities in related fields, with the major field of study as the axis. – The department offers General Foundation Subjects to learn knowledge and research methodologies in a wide range of sports medicine fields. In addition, Major Subjects will be arranged to study the latest sports medicine research and research methods. – Students will learn basic knowledge and research methodologies of sports medicine through “Introduction to Sports Medicine I and II” and acquire interdisciplinary and ethical perspectives. – Students will learn the research methods of the most advanced sports medicine research through “ Sports Medicine Seminar I and II” and acquire research skills and expertise. – In “ Sports Medicine Seminar III” , students learn about cutting-edge sports medicine research and career path formation from researchers active in Japan and abroad, and acquire management skills, leadership skills, internationality, and interdisciplinarity. – In “ Advanced Study for Sports Medicine Research I”, students learn the basics of doctoral dissertation writing and acquire the Competence of knowledge creation, management skills, communication skills, leadership skills, internationality, research skills, expertise, and ethics. – In “Advanced Study for Sports Medicine Research II and III, students will learn the advanced knowledge and research methods necessary to write a doctoral dissertation, and acquire the Competence of knowledge creation, communication skills, research skills, expertise, and ethics. – Students will acquire the Competence of knowledge creation, communication skills, internationality, research skills, expertise, and ethics through presentations at academic conferences in Japan and abroad. – Students will acquire the Competence of knowledge creation, internationality, research skills, expertise, and ethics by writing papers in academic journals. – Students will acquire leadership, management, and communication skills by planning and organizing doctoral dissertation presentations for prospective degree recipients.

Teaching and Learning Methods	– In the first year, students learn basic knowledge and abilities related to sports medicine, general knowledge and abilities, and ethics, and are required to plan a doctoral dissertation and start research. In the second year and thereafter, students will learn more specialized sports medicine and is able to be guided in their research. – In the first year, students take the Graduate General Education Courses “Introduction to Sports Medicine I and II” to learn the basic knowledge of sports medicine and research methodology. – In the first year, students take “ Advanced Study for Sports Medicine Research I” to plan their doctoral dissertation. In this course, they present their research plan for the doctoral dissertation and receive research guidance from their advisors. – In the first and second years, students take “ Sports Medicine Seminar I and II” to learn about the latest sports medicine research and research methods, and apply them to their own research. – In the first, second, and third years, students take “Sports Medicine Seminar III” to learn not only the latest sports medicine research but also career path formation. – In the “Advanced Study for Sports Medicine Research II and III” in the second and third years, students receive research guidance for their doctoral dissertations from their advisors.

Admission Policy

Desired Student Profile	Students are expected to have knowledge of sports and health, athletic performance enhancement, sports injury prevention, and disease prevention, and to have a desire to enhance their research ability in sports medicine based on this knowledge, and to play an active role in related fields such as competitive sports and sports for health.
Student Selection Process	– In the entrance examination, knowledge of sports medicine and willingness to study will be comprehensively evaluated through an English examination and an oral examination of past research and future research plans. – Although there will be no special entrance examinations or course-taking considerations for working adults, we actively welcome working adult students, who are generally highly motivated and possess a strong sense of purpose.

Learning Support Framework

Academic Support	This program provides individualized research guidance, editing support for thesis writing, and presentation coaching for academic conference presentations from supervisors. Supervisors also assist with English proofreading and writing, and provide career counseling to help students set learning goals and manage their studies. The program also hosts seminars that invite graduates of the degree program to support both research and career development, fostering an environment for valuable exchange.

Opportunities for Peer Interaction	Regular research presentations are held to provide students with opportunities to share their research findings. Through the Q&A sessions and feedback from students in different fields, they gain new perspectives and improve the quality of their research. Additionally, this program creates opportunities for students to interact with peers and faculty from other universities, beyond the confines of their own lab or university. This not only deepens their knowledge outside their specialized field but also allows them to explore the possibility of collaborative research.
Opportunities for Student–Faculty Interaction	Professors set office hours to create an environment where students can feel free to consult on research and ask questions. Additionally, supervisors and students hold regular meetings to not only confirm research progress but also to address personal concerns regarding their studies and career paths. The degree program holds regular research progress report meetings to provide students with opportunities to present their research and interact with professors from different fields.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee evaluates PhD student learning outcomes to verify the validity of the curriculum and the appropriateness of academic supervision. Furthermore, a joint committee comprising the Curriculum Committee and the Research Promotion Committee is established to continuously monitor and improve overall educational activities. This ensures the quality of education and strengthens the framework for achieving the objectives of the degree program.

Doctoral Program in Physical Education, Health and Sport Sciences

■ Doctor of Philosophy in Health and Sport Sciences

Program Educational Objectives

To foster individuals who can exercise leadership from a global perspective, with the aim of contributing to the resolution of contemporary social issues related to the fields of physical education, sports, and health sciences, and who possess the advanced abilities required to conduct outstanding research and educational activities, as well as the rich academic knowledge and practical skills to serve as the basis for such activities.

Graduate Profile	– Individuals who have a high level of expertise in the field of physical education, sports, health science, etc., who can demonstrate leadership in the field of physical education, sports, health science, etc. – In educational and research institutions in Japan and abroad, and who can formulate and implement future plans in administrative institutions and sports organizations. – Individuals with the ability to solve problems on a global level using cutting-edge research techniques. – Individuals with a bird's-eye view, flexible thinking, and the ability to work as a team with people from various fields to solve problems.

Diploma Policy

The degree of Doctor of Philosophy in Health and Sport Sciences is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in areas of physical education / sports / health science field.	①Can the student establish advanced research topics based on the latest expertise? ②Can the student independently carry out a research plan to solve the set research problem?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Expertise: Advanced and specialized knowledge in the field of physical education, sports, and health sciences	Has the student acquired advanced and specialized knowledge in the field of physical education, sports, and health sciences?
	8. Practical ability: Ability to utilize the advanced expertise acquired as a researcher or a highly-skilled professional in the field of physical education, sports and health sciences in society	①Can the student transfer advanced and sophisticated expertise in the field of physical education, sports, and health sciences? ②Can the student apply advanced and specialized knowledge in the field of physical education, sports, and health sciences?
	9. Ethics: ethics and ethical knowledge appropriate for a researcher or highly qualified professional in the physical education / sports / health science field, as well as in-depth ethical knowledge of the specific field of study	①Does the student have deep ethical knowledge in the field of physical education, sports, and health sciences? ②Does the student have a sense of ethics appropriate for researchers and advanced professionals?
Guidelines for Assessing Learning Outcomes	– The assessment of learning outcomes is conducted by confirming and evaluating the acquisition of competences based on the degree conferral policy using an “Achievement Evaluation Form (Rubric)”. – First Stage: At the doctoral dissertation research presentation, all research supervisors conduct an evaluation based on the rubric. The primary supervisor evaluates by combining the dissertation review and oral examination, a quantitative assessment of research achievements, and evaluations of the research proposal and progress reports. – Final Stage: At the Doctoral Dissertation Review Meeting, faculty members of the Physical Education Degree Program on the Dissertation Review Committee conduct an evaluation based on the rubric. The final achievement review is conducted by all faculty members at the Education Council meeting. Specific indicators include: ① Advanced specialized knowledge and abilities acquired through coursework; ② Dissertation content (novelty, logical reasoning, contribution); ③ Publication record; and ④ Demonstration of research planning and problem-solving abilities.	

Evaluation Criteria for Degree Theses/ Dissertations	After satisfying the requirements stipulated in the University of Tsukuba's Graduate School Regulations, the dissertation must be judged by the dissertation review committee consisting of at least one primary examiner and three secondary examiners to be appropriate for the following evaluation items and to pass the final examination consisting of an oral presentation on the dissertation and questions. (Evaluation items) 1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in physical education science field is clearly described. 2. The doctoral dissertation should contain an appropriate amount of advanced and original research results that contribute to the development of the international field of physical education science. 3. Reliability of research outcomes have been multi sided verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as doctoral dissertation in the field of physical education science.

Curriculum Policy

The Doctoral Program in Physical Education, Health and Sport Sciences is a degree program that provides a higher level of education and research guidance in sports culture and management policy, health and sports education, health fitness, and coaching science. In order to cultivate individuals with outstanding teaching and practical skills in the field of physical education, sports, and health science, who can exercise leadership from a global perspective, the following two course models are provided for education and research guidance.

- Standard course model: Education and research guidance will be provided to enable students to acquire a broad range of basic knowledge (Foundation Subjects for Major) and advanced specialized knowledge (Major Subjects: applied research subjects) in the fields of physical education, sports, and health science, as well as the ability to work as a team with people from various fields to solve problems (Major Subjects: practical research subjects) and the ability to solve problems from a global perspective (Major Subjects: international research subjects).
- Next Generation Health and Sports Science Course Model: Students will acquire a wide range of basic knowledge (Foundation Subjects for Major) and advanced specialized knowledge (Major Subjects: research application subjects) in the fields of physical education, sports, and health science, as well as the ability to solve problems by teaming up with people in "practical fields" such as industries, regions, and athletic organizations (Major Subjects: research practice subjects). In addition, education and research guidance will be provided so that students can acquire the ability to solve problems by teaming up with people in "practical fields" such as industries, regions, and athletic organizations (Major Subjects: Practical Research subjects) and the ability to solve problems from a global perspective (Major Subjects: International Research subjects).

Curriculum Design Framework	It is recommended that students take at least 3 credits from Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, and Graduate General Education Courses to contribute to their cultivation of basic knowledge, broad perspectives, and general knowledge and abilities in related fields, based on the subjects in the Doctoral Program in Physical Education, Health and Sport Sciences listed below. – To acquire the ability to create new knowledge through "Research Methodology I" and "Seminar in Human Performance and Sport Sciences I". – To acquire the ability to discover issues from a bird's eye view and to plan and implement measures to solve them through "Research Methodology II" and "Project Forum I and II". – To acquire the ability to communicate the essence of academic results in a positive and easy-to-understand manner through "Research Sessions" and "Global Intensive Debate I". – Students will acquire the ability to demonstrate leadership and achieve their goals through "Research Methodology II", "Project Forum", and "Experience in Assisting the Management of Domestic and International Conferences".

Curriculum Design Framework	– Students will acquire a high level of awareness and motivation to work internationally and contribute to the international community through “Global Intensive Debate I and II”, “International Forum I and II”, “Presentations at International Conferences”, and “Discussions at International Seminars”. – Students will acquire the ability to carry out their research plans independently through “Research Methodology I”, “Research Sessions”, and “Guidance for Dissertation Preparation”. – Students will acquire the ability to use their advanced specialized knowledge in society through “Seminar in Human Performance and Sport Sciences II” and other courses. – To acquire in-depth ethical knowledge through “Research Methodology I” and “Research Session”.
Teaching and Learning Methods	– In the first year, “Research Methodology I” and “Research Session” are compulsory to acquire a wide range of basic research and practical skills. – In the first year, “Seminar in Human Performance and Sport Sciences I” (throughout the year) is compulsory for students to learn the applied aspects of research. – In the first year, the students are required to present their research plans at the Research Debriefing Session I and reexamine the issues to be addressed before obtaining their degrees. In addition, the guidance system will be finalized. – In the first year, in the next-generation health and sports science course model, practical fields (schools, competitions, regions, companies) and social issues are the setting. – In the second year, “Seminar in Human Performance and Sport Sciences II” is compulsory, and “Problem-Based Research I and II” will help students acquire more advanced research and practical skills. – In the second year, students are required to present their research at domestic and international conferences to receive external evaluations and guidance on their research activities toward their degree dissertation. – In the second year, students in the next-generation health and sports science course model are required to write a practical report. – In the third year, students are required to present the progress of their research at the research debriefing session II and reconsider the issues to be addressed in preparation of the dissertation. – In the third year, a preliminary examination will be held under the guidance of three academic advisors within the department and one academic advisor outside the department. – In the third year, a dissertation review committee will review the dissertation.

Admission Policy

Desired Student Profile	We seek individuals who have a high interest in various phenomena related to physical education, health, and sports based on their experience in sports activities and exercise instruction, and who are passionate about promoting research and disclosing the results to solve various problems derived from the research, acquiring the knowledge and skills necessary as educators and researchers, and working together to tackle social issues.

Student Selection Process	– Students will take an oral examination based on their research outline and research plan to evaluate their basic abilities as a researcher and their ability to obtain a degree within the standard course period. – Students will be assessed on their ability to communicate information internationally based on external English tests (TOEFL, TOEIC). After admission, students who are allowed to take the Next Generation Health and Sports Science Course Model will be selected separately.

Learning Support Framework

Academic Support	To support effective learning in the doctoral program, our program implements the following initiatives. First, to cultivate the ability to logically and accurately express research findings, we provide step-by-step writing support to develop academic paper writing skills. We have also established a multi-faculty supervision system to conduct interdisciplinary research guidance incorporating perspectives from different specialized fields, thereby deepening research and broadening horizons. Furthermore, presentation training is provided to prepare students for conference presentations and oral examinations, strengthening their communication skills. Additionally, to support post-degree career paths, a Career Support Forum is held in collaboration with program alumni to encourage the development of diverse career paths. Through these initiatives, the program provides comprehensive support to doctoral students on their journey toward becoming independent researchers.
Opportunities for Peer Interaction	Our program implements initiatives to enhance peer effects among students, aiming to improve learning motivation and research quality. Specifically, through participation in monthly research progress sessions, students engage in active Q&A and exchange opinions on presented content, fostering mutual understanding and enhancing research attitudes. Furthermore, by promoting interaction among students, the program establishes a foundation for cross-year collaborative learning. Furthermore, residential workshops have been introduced. These sessions provide an environment where students can build relationships and gain academic stimulation through discussions of research content and collaborative work. These initiatives foster a culture where students learn by challenging each other, leading to the revitalization of research activities.

Opportunities for Student–Faculty Interaction	Our program implements the following initiatives to promote interaction between students and faculty, aiming to enhance graduate students' motivation for learning and the quality of their research. Following the Career Support Forum held each semester, a networking event is organized involving faculty, students, and alumni (OB/OG). This fosters an environment that encourages the free exchange of ideas across various research fields and disciplines. Particularly, by facilitating interaction with faculty and students from other disciplines, with whom regular research activities offer few points of contact, and even with faculty from other universities, the program broadens opportunities for gaining new perspectives and exploring potential collaborative research. Additionally, after research progress sessions, we offer post-presentation guidance sessions, during which students receive feedback from multiple faculty members. This helps deepen research content and clarify research questions. These initiatives invigorate student research activities while fostering trust-based relationships with faculty and promoting interdisciplinary collaboration.

Approaches to Assuring and Enhancing Educational Quality

To enhance the quality of education in doctoral programs, we conduct self-assessments and evaluations, as well as third-party evaluations involving faculty members from other universities or other majors/degree programs, to verify the appropriateness of the curriculum and guidance systems, as well as the adequacy of instruction. Furthermore, through student course evaluation surveys and research progress reports, we monitor the status of educational and research guidance and utilize this information to improve individualized instruction. Furthermore, opportunities such as interim thesis presentations and preliminary examinations are established to implement a system of multifaceted guidance and evaluation by multiple faculty members. Additionally, faculty participation in Faculty Development (FD) activities is encouraged to advance teaching methodologies and enhance research ethics education. Through these initiatives, we strive for continuous improvement and assurance of the quality of doctoral program education.

Doctoral Program in Coaching Science

■ Doctor of Philosophy in Coaching Science

Program Educational Objectives

This program fosters researchers, university faculty members, and highly-skilled professionals who can lead research and education in coaching studies by cultivating advanced research skills and coaching practice in the coaching field with an international perspective and high ethical standards.

Graduate Profile	An individual who has the creative intellect and humanity to solve complex coaching problems in a globalized world in collaboration with practitioners.

Diploma Policy

The degree of Doctor of Philosophy in Coaching Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research management skills: Ability to understand the body of expertise in the field of coaching studies and to plan and conduct research independently.	①Has the student gained an in-depth understanding of research in coaching studies? ②Does the student have a deep understanding of how to disseminate knowledge that contributes to coaching in the new era as an independent researcher?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Ability to promote practice research: Ability to understand the structure of practice skills in coaching and to communicate them rationally	①Has the student developed the ability to report individual case studies on coaching practice in an easily understood manner? ②Has the student acquired the ability to interpret the essence of individual cases and promote case studies?
	8. Creativity: The ability to create new knowledge that can contribute to the development of the field of coaching.	①Can the student explain their research results in an easy-to-understand and logical manner to researchers in different fields? ②Can the student appropriately communicate their research findings to researchers in their field and accurately answer questions?
	9. Practical coaching skills: Ability to synthesize expertise in the field of coaching studies to carry out rational coaching.	①Has the student developed the ability to synthesize the knowledge created in coaching studies? ②Has the student acquired the ability to reflect on their coaching practice activities and disseminate practical knowledge that contributes to the construction of coaching studies?
	10. Integrity: Ability to discuss and teach in depth about the philosophy and ethics of coaching	①Has the student acquired the ethical knowledge appropriate for a researcher in the field of coaching studies? ②Can the student develop the ethics appropriate for a new era of coaching and pass them on to other coaches?

Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted through the implementation of an "Achievement Assessment Sheet", a tool designed to confirm and evaluate the degree to which competences have been acquired. This evaluation process is guided by the policies established by the degree awarding institution. The evaluation of students' acquisition of knowledge regarding the fundamentals of research management skills, the structure of practical coaching skills, and the philosophy and ethics of coaching, as well as their improvement in practical coaching skills, will be conducted by their course instructors. This evaluation will be based on the content of study, discussions, and reports in classes offered in the Coaching Degree Program (four compulsory classes). Three research seminars will be held to confirm the progress of research toward the creation of new knowledge, and at coaching case presentation sessions, the instructors in charge of the seminars and presentation sessions will evaluate students' ability to execute rational coaching that integrates specialized knowledge. Furthermore, a presentation session by participants in overseas exchange programs will evaluate students' international ambitions. In addition, students will be expected to present their scholarly papers at conferences related to their academic disciplines. They will also be required to engage in self-evaluation of their daily coaching activities.
Evaluation Criteria for Degree Theses/ Dissertations	After satisfying the requirements stipulated in the University of Tsukuba's Graduate School Regulations, the dissertation must be judged as acceptable with the following two criteria confirmed by the final examination. 1. The dissertation must contain sufficient new academic knowledge in the field of coaching studies. 2. The applicant must have the high level of research skills necessary to work as an independent researcher in the field of coaching studies. (Evaluation items) 1. Based on understanding of research trend in and outside Japan preceding research in relevant area, the significance and positioning of the said research in coaching studies is clearly described. 2. Right amount of original research outcomes that contribute to development of coaching studies area is contained as master's thesis. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as master's thesis of the coaching studies.

Evaluation Criteria for Degree Theses/ Dissertations	(Review system) The Dissertation Examination Committee, which shall be established to review doctoral dissertations, etc., shall consist of one primary examiner and at least three secondary examiners. 1. The primary examiner shall be the faculty member in charge of research guidance in the research group. 2. The primary examiner and the secondary examiner must have a doctoral degree. However, up to one secondary examiner who does not have a doctoral degree may be admitted as an exception. 3. At least one of the examiners shall be elected from outside the Doctoral Program in Coaching Science. A person may be a member of another research group at a graduate school of the University, a graduate teacher at another university, or a person who is recognized by the Doctoral Program in Coaching Science Education Council as having research achievements equal to or greater than those of another research group.

Curriculum Policy

Coaching Studies are a theory that systematizes the goals, principles, methods, and plans of training, mainly in competitive sports, and has emerged mainly in Eastern Europe since the 1950s, and has been studied internationally since then.

Coaching studies also forms a unique area in international sporting societies as coaching study or coaching science, and the doctoral degree title (Coaching studies) (Ph.D. in Coaching Science) will be recognized as an internationally accepted title.

This degree program provides education and research guidance to cultivate research skills, expertise, and ethics in the six areas of General Coaching Studies, Theory and Methodology of Training for Sporting Excellence, Movement Theory of Sport, Individual Coaching Studies (Individuals), Individual Coaching Studies (Ball Sports), and Individual Coaching Studies (Martial Arts), as well as a broad basic background in integrated human sciences, a broad perspective, and general-purpose knowledge and abilities that support activities in a variety of social settings.

Curriculum Design Framework	The degree program will be taught and researched by faculty members who have both advanced research skills and experience in coaching international athletes and teams. – This course is designed for students who wish to acquire the Competence of knowledge creation, communication skills, and research management skills through “Coaching Science Research Method I” (Major Subjects). – This course is designed for students who wish to acquire management skills, leadership skills, the ability to promote practical research, and creativity through “Coaching Science Research Method II” (Major Subjects). – Students will acquire the ability to promote practical research, creativity, and coaching practice through the “Case Study Methods of Coaching Science” (Major Subjects).

Curriculum Design Framework	− Students will acquire internationalism, creativity, and integrity through “Philosophy and Ethics of Coaching” (Major Subjects). − Students will acquire communication skills and the ability to promote practical research through the “Coaching Case Study Debriefing”. − Students will comprehensively acquire the Competence of knowledge creation, management skills, communication skills, and research management skills through research seminars 1-3, conference presentations 1-3, dissertation submission 1-2, research debriefing sessions, preliminary examination sessions, and dissertation examination sessions. − Students will acquire international and creative skills through the Doctoral Program in Coaching Science overseas exchange program. − Students will acquire leadership and coaching skills through practical coaching activities. − Students who have completed a master's program other than physical education will take about 10 credits from the courses offered by the Master's Program in Physical Education, Health and Sport Sciences to acquire specialized knowledge that will serve as the basis for their research, mainly in the first year. In addition, it is recommended that students take 2 credits from the Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, and Graduate General Education Courses in order to contribute to the cultivation of basic knowledge, broad perspectives, and general knowledge and abilities in related fields, with the major field of study as the axis.
Teaching and Learning Methods	− The faculty members in charge of this degree program are those who are active as domestic and international leaders in the field of coaching and who are recognized as having extremely high educational and research leadership abilities. − Research guidance for the doctoral dissertation will be provided mainly by an advisory committee consisting of three or more faculty members in charge of this degree program. − The advisory committee encourages the advisory students to actively participate in projects, international competitions, international seminars, etc. organized by various sports organizations, etc., and supports them in improving their practical skills and communication skills related to coaching.

Admission Policy

Desired Student Profile	We are seeking individuals who have a history of competing or coaching at a certain level or above, and who have high aspirations to earnestly seek solutions to various issues related to coaching through research. In addition, we are looking for individuals who are passionate about working with the world in mind.
Student Selection Process	Selection will be made based on the following total scores (500 points). − Document Screening (200 points) − English (100 points) − Oral examination (200 points)

Learning Support Framework

Academic Support	To cultivate an international perspective among students in the Coaching Sceince degree program, we provide support for travel, accommodation, and other expenses associated with presenting research results at international conferences, conducting surveys and research at overseas universities and research institutions, and collecting materials related to research topics abroad.
Opportunities for Peer Interaction	To ensure smooth student community activities within the program, one student representative is elected. Additionally, students from different fields of study share a dedicated student room to provide a space for interaction.
Opportunities for Student–Faculty Interaction	Upon enrollment, an advisory committee consisting of a supervisor and two other faculty members is organized, and a system is in place to provide not only research support but also coaching practice and a variety of other support related to daily life. After research seminars and case presentations, informal discussions are held between faculty and students, providing an opportunity for a wide range of interaction between faculty and students within the program.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee is responsible for the evaluation of student learning outcomes and the verification of the validity of the curriculum and the appropriateness of instruction.
In addition, the faculties will convene to deliberate on educational structures and methodologies. These deliberations will be informed by the results of course evaluation surveys and discussions with students, which will provide feedback on the quality of education. In addition, measures will be implemented to enhance the qualifications and competences of faculty members. These measures will include the implementation of faculty development programs that offer content exclusive to coaching studies. These programs will provide opportunities for interaction with highly skilled instructors.

Doctoral Program in Sport and Wellness Promotion

■ Doctor of Sport and Wellness Promotion

Program Educational Objectives

For those who have already obtained a master's degree and are active in the field of sports or wellness, the program fosters further research and analytical skills, as well as the ability to solve problems in this field by cultivating negotiation skills and advanced practical management skills in Japan and abroad. In other words, the program fosters advanced professionals who possess doctoral-level advanced research skills, as well as the policy, project execution, and management skills to solve difficult problems that require innovation.

Graduate Profile	Individuals who can successfully manage projects to solve difficult issues in the field of sports wellness in Japan and overseas, and produce a certain level of results.

Diploma Policy

The degree of Doctor of Sport and Wellness Promotion is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research ability: Ability to set leading-edge research tasks based on up-to-date specialized knowledge and carry out a research plan independently in areas of sports wellness.	①Can the student develop and prepare an advanced research plan in the field of sports wellness? ②Can the student complete and present a doctoral dissertation with advanced research results in the field of sports wellness?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Specialized knowledge: Leading-edge and advanced specialized knowledge and command areas of sports wellness	Can the student acquire and apply advanced and specialized knowledge in the field of sports wellness?
	8. Ethics: ethics and ethical knowledge appropriate for a researcher or highly qualified professional in the sports wellness field, as well as in-depth ethical knowledge of the specific field of study	Has the student acquired advanced research skills, ethics, and in-depth ethical knowledge in the field of sports wellness?
Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted objectively based on the “Achievement Evaluation Sheet (Rubric)”, which assesses the extent to which students have acquired the competences specified in the diploma policy at each stage. The stages and methods of achievement evaluation are as follows. First Stage (End of the Fall Semester in the First Year): Following the first-year mid-term presentation, the academic advisor conducts the first-stage achievement assessment using the rubric. Second Stage (End of the Fall Semester in the Second Year): After the second-year mid-term presentation, the academic supervisor conducts the second-stage achievement assessment based on the rubric. Final Stage (End of the Fall Semester in the Third Year): The Doctoral Dissertation Examination Committee, composed of the chief examiner and at least two sub-examiners, evaluates the dissertation using the rubric. Subsequently, the final achievement assessment is conducted by all faculty members at the Faculty Meeting. In this doctoral program, the degree of Doctor of Sport and Wellness Studies is conferred upon students who fulfill the prescribed completion requirements and successfully meet the multi-stage achievement evaluations described above, in accordance with the program's mission to “cultivate highly specialized professionals capable of advancing sport and wellness through advanced and independent research”.	

	Doctoral candidates are required to satisfy the following conditions: 1. Completion of Course Requirements Candidates must complete the required credits and demonstrate sufficient mastery of specialized knowledge and advanced interdisciplinary knowledge necessary for conducting independent academic research. 2. Progress and Quality of Research Candidates must demonstrate the appropriateness of their research purpose, methods, and progress at the mid-term presentations held annually, and must clearly articulate the academic, practical, and social significance of their research at the final presentation. 3. Doctoral Dissertation and Examination Candidates must submit a doctoral dissertation that contributes to the advancement of knowledge in the field, and must pass the dissertation examination and oral defense conducted by the Doctoral Dissertation Examination Committee. 4. Completion of Research Ethics Training Candidates must complete ethics training (e-learning such as APRIN or ethics workshops) and demonstrate the ability to conduct research and professional activities in accordance with the highest ethical standards. Based on the above requirements and the results of the achievement evaluations, the doctoral degree is awarded only to those who possess the advanced knowledge, research competence, and professional abilities appropriate for completion of the doctoral program.

Evaluation Criteria for Degree Theses/ Dissertations	Level standards required for the degree thesis After satisfying the requirements stipulated in the University of Tsukuba's Graduate School Regulations, the dissertation must be judged as passing if the following five evaluation items are found to be valid and the following two criteria are satisfied by the examination. 1. A basic understanding of principles and methods 2. Ability to plan, develop, and analyze basic policies and strategies 3. Ability to assess and systematize necessary resources 4. Ability to manage systems effectively and efficiently 5. Ability to develop new comprehensive programs that anticipate social changes 1. The dissertation must contain sufficient new academic knowledge in the field of sports wellness. 2. The applicant must have the high level of research skills necessary to work as an independent researcher in the field of sports wellness. Review board members : The Dissertation Examination Committee, which shall be established to review doctoral dissertations, etc., shall consist of one primary examiner and at least three secondary examiners. Review method and review items, etc: Doctoral dissertation, preliminary examination, and final examination (presentation and oral examination) will be used to make a comprehensive judgment.

Curriculum Policy

The curriculum is designed to foster the ability to solve problems with a bird's-eye view, flexible thinking, and teamwork with people from various fields, as well as the ability to solve problems on a global level using cutting-edge research methods.

Curriculum Design Framework	– Competence of knowledge creation: To be acquired in the following courses: Problem Solving Type Data Analysis Special Lecture 1, Problem Solving Type Data Analysis Special Lecture 2, Sport and Wellness Seminar I, Sport and Wellness Seminar II, Sport and Wellness Seminar III. – Management skills: Acquired in Sport and Wellness Seminar I, Sport and Wellness Seminar II, Sport and Wellness Seminar III, Problem Solving Project Work I, Problem Solving Project Work II, etc. – Communication skills: Acquired through Sport and Wellness Seminar I, Sport and Wellness Seminar II, Sport and Wellness Seminar III, Problem Solving Project Work I, Problem Solving Project Work II, conference presentations, etc. – Leadership skills: To be acquired through Sport and Wellness Seminar I, Sport and Wellness Seminar II, Sport and Wellness Seminar III, Problem Solving Project Work I, Problem Solving Project Work II, etc. – Internationalization: Acquired through Sport and Wellness Seminar II, Sport and Wellness Seminar III, and presentations at international conferences.

Curriculum Design Framework	– Research skills: acquired through Problem Solving Type Data Analysis Special Lecture 1 and 2, Sport and Wellness Seminar I, II, and III, presentations at domestic and international conferences, dissertation presentations, and doctoral dissertations. – Students are expected to acquire specialized knowledge through the following: Problem Solving Type Data Analysis Special Lecture 1 and 2, Sport and Wellness Seminar I, II, and III, and participation in academic conferences and workshops organized by academic societies. – Ethics: acquired through Sport and Wellness Seminar I, II, and III, and participation in ethics seminars. Furthermore, centering on students' majors, in order to contribute to cultivating basic knowledge and wide view, generic competences in relevant areas, it shall be recommended to take one credit from Inter-disciplinary Foundation Courses.
Teaching and Learning Methods	– A total of two credits will be taken in the first year as a Foundation Subjects for Major. In Problem Solving Type Data Analysis Special Lecture 1, students will acquire analytical methods and research design skills for data in the natural and social sciences, and in 2, students will enhance their ability to analyze big data. – Students are required to take three units of Major Subjects: “Sport and Wellness Seminar I”, “Sport and Wellness Seminar II”, and “Sport and Wellness Seminar III”. In Seminar I (first year), students will present their research at the Midterm Report Meeting I. In Seminar II (second year), students will present their research at the Midterm Report Meeting II. In Seminar III (third year), students will receive credit for their presentations at the Preliminary Examination and Doctoral Dissertation Examination, as well as for the guidance provided by the advisory group faculty from inside and outside of Japan in the process leading up to these presentations. Students are judged to have passed or failed the midterm debriefing I and II and the preliminary examination in order to proceed to the next stage. In addition, students are required to make at least one presentation at an international conference or conduct research overseas between the first and third year. The international conference must be approved by the Dissertation review committee. – Students are required to take a total of 3 credits of “Problem Solving Project Work I” and “Problem Solving Project Work II” as Major Subjects. In the field of sports, students will gain experience and training to apply the knowledge and abilities they have learned in practice at government agencies, local governments, sports governing bodies, athletic organizations, and other organizations involved in sports, and in the field of wellness, at government agencies, local governments, NPOs, private organizations, and other organizations involved in health promotion. The program consists of three stages: pre-planning, fieldwork, and post-event reporting (report writing and presentation). Students will earn 8 credits for the above required courses. – A multi-advising system (one research advisor and two mentors, one of whom is a visiting faculty member) will be established for each student. The research advisor and mentor teachers will be in charge of guiding the student from the time of admission and will be responsible for setting up an individual course plan and providing general educational guidance. The research advisor is in charge of the doctoral dissertation and Problem Solving Project Work.

Admission Policy

Desired Student Profile	The applicant should have research achievements (master's degree) related to the field of physical education or health science, at least two years of working experience in the field of sports promotion or wellness promotion, and the language and communication skills to promote international management.
Student Selection Process	The first stage of the selection process is a document review, and the second stage is an oral examination to assess the applicant's expertise. The total score is 80 points for the document review, 40 points for the foreign language examination (TOEIC score), and 80 points for the oral examination.

Learning Support Framework

Academic Support	– Establishment of a multiple-supervisor system, comprising one primary supervisor and two sub-supervisors (including one external supervisor) for each student. – Support for the development of an individualized study plan from the time of admission, providing continuous guidance across all aspects of research and educational activities. – Support for understanding and practicing research ethics through ethics seminars and e-learning programs (e.g., APRIN). – Opportunities for international conference presentations and overseas research to foster language proficiency and a global perspective. – Enhancement of facilities and learning environment in the doctoral student research room (e.g., upgrading PCs and software, providing a comfortable study space). – Strengthening the acquisition and updating of books and academic journals in the resource room to improve access to essential information for study and research. – Expansion of study and research opportunities through collaboration with external research institutes and industry partners (e.g., joint research projects, research meetings).
Opportunities for Peer Interaction	Provision of opportunities for peer review and feedback among students at interim report sessions, project work presentations, and final presentations.
Opportunities for Student–Faculty Interaction	– Formalization of guidance in each stage of Research Seminar I–III, with credit-bearing supervision by advisory group faculty, fostering ongoing dialogue and advice. – Comprehensive feedback from all full-time faculty members at the interim presentation. – Facilitation of deeper insights and learning at project work presentations through discussions and Q&A sessions with the primary supervisor, sub-supervisors, and external supervisors. – Provision of expert and multifaceted feedback through a multiple-examiner system in the doctoral dissertation examination.

Approaches to Assuring and Enhancing Educational Quality

- Based on the Diploma Policy, Curriculum Policy, and Admission Policy, the program is designed to provide a coherent and systematic curriculum for the development of highly specialized professionals.
- By clarifying the evaluation criteria for project work and the doctoral thesis, the program ensures transparent and fair assessments, which help visualize students' learning outcomes and verify the validity of the curriculum and instructional approaches.
- Using the Achievement Evaluation Table (rubric), the program conducts a stepwise assessment of students' acquisition of research design skills, practical research abilities, and dissemination skills required at the doctoral level. The evaluation results are analyzed and continuously incorporated into improvements in instructional methods and educational content.
- By combining individualized supervision with peer evaluation, the program secures the quality of education through multifaceted and highly specialized perspectives.
- Through international conference presentations and collaborative research and partnerships with external organizations, the program regularly examines the social and international relevance of its educational content, thereby maintaining the research standards expected of a doctoral program.
- The Curriculum Committee regularly reviews the curriculum, incorporating feedback from students and faculty as well as results from achievement evaluations to establish a continuous improvement cycle for enhancing the overall quality of educational activities.
- By making research ethics education compulsory (such as APRIN e-learning and ethics training sessions), the program fosters ethical awareness required of advanced researchers and ensures the integrity of both research and educational activities.
- An annual student survey is conducted, and its results are used to organize student roundtable meetings to identify issues and develop improvement strategies, thereby enhancing the educational environment and strengthening student support.

Doctoral Program in Art

■ Doctor of Philosophy in Art

Program Educational Objectives

This program fosters researchers with creative research skills in art and design who can contribute to various areas of society, such as public institutions and corporations, through their outstanding specialized knowledge and practical skills, and university teachers with solid educational and research skills.

Graduate Profile	Individuals who will play a leading role in research and education across various sectors of society, including educational institutions, governmental organizations, and companies, both domestically and internationally, by leveraging their broad knowledge of art and design, advanced research and development skills, and practical abilities.

Diploma Policy

The degree of Doctor of Philosophy in Art is awarded to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a broad perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a broad perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to non-researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to get objectives accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Originality: Ability to conduct original research with a certain academic significance in the field of art and design	①Has the student discovered an original problem or solution in the field of art or design? ②Has the student conducted the research with a unique perspective not found in previous research?
	7. Application skills: Ability to use or propose reliable academic methodologies in the field of art and design	①Did the student use a recognized and reliable academic methodology in the field of art or design? ②Has the student proposed and evidenced a new and useful academic methodology?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Development skills: Ability to draw new, useful, and reliable conclusions that contribute to academic progress in the field of art and design	①Has the student set an issue that expands the horizons of the field of art or design in order to contribute to academic progress? ②Has the student set a new task or goal and derived new and useful insights?
	9. Developmental skills: Capability to foresee the potential for research development that contributes to academic progress in the field of art and design	①Has the student set an issue that has potential for development in order to contribute to academic progress in the field of art or design? ②Has the student drawn conclusions that can be expected to lead to future research?
Guidelines for Assessing Learning Outcomes	As for learning outcome evaluation, in accordance with achievement evaluation results based on the Competence Self-Evaluation Sheet, the status of attainment of competences on the basis of the Diploma Policy is confirmed and evaluated objectively for each of the following stages. The stages and methods of achievement evaluation are shown below. – On the basis of the Research Plan (at the beginning of the academic year) and the Report on the Results of Research Guidance (at the end of the academic year), research planning and results for each academic year are checked, and primary and secondary academic advisors evaluate the degree of attainment of competencies on the basis of efforts and achievements related to learning and research and provide necessary instruction. – On the basis of achievements from activities listed in the “Corresponding main learning activities” section (presentation of research results in the Advanced Seminar: Theory of Art I and II, extracurricular activities, etc.), the degree of attainment of competences is checked in accordance with criteria listed in the “Evaluation perspectives” section. Then, on the basis of the results of achievement evaluation conducted in December (Competence Self-Evaluation Sheet), the status of attainment of competences based on the Diploma Policy is confirmed and evaluated. – Numerical criteria have been established for competence items in the Achievement Evaluation (number of competencies to be attained: 18 by the end of the first year, 36 by the end of the second year, and 40 by the time of dissertation submission). – The Doctoral Dissertation Review Committee examines doctoral dissertations, and on the basis of the Competence Self-Evaluation Sheet, which is submitted at the time of preliminary examination, it is judged whether competences necessary to acquire a degree have been attained.	

Evaluation Criteria for Degree Theses/ Dissertations	The dissertation must meet the requirements stipulated in the University of Tsukuba Graduate School Regulations as a standard to be met, the dissertation must be recognized as appropriate for the following evaluation items, and the final examination must be judged as passing. 1. Based on understanding of research trends in and outside Japan preceding research in relevant area, the significance and positioning of the said research in the field of art and design is clearly described. 2. Right amount of original research outcomes that contribute to development of the field of art and design area is contained as doctor's thesis. 3. Reliability of research outcomes have been sufficiently verified based on sufficient knowledge regarding research integrity. 4. Consideration for the research outcomes is reasonable and their conclusions are based on objective grounds. 5. Background, purpose, method, results and conclusions etc. of the research shall be summarized in an appropriate form as master's thesis of the department of arts. The dissertation review committee shall consist of at least four members: one primary examiner and at least three secondary examiners. During the examination, at least two oral examinations and a public presentation are conducted, and a final examination is taken. Those who wish to apply for a dissertation review must pass a preliminary examination in the degree program in advance.

Curriculum Policy

The Doctoral Program in Art delivers specialized research in various fields of art and design, while also developing studies that enhance interdisciplinarity through collaboration with adjacent fields. Primary and secondary advisors provide individualized guidance and advice on writing doctoral dissertations, and all faculty members participate in instruction and evaluation through the courses “Advanced Seminar: Theory of Art I and II”. This process fosters the competence and practical skills necessary for presenting peer-reviewed research at domestic and international conferences and for submitting refereed papers to academic journals.

Curriculum Design Framework	– Through the “Advanced Seminar: Theory of Art I and II” (compulsory), students will acquire the following competences: 1. Knowledge creation competence, 2. Management competence, 3. Communication conpetence, 4. Leadership competence, and 5. Internationality competence.

Teaching and Learning Methods	– In each year, individual guidance will be provided by the primary and secondary advisor. – In each year, students will submit a “research plan” and a “report on the results of research guidance” . – In each year, those whose main research area is the production of artworks will exhibit their research results to the public. – In the first and second years, “Advanced Seminar: Theory of Art I and II” will be held each semester, and oral examinations will be given by several teachers. – In the third year, the preliminary examination is conducted by the Preliminary Examination Committee. – In the third year, the Dissertation Review Committee will conduct the final examination and the review of the doctoral dissertation.

Admission Policy

Desired Student Profile	In the case of theoretical research, we seek individuals with a deep understanding of and sensitivity to art, as well as knowledge of specialized fields and the ability to conduct intellectual research. In the case of theoretical research, we seek candidates with knowledge of specialized fields, the ability to conduct intellectual research, and a deep understanding of and sensitivity to art.
Student Selection Process	An oral examination will be conducted on the contents of the master's dissertation or equivalent research and the research plan after admission. Based on this, a question-and-answer session will be held regarding the area of specialization.

Learning Support Framework

Academic Support	– By including secondary academic advisors, the system ensures the objectivity of research supervision and capability to respond to various inquiries. – Voluntary learning and research activities outside classroom hours (release of theses and artworks, participation in projects on and outside campus, etc.) are recommended, and to enhance their motivation, students are informed that extracurricular activities, such as independent art production and research will be considered as elements of learning outcome. – Students are thoroughly informed of opportunities to submit research papers both within and outside the educational organization to support their publication of papers.

Opportunities for Peer Interaction	– At research presentation workshops of the Advanced Seminar: Theory of Art I and II, students themselves are involved in the proceedings of the workshops, and the questions and answers section provides an opportunity for students learn from other students in different grades and in different fields of study. – The DC Exhibition is held mainly for students whose main research activity is production of artworks to present research results; this serves as an opportunity for students to have their research-related production practices examined through the display and release of their artworks, which are their research outcomes. The exhibition displays various artworks of students, who use different ways of expressing artistic ideas, and panels that introduce research activities of students whose main activity is not production of artworks. Since students in various fields of study can proactively engage in planning and operation of the exhibition, the exhibition promotes exchanges among students in different fields of study.
Opportunities for Student–Faculty Interaction	– All faculty members in the Doctoral Program in Art participate in research presentation workshops of the Advanced Seminar: Theory of Art I and II, so it offers opportunities for students to exchange opinions and gain feedback from various perspectives, as not only academic advisors but also other faculty members provide advice and instruction. – In the Advanced Seminar: Theory of Art I and II, special lectures are given by people who have completed doctoral programs and researchers at other institutions; these lectures serve as an opportunity for students to think about their career development as researchers and improve their motivation for learning. – Exchanges between students and faculty members are promoted by encouraging them to participate in research and other projects hosted by faculty members mainly in charge of this degree program; at the same time, they are encouraged to take part in academic society meetings, art councils/organizations, and study group meetings where they can interact with outside researchers, art creators, and others. In this manner, individual students' motivation for learning is enhanced by providing communication with leaders and predecessors in the field of art, leading to improvement in the quality of research.

Approaches to Assuring and Enhancing Educational Quality

The Learning and Education Review Committee and other organizations evaluate students' learning outcome and verify the adequacy of the educational program and the appropriateness of educational guidance.

– The status of students' learning is confirmed on the basis of information on academic affairs and institutional research data.
– Problems in learning and research at art-related organizations are identified, and faculty development training sessions are hosted together with such organizations.

Doctoral Program in Design

■ Doctor of Philosophy in Design

Program Educational Objectives

This program aims to acquire the practical ability to create products and environments that improve people's minds, to create social systems that create connections between people and make them bright and fulfilling, and to foster researchers who have the qualities of international top leaders, play a central role in diverse research and educational institutions, including industry and government, and utilize their creativity to nurture, maintain, and regenerate rich and constructive communities and societies.

Graduate Profile	Individuals who are willing to practice cross-disciplinary, practical, and international study, propose solutions to problems that transcend regional and cultural barriers, have the tenacity to produce results, and possess discernment (ability to identify issues), breakthrough ability (planning ability, logical persuasiveness), and the ability to complete tasks to carry out specialized research.

Diploma Policy

The degree of Doctor of Philosophy in Design is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered as a new knowledge? ②Can you create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, in your area of expertise and even in other areas, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you possess a high level of awareness and motivation regarding contributions to the international community and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Conceptual and thinking skills: Ability to identify advanced issues (discernment) and develop professional research plans	Can you plan and carry out research and production using a high level of problem identification skills, as well as familiarity with the details of specialized problems?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Analytical skills: Advanced problem analysis skills to solve problems from a broad perspective with a high level of vision	①Did you acquire a high level of professional problem analysis skills to conduct advanced and excellent research in their field? ②Did you acquire the ability to analyze comprehensive design issues from a wide range of disciplines and a high level of specialized knowledge?
	8. Solution skills: Ability to create new solutions and propose the results to society and academia, supported by high-level professional skills.	Did you acquire advanced problem-solving skills (ability to complete tasks) and strong breakthrough ability (planning ability) through research for their doctoral dissertations, internships, and other research practices?
Guidelines for Assessing Learning Outcomes	– At the end of the spring semester of the first year, all research advisors will hold a research plan presentation to confirm the research policy and provide guidance, followed by the first-stage achievement review at the end of the fall semester. – At the end of the spring semester of the second year, a public presentation will be held, and at the end of the fall semester, the second-stage achievement review will be conducted to check academic progress and provide guidance. – At the end of the spring semester of the third year, a preliminary examination of the doctoral dissertation (not open to the public) will be conducted to confirm academic progress and provide guidance for the final achievement review. – After passing the preliminary examination, a public presentation will be held for the submitted dissertation, and the dissertation review committee, consisting of the primary examiner and at least three secondary examiners, will review the doctoral dissertation. At the same time, the final achievement review will be conducted.	
Evaluation Criteria for Degree Theses/ Dissertations	Students independently formulate and analyze interdisciplinary research topics in design studies and related fields. Through logical reasoning based on the facts obtained, they synthesize objective conclusions into their doctoral dissertation. The dissertation is reviewed by the Degree Thesis Examination Committee, and a pass/fail decision is made following an oral examination. The dissertation review committee shall consist of the main examiner and at least three associate examiners, who shall examine the dissertation through an oral examination. 1. The student must have the ability to construct theories based on specialized and interdisciplinary knowledge of design studies and disseminate them to society. 2. The student must possess the highest level of specialized knowledge and skills in design, and have the ability to promote research on design in a logical and scientific manner. 3. The student must have the ability to lead human resource development and academic activities at educational and research institutions in Japan and abroad based on a deep knowledge of design studies.	

Curriculum Policy

The Doctoral Program in Design fosters the ability to identify high-level professional issues (discernment), the ability to plan research from a broad perspective by combining professional and comprehensive methodologies, the ability to conduct research, the ability to complete research, the ability to logically persuade others, and the ability to communicate and make proposals internationally, in order to carry out research on a variety of designs related to industry and society, including products, planning, entertainment, composition, architecture, and spatial planning. Specifically, in addition to the various fields of design, including composition, sensitivity science, and visual psychology, faculty members from related fields such as systems information technology, environmental engineering, physiology, ergonomics, and disability science will provide cross-disciplinary and practical training courses.

Curriculum Design Framework	– The curriculum is organized to ensure that students achieve learning outcomes through primary studies corresponding to the knowledge and abilities outlined in the Diploma Policy. – Students will acquire comprehensive research planning, implementation, and completion skills through special research in design studies. – Students are encouraged to acquire interdisciplinary knowledge and a broad range of design knowledge through the Graduate General Education Courses and Inter-disciplinary Foundation Courses. – Students will acquire practical problem identification, planning, and persuasion skills through special research in design studies and internships. – Students will acquire international negotiation and network building skills for successful design, design, and planning through special research in design studies and overseas training.
Teaching and Learning Methods	– In the first year, students submit a “Research Plan Form” and are assigned a primary and secondary advisor according to the content of their research. – In the first and second years, students take special research courses set for each semester, and their progress is checked through presentations at the end of each semester. – Students take internships and overseas training courses systematically to deepen their ability to apply research and international expansion. – Students receive midterm guidance for their doctoral dissertations during their second year, and submit their doctoral dissertations in October of their third year.

Admission Policy

Desired Student Profile	We seek individuals with research achievements in design or fields related to design, and those who have talents and motivated to theoretically solve design problems that transcend regional and cultural barriers, and individuals who are willing to constantly challenge themselves to create new research problems and develop the tenacity to produce results.

Student Selection Process	In the selection process, academic CVs, academic standards and abilities are evaluated based on the submitted documents, and professional aptitude will be assessed through oral examinations in specialized fields so that applicants from various research and educational fields as well as those with excellent expressive skills in design can apply.

Learning Support Framework

Academic Support	– At each stage—orientation upon enrollment, formulation of research plans, and achievement evaluations—we confirm the learning conditions necessary to produce academic outcomes. We establish a system to collaboratively explore course opportunities with students, such as graduate school common subjects and foundational courses, and to prepare the necessary environment. – Through the associate advisor system, we ensure objectivity in research guidance and establish a framework to address diverse consultation needs. – Opportunities to participate in seminars and research presentation sessions outside one's own academic year are provided. This serves as an opportunity to objectively review one's research framework and supports the deepening of research. – Faculty Development (FD) programs, such as copyright workshops, are conducted to provide opportunities to enhance the knowledge and ethical awareness necessary for advancing research.
Opportunities for Peer Interaction	– The curriculum incorporates mechanisms that provide opportunities for students to participate in seminars and presentation sessions outside their own academic year, promoting cross-year/cross-organizational student interaction through Q&A sessions and similar forums. – Through the TA/tutor system and the promotion of student projects, mechanisms are created to continuously generate opportunities for students to learn from each other. – Student gatherings held by the academic division provide opportunities for students to interact across disciplines.
Opportunities for Student–Faculty Interaction	– We encourage student participation in faculty development (FD) initiatives organized by the Academic Division/degree programs, supporting enhanced interaction by fostering shared awareness of common challenges. – Through student gatherings held by the Academic Division, we provide opportunities for interaction with faculty members across disciplines. – All faculty members responsible for degree programs participate in presentations of research outcomes, such as those in the Special Research in Design program, providing opportunities for interaction between students and their advisors as well as other faculty members through exchanges of opinions.

Approaches to Assuring and Enhancing Educational Quality

- The philosophy of the degree program, its activities, and student engagement in classes and projects are summarized annually and published as Design Discourse DPD. This serves both as a public relations tool and as a means to seek guidance from internal and external sources.
- Within the Degree Program Management Committee, the following subcommittees are established: the Academic Affairs Committee (handling matters related to DP), the Curriculum Committee (handling matters related to CP), the Admissions Committee (handling matters related to AP), the Faculty Development Committee (handling matters related to improving teaching quality), and the Student Committee (handling matters related to the learning support system). Each subcommittee reviews the previous year's performance during the first half of the academic year and discusses improvement measures for the following year.
- For improvement items related to enhancing teaching quality or learning support systems, the FD Committee organizes them and plans FD activities in collaboration with the university-wide/academic divisions, striving to improve teaching quality.
- The Management Meeting comprehensively reviews the results of these discussions, establishes necessary improvement goals, compiles them into an inspection and evaluation report, and, as needed, formulates a plan to update standards reflecting these goals. This becomes the plan for the next academic year.
- Discussed items and countermeasures are compiled and published via the degree program's website and other channels, establishing a system to seek guidance from both internal and external sources.

Doctoral Program in Heritage Studies

■ Doctor of Philosophy in Heritage Studies

Program Educational Objectives

This program fosters individuals to comprehensively understand the social and international roles of the world's cultural and natural heritage in relation to the agenda of international society and international governance aimed at achieving sustainability of the global environment and human society, to analyze the location of problems facing heritage in relation to political, economic, social, and natural factors, and to develop researchers and university teachers of world heritage studies and highly skilled professionals who will become top leaders in the world with a high level of ability to research theories and techniques for solving such problems.

Graduate Profile	The program fosters individuals with a clear will and attitude to contribute to the world in the protection of the world's cultural and natural heritage, a sense of ethics, communication and negotiation skills that can be applied to discussions in the international community, especially in international organizations, the ability to accurately grasp the needs of the international community and solve problems, and the ability to become researchers and educators in world heritage studies who can pass on the world's cultural and natural heritage to future generations.

Diploma Policy

The degree of Doctor of Philosophy in Heritage Studies is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. The ability to develop co-notification	Does the student intend to contribute to society by developing a wide range of research results on the conservation of cultural and natural heritage?
	7. Ability to create specialized knowledge: Ability to create and use advanced knowledge about cultural and natural heritage	Is the student trying to make use of the results of their specialized research on the conservation of cultural and natural heritage for the benefit of society?

	Competences	Evaluation perspectives
Knowledge and Skills	8. Ability to develop common skills	Can the student develop their research results and work on problem solving for the conservation of cultural and natural heritage?
	9. Capacity to develop professional skills: Ability to find solutions to professional challenges in the protection of cultural and natural heritage	Can the student develop professional solutions and engage in problem solving for the conservation of cultural and natural heritage?
	10. International development capacity: Awareness of and willingness to address international issues in the protection of cultural and natural heritage	Has the student acquired a high level of motivation and sufficient language skills to contribute to the international community for the conservation of cultural and natural heritage?
Guidelines for Assessing Learning Outcomes	The assessment of learning outcomes is conducted in accordance with the “Doctoral Dissertation Evaluation”, which is implemented at each stage of the mid-term presentation, the preliminary review, and the final review. Through multiple staged evaluations based on the “Doctoral Dissertation Assessment Sheet”, the program objectively verifies and evaluates the student's attainment of the competences stipulated in the diploma policy as follows: First Stage (Autumn Semester of Year 2): During the Doctoral Mid-term Presentation, all faculty members evaluate the student's research using the designated rubric. Second Stage: During the Preliminary Dissertation Review, the principal examiner and three sub-examiners conduct rubric-based evaluations. Third Stage: During the Final Dissertation Review, the principal examiner and three sub-examiners conduct rubric-based evaluations and determine the student's final level of achievement. In addition, given that the primary objective of the doctoral program is the acquisition of original and internationally recognized research competence, the program conducts a comprehensive evaluation of the originality, academic specialization, developmental potential, and international significance of the student's research. This includes assessment of the publication of peer-reviewed articles (domestic or international), presentations at international conferences, and the scholarly value and maturity demonstrated through these achievements. Furthermore, educational activities (such as teaching assistant experience), participation in collaborative research, and engagement in external activities (including international projects and policy-related contributions) are also regarded as important indicators of advanced professional development appropriate for the doctoral level.	

Evaluation Criteria for Degree Theses/ Dissertations	(Doctoral dissertation review) 1. The Preliminary Review committee consists of at least four members: one primary examiner and at least three secondary examiners, with the primary examiner being a full-time faculty member of the Doctoral Program in Heritage Studies. The Preliminary Review committee shall meet at least once for each dissertation submitted, and if all members of the committee unanimously agree that the applicant is able to submit the dissertation within 12 months, the decision will be “Acceptable”; otherwise, the decision will be “Negative” . 2. The dissertation review committee shall consist of at least four members: one primary examiner and at least three secondary examiners, with the primary examiner being a full-time faculty member of the Doctoral Program in Heritage Studies. The dissertation review committee shall meet at least once for each submitted dissertation, examine the dissertation in public, and make a pass/fail decision. In principle, there shall be at least one week's notice period between the announcement of the open review and its implementation. 3. After the decision by the doctoral dissertation review committee is completed, the primary examiner of the doctoral dissertation review committee shall promptly report the results to the Doctoral Program in Heritage Studies Education Council and to the steering committee of the Faculty of Human Sciences through the degree program leader. (Evaluation criteria) 1. Appropriate theme for a dissertation in World Heritage Studies (problem and issue setting) 2. Clear positioning of the paper based on prior research (research positioning) 3. Research methods appropriate to the subject are selected and the grounds for the selection are credible (Reliability of research methods and arguments). 4. The argument has been sufficiently developed and there is no major contradiction overall (Structure of the paper) 5. No ethical issues in the conduct of the study and the publication of the results (ethics) (Evaluation items) 1. Originality: Novelty of either the concepts and methods introduced or the facts and laws discovered. Includes improvement of a known method, application from a different field, etc. 2. Budding potential: Research that is at the beginning of the research process, but is based on new ideas and concepts and has great potential for future development. 3. Inventiveness: It can clarify new facts that may change conventional theories, or to develop new research areas, research and technology systems. 4. Usefulness: Can provide useful information that is useful for improving technology or for practical or academic purposes.

Curriculum Policy

In order to respond to social and international needs for the protection of World Heritage, a practical and interdisciplinary course of study is organized to foster researchers who conduct advanced research on heritage protection, and program officers who are engaged in heritage protection with advanced knowledge and professional skills in domestic and international heritage protection sites and international organizations.

Curriculum Design Framework	The curriculum consists of nine areas, “Cultural Heritage Policy and Administration”, “Natural Heritage and Nature Conservation”, “Heritage Development”, “Tourism Planning”, “Landscape Planning”, “Architectural Heritage”, “Art Heritage”, “Conservation Science”, and “International Heritage Studies”, with the aim of fostering researchers who conduct advanced research on heritage protection and program officers who are engaged in heritage protection with advanced academic knowledge and professional skills in the field of heritage protection in Japan and abroad, and in international organizations.
Teaching and Learning Methods	– In each academic year, students participate in special research in their area of specialization and receive guidance from their academic advisor. – In the fall semester of the second year, students will make a midterm presentation of their doctoral dissertation in front of all faculty members and receive advice on their research. – In the third year, the doctoral dissertation is submitted after a preliminary examination, and the dissertation review committee, consisting of one primary examiner and at least three secondary examiners, examines the doctoral dissertation.

Admission Policy

Desired Student Profile	We seek individuals who are motivated to engage in the evaluation, conservation, management and utilization of World Heritage sites from a broad perspective and with flexible thinking, and who possess the academic skills and qualities appropriate for research activities.
Student Selection Process	The entrance examination will be conducted by oral examination, and the selection will be based on research and presentation skills related to the specialty.

Learning Support Framework

Academic Support	In the doctoral program, emphasis is placed on establishing a support system that fosters the independence of students as researchers, with structures in place to provide guidance while encouraging self-directed research. In addition to individualized supervision on research planning, thesis structure, and publication strategies, the program offers support for the preparation of various research funding applications (including overseas travel grants, and private foundations) as well as instruction in research ethics. Furthermore, students receive training in specialized techniques—such as advanced statistical analysis, 3D analysis, and the use of AI tools—as well as support for developing skills in academic writing in English.

Opportunities for Peer Interaction	In the doctoral program, support is provided to foster proactive interaction among students, with the aim of promoting the formation of interdisciplinary and international research networks. Joint seminars and workshops are actively organized, where students from different fields present their research and exchange ideas, along with opportunities for collaborative presentations with graduate students from overseas universities. Furthermore, students are encouraged to take leadership roles in planning and managing such activities, thereby cultivating a self-directed research community.
Opportunities for Student–Faculty Interaction	In the doctoral program, in addition to deepening individual research, emphasis is placed on continuous supervision from multiple faculty members, providing interdisciplinary and international perspectives. Alongside the primary supervisor, students are given opportunities for guidance from co-supervisors, particularly through staged research progress presentations during the preparation of the doctoral dissertation, where they can receive advice and feedback from a broad range of expertise. Furthermore, through activities such as serving as a Teaching Fellow (TF) in undergraduate and graduate courses and as a Teaching Assistant (TA) in off-campus training, students are offered opportunities to directly observe faculty members' attitudes, instructional techniques, and ethical standards as educators. These experiences contribute to developing their own teaching competence, research capacity, and communication skills.

Approaches to Assuring and Enhancing Educational Quality

In the Education Committee, the validity of the curriculum and the appropriateness of instructional practices are examined using the results of students' learning outcome assessments and their demonstrated competences. The research progress of each student is monitored annually through progress reports, mid-term reviews, and final reviews, with achievements and challenges shared among faculty members. Furthermore, the program has established standards regarding the number and quality of peer-reviewed publications required prior to dissertation submission, and the attainment of these standards is made visible to ensure transparency in evaluation.

The program also evaluates its overall effectiveness by tracking graduates' career paths and research achievements, and continuously improves its educational practices through faculty development (FD) activities aligned with international standards of doctoral education. Student surveys and individual interviews are conducted regularly to incorporate student feedback into ongoing educational enhancements.

Doctoral Program in Informatics

■ Doctor of Philosophy in Informatics

Program Educational Objectives

Information has played an important role in human activities, but its importance has rapidly increased with recent technological advances. In order to respond to such situations, the Master's Program in Informatics (doctor late semester course) will train personnel engaged in specialized work to utilize information for academic purposes, education, daily life, culture, etc., through an interdisciplinary approach that combines humanities and sciences.

Graduate Profile	Individuals who can see the big picture various problems related to human beings and information, set up research tasks based on their specialized knowledge and skills, and carry them out.

Diploma Policy

The degree of Doctor of Philosophy in Informatics is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Research competence in Informatics: Advanced research skills to be able to set up advanced research topics in the field of informatics and to independently formulate and carry out research plans.	①Can the student establish essential research topics in the field of informatics that will contribute to the future, based on previous research in specialized fields related to human body, mind, and various activities? ②Are the student's research methods appropriate for solving the set advanced problems and producing original research results?

<table>
<tr><td rowspan="3">Knowledge and Skills</td><td>Competences</td><td>Evaluation perspectives</td></tr>
<tr><td>7. Expertise in Informatics: Latest advanced expertise and operational skills in informatics.</td><td>①Has the student sufficiently acquired the ability to apply advanced and specialized knowledge in the field of informatics?
②Has the student identified new and original problems supported by the latest expertise in the field of informatics?</td></tr>
<tr><td>8. Ethics in Informatics: High ethical standards and normative awareness in the field of informatics</td><td>①Does the student have sufficient knowledge of protecting intellectual property and information security related to research?
②Can the student explain the sense of ethics essential to the field of informatics and the knowledge of protecting intellectual property and information security?</td></tr>
<tr><td>Guidelines for Assessing Learning Outcomes</td><td colspan="2">The evaluation of learning outcomes is conducted by objectively confirming and assessing the acquisition status of competences based on the policy for degree conferral at each stage according to the achievement evaluation using the “Competence Evaluation Chart”.
The stages and methods for achievement evaluation are indicated as follows.
– The faculty member responsible for research guidance conducts the achievement assessment based on a rubric in response to the student's reflection.
– Subsequently, a Doctoral Dissertation Review Committee consisting of a primary examiner, secondary examiners, and reviewers totaling five or more members, a direct assessment of the attainment status of competences is conducted based on a rubric along with the dissertation review, and the steering committee conducts the final evaluation of the student's competence achievement.</td></tr>
<tr><td>Evaluation Criteria for Degree Theses/ Dissertations</td><td colspan="2">Dissertations for which all of the following evaluation items are deemed to be valid or achieved will be accepted as a doctoral dissertation upon final examination or confirmation of academic ability.
1. Novelty and significance of the research theme
2. Grasping and understanding of prior research
3. Validity of the research method
4. Conclusions and the validity of the logic leading to them
5. Novelty and originality of conclusions
6. Adequacy of style and organization
7. Appropriate citation of documents and materials
8. Academic contribution</td></tr>
</table>

	The method of dissertation examination shall be as follows. Dissertation reviews are conducted by the Dissertation review committee, which is established for each dissertation, after comprehensively judging the content of the dissertation, the presentation of the dissertation in public, and the final examination 1) In principle, the dissertation review committee shall consist of one primary examiner and four or more secondary examiners, including one expert outside the degree program (a faculty member of another degree program within the university, a faculty member in charge of a graduate school at another university, or a researcher at a research institution). 2) Doctoral dissertation defense will be approximately 60 minutes in length, including questions and answers. 3) The final examination will be oral or written, focusing on the dissertation and its related fields. The examination will be closed to the public and will be approximately 60 minutes in length.

Curriculum Policy

The purpose of this program is to foster individuals who will be involved in research to utilize information in various human activities such as academics, education, daily life, and culture through an interdisciplinary approach that integrates the humanities and sciences, and to provide them with the general and specialized knowledge and abilities described in the Diploma Policy.
Curriculum in both Japanese and English for students who enrolled in either the spring semester (April) or the fall semester (October), will be developed in an integrated manner.

Curriculum Design Framework	– The curriculum consists of the Research Seminar Courses and Research Practice Courses unique to this degree program. – The Research Seminar Courses consist of Informatics Seminar, Synthetic Seminar on Informatics I, Synthetic Seminar on Informatics II and Synthetic Seminar on Informatics III taught by advisors. The Informatics Seminar provides interactive research guidance to help students acquire communication competence, internationality competence, and expertise in informatics etc. In the Synthetic Seminar on Informatics, students receive research guidance to acquire the Competence of knowledge creation, management skills, research skills and a sense of ethics in informatics. – The Research Practice Courses group consists of Research Instruction, PBL, and Research Internship, MDA-related courses. In Research Instruction, students are expected to acquire leadership competence and ethics in informatics etc. by supervising the graduation research of students under the supervision of their academic advisors, assuming that they will become university faculty members in the future. Internships allow students to acquire practical research methods and leadership competence etc. by engaging in research activities at organizations other than the degree program to which they belong, such as international research institutions, national laboratories, corporate laboratories, and university laboratories. – Each subject is evaluated according to the evaluation method described in the syllabus.

Teaching and Learning Methods	– Graduate General Education Courses, Interdisciplinary Foundation Courses, Degree Programs' Common Courses and lecture courses of other graduate schools or degree programs of the University are selected and studied as necessary. – In the Research Seminar Courses, students solidify the foundation of their research in Synthetic Seminar on Informatics I, come into contact with research from various fields in Informatics Seminar, and consolidate their research results in Synthetic Seminar on Informatics II and III. – 2 or more credits from Research Practice Courses will be selected and studied as necessary. – Regardless of the entrance examination category and the instructional language, the prescribed credits may be included in the completion requirements.

Admission Policy

Desired Student Profile	– Individuals who strive with a sense of purpose to take an interdisciplinary approach to the formulation and resolution of problems concerning the utilization of information. – Individuals who have sufficient fundamental skills, communication skills, presentation skills, and language skills to be active internationally. – Individuals who are capable of planning a research schedule, conducting the research, and finally, building on research outcomes.
Student Selection Process	Selection will be based on a comprehensive evaluation that includes the oral examination results and the application review. Apart from the General Selection Process, there are several other selection processes: the Special Selection Process for Recommended Applicants for those who have obtained a master's degree with research achievements or who are expected to obtain a master's degree with excellent grades, the Special Selection for Working Individuals for those work working experience, and the Special Selection Process of Global Individuals in English for those entering the program in October.

Learning Support Framework

Academic Support	– The doctoral program (Seminar course) “Project Based Learning” provides practical content that enables students to manage their own research progress and acquire the skills to appropriately revise their plans with advice from their instructors. – In the doctoral program (Seminar/required course) “Informatics Seminar”, multiple presentation opportunities are provided to support time management for writing doctoral dissertations, and students are required to draw a roadmap to obtaining their degree in their presentations. In addition, there are opportunities to receive direct advice on this roadmap from all faculty members who are qualified to supervise doctoral programs and students.

Opportunities for Peer Interaction	– The Doctoral program (Seminar course) “Informatics Seminar” (seminar course) fosters a peer effect towards doctoral dissertations by requiring students to write reports in which they evaluate each other's research presentations. – In the Doctoral program (Seminar course) “Research Supervision Practice”, students present and discuss laboratory management and research supervision methods. – Student tutors are assigned to international students.
Opportunities for Student–Faculty Interaction	– Student meetings are held jointly for master's and doctoral students, allowing them to freely exchange opinions about Informatics degree program. – Multiple faculty members provide group guidance with the aim of discussing each other's research progress and receiving advice from different perspectives. – The doctoral program (Seminar course) “Informatics Seminar”, requires the attendance of all faculty members qualified to supervise doctoral program research, and serves as a forum for discussion that allows students and faculty to exchange research ideas across research laboratories. – Students can participate in a lunch colloquium held approximately once a month to promote interdisciplinary research, providing an opportunity for them to discuss the latest research topics with faculty members.

Approaches to Assuring and Enhancing Educational Quality

As part of the degree program, a PDCA cycle has been established that refers to direct assessment data of competences from the previous year and leads to educational improvements in the following years. Specifically, under the degree program leader, the Curriculum Design Group, Research Advisory Group, and Diploma Assessment Group are formed, with regular information sharing within the steering committee ensuring coordination between the groups. As a result, a system has been established that consistently works on improving the content of curricula and research guidance based on the results of competence evaluation. Decisions and discussions within each group are first reviewed and coordinated by the steering committee, and then shared and discussed among all the faculty members at the degree program faculty meeting held once a month. Through this process, a common understanding of the educational policies and areas for improvement is formed across the entire program.

Furthermore, alongside these efforts, faculty members regularly participate in faculty development programs at the Graduate School of Comprehensive Human Sciences, strict implementation of syllabus reviews using checklists based on categories independently established by the Curriculum Design Group, and feedback is provided to the instructors of each course based on class evaluation results.

Through these processes, continuous improvement in the quality of educational practices by individual faculty members is also pursued.

Doctoral Program in Human Biology

■ Doctor of Philosophy in Human Biology

Program Educational Objectives

To foster individuals who understand the mechanisms of human life maintenance, adaptation, and inheritance, who have acquired multidisciplinary expertise and advanced research skills that can contribute to the resolution of global issues related to human health, and who have the qualities of top international leaders and highly skilled professionals who can lead the creation of a society where people can live their lives as best they can.

Graduate Profile	Doctoral students who complete this program will have the ability to identify issues, make breakthroughs (planning and logical persuasion), and complete tasks in order to form an international consensus to solve global issues. They will be able to lead internationally feasible solutions to global issues in industry and scientific administrative organizations, promote entrepreneurship in new industries necessary to solve problems, and become research/education/international coordinators who are eagerly awaited by university administrations.

Diploma Policy

The degree of Doctor of Philosophy in Human Biology is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Professional skills: Academic skills in human biology necessary for solving global issues.	①Does the student have the knowledge and skills to establish an original research theme and obtain excellent research results in the field of human biology? ②In the field of human biology, can the student tackle new problems by making full use of multidisciplinary methodologies?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Connoisseurship: Ability to independently discover issues that may lead to a paradigm shift.	①Can the student accurately grasp the essence of new and unknown issues that arise? ②Can the student propose solutions to problems based on flexible and multifaceted ideas, without being limited to conventional knowledge and skills?
	8. Breakthrough ability: Ability to solve problems with sincerity and diligence.	①Does the student have the firm will necessary to explore the nature of the unknown problem? ②Can the student formulate a plan for solving a problem and persistently carry it out with high motivation and a sense of ethics? ③ As a leader, can the student gather appropriate individuals and build a network to solve problems?
	9 Conclusion: Ability to disseminate the results of solutions to society and apply them to social contribution.	①Can the student summarize and present the results of his/her research in an academic paper? ②Can the student, with an understanding of social conventions and economic systems, turn his/her research results into intellectual property and apply them to the needs of society from an international and regional perspective?
Guidelines for Assessing Learning Outcomes	The competences specified in the Diploma Policy are assessed through the following direct evaluation methods: – Curriculum-based assessment: Faculty advisors and course instructors evaluate student performance throughout the program, based on outcomes embedded in required courses and other curricular components. – Portfolio assessment (GLidD): The program employs GLidD (Growth & Learning Identification powered by Instructional Design), a portfolio-based system enabling continuous, visualized monitoring and evaluation of competence attainment. – Qualifying Examination 1 (QE1): Administered by the end of the second year, conditional upon completion of at least 60 credits. Competence attainment is examined through document review, oral presentation, and oral examination. – Midterm dissertation presentation: Conducted in the fourth year to confirm attainment of the prescribed competence standards through document review, oral presentation, and oral examination. – Qualifying Examination 2 (QE2) and preliminary dissertation review: Administered in the fifth year, conditional upon completion of at least 72 credits. Competence attainment is examined through document review, oral presentation, and oral examination.	

Guidelines for Assessing Learning Outcomes	– Final dissertation review: Conducted in the fifth year to verify attainment of the competence standards required for degree conferral through document review, oral presentation, and oral examination.
Evaluation Criteria for Degree Theses/ Dissertations	Level standards required for the degree thesis The applicant must be recognized as having the ability to set up an original and outstanding theme in human biology, to obtain results appropriate for a doctoral degree, and to compile the results in an appropriate style. The applicant must also be recognized as having the ability to understand the needs of society in the field, to set up the necessary implementation objectives, to promote research and practice on his/her own, to summarize the results, and to publish academic papers that are highly evaluated internationally by industry or academia. The expert committee shall consist of one primary examiner and at least three secondary examiners. The primary examiner shall be appointed by the review committee from among the research advisors of the degree program, and the secondary examiners shall be appointed by the review committee from among the research advisors or course instructors of the degree program. The secondary examiners shall include the applicant's primary advisor, and in addition to faculty members of the degree program, faculty members of other academic institutions, university faculty members of other universities, or those recognized by the review committee as having equivalent or superior research achievements, and one faculty member from overseas or from industry who serves as a secondary advisor may be added. Review method and review items, etc Based on the dissertation, oral presentation and question-and-answer session. The examination items are as follows. (1) Human ability suitable for a top world leader capable of leading globally (2) Planning ability and originality (ability to explain the setting of the theme, significance of the plan, originality, feasibility, and expected results) (3) Results in practice (quality and quantity of research and activity results) (4) Project promotion ability (reliability of results, significance of results, understanding of results, planning) (5) Summary skills (ability to compose a proposal or academic paper by layering results, ability to create logical and persuasive documents, presentation skills)

Curriculum Policy

Understand the concept of human biology, acquire the expertise of epigenetic biomolecules science and its control technology that cannot be handled by conventional central dogmas centered on DNA analysis, and apply these findings to the field of society. The educational course for cultivating connoisseurs, breakthroughs, and completeness to be utilized to solve problems will be organized as follows.

Curriculum Design Framework	– Through the courses in “Basic Subjects”, students will acquire (1) a strong desire to play an active role in the world, (2) a sincere spirit, a sense of ethics, the ability to negotiate internationally, and the fundamentals of leadership and entrepreneurship, and (3) the ability to adapt to the environment and the practical ability to learn to navigate the globe, extracting problems to be solved from complex realities. – By taking the course in “Medical Subjects”, “Molecular Subjects”, and “Mathematics and Computational Science” belonging to “Basic Specialized Subjects”, students will acquire (1) knowledge of human biology at a level equivalent to that of Japanese physicians, (2) specialized knowledge of chemical substances and their research methods, and (3) exercises in computer-aided biological research. In this course, students will acquire computer-aided complex research methods for research on human subjects, where experimental research is limited. – Through the courses categorized in “Other Subjects” of “Basic Specialized Subjects, students will systematically learn about the latest achievements in human biology and research methods in the life sciences. – With the aim of improving each student's expertise through “Specialized Subjects”, students will deepen their specialized knowledge and skills in their chosen field, develop their research skills, and learn how to extrapolate the results of animal experiments to humans by introducing computational science. – In the third through fifth years, students develop their individuality and establish their own future career goals in the world. – In addition to the primary advisor, two or more secondary advisors, including one from overseas universities, industry, or independent research institutes, will be selected for specialized research through regular multi-teacher guidance using e-mail, the Internet, and other means of communication.

Teaching and Learning Methods	The standard course schedule is shown below. – By the end of the second year, students must earn 60 credits in required and elective courses and pass QE1. – In the first half of the fourth year, a midterm evaluation is conducted by the midterm evaluation committee, and students receive guidance on the preparation of their dissertations. – Students are eligible to submit a dissertation if they pass the midterm evaluation, earn 72 credits in required and elective courses, acquire a certain level of English proficiency (TOEIC 860 or higher, etc.), pass the QE2, publish (including in print) at least two original papers in English (one as the first author) in journals with an established review system and are certified as passing by the preliminary dissertation review committee established in the second half of the fifth year. – Upon submission of the dissertation, the dissertation review committee is established, and the dissertation review and final examination are conducted.

Admission Policy

Desired Student Profile	This degree program seeks individuals who have the ability to understand the mechanisms of maintenance, adaptation, and inheritance of human life, and who have the qualities to become global leaders in a wide range of industry, academia, and government.
Student Selection Process	We do not question the amount of knowledge that the applicant currently possesses, but rather evaluate the applicant's capabilities, specifically whether they can reason logically using the given environment and their current knowledge and skills, whether they can explain things to others in an easy-to-understand manner, whether they can understand others' explanations, and how the applicant deals with difficulties when they arise.

Learning Support Framework

Academic Support	The portfolio-based achievement assessment method GLidD (Growth & Learning identification powered by Instructional Design) enables students to reflect on their learning progress and clarify their objectives. It also allows academic advisors to monitor students' learning status and create opportunities to enhance support and guidance.
Opportunities for Peer Interaction	Through the tutor system, senior students provide essential support to new students, enhancing peer effects among students.
Opportunities for Student–Faculty Interaction	The co-academic advisor system promotes interaction between students and faculty, aiming to enhance learning motivation and the quality of research.

Approaches to Assuring and Enhancing Educational Quality

- Regarding the Admission Policy, Curriculum Policy, and Diploma Policy, the educational aims and objectives of the degree program are shared between students and faculty through orientation for students and faculty meetings and departmental faculty development sessions for faculty.
- Syllabi undergo systematic review and improvement with each update. Grading policies are reviewed and shared annually. Grade distribution is verified and improved based on these policies.
- Regular surveys are conducted for current students and graduates. Results are shared at faculty meetings and departmental faculty development sessions to enhance educational quality.
- After evaluating and compiling student learning outcomes at the Curriculum Committee and Degree Examination Committee, the compiled results are deliberated at the Steering Committee to verify the validity of the curriculum and the appropriateness of instruction.

Doctoral Program in Life Science Innovation (Disease Mechanism)

■ Doctor of Philosophy in Disease Mechanism

Program Educational Objectives

The Doctoral Program in Life Science Innovation cultivates highly specialized professionals or researchers who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, produce internationally highly appraised research outcomes, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	In the doctoral course, students will use the knowledge and skills acquired in the master's course to develop “researchers and highly-skilled professionals who can be immediately effective in the field of biomedical sciences by enhancing research management, conducting internationally acclaimed original research that leads to innovative treatments for intractable diseases, and disseminating the research results internationally”.

Diploma Policy

The degree of Doctor of Philosophy in Disease Mechanism is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Innovation ability: Ability to make innovations in the areas of life science.	①If there is the awareness and motivation to create new knowledge and pass it along to the society in the areas of life science ②If the research techniques and reasoning skills for the theory and practice that lead to innovation creation in the areas of life science were gained ③If issues that have not been revealed in Pathophysiology were identified and solved ④If there is the motivation to identify and solve cross-disciplinary research tasks in cooperation with researchers from different areas and not just one's own area
	7. Specialized knowledge: Leading-edge knowledge in the area of expertise	①If leading-edge specialized knowledge about Pathophysiology was gained ②If a research plan for solving unsolved issues was drawn up based on gained specialized knowledge
	8. Advanced practical English: Command of English sufficient for performing various activities involving research in the international society	①If the presentation ability that can impact the international society when research outcomes are reported or shared in English was gained ②If the English proficiency and knowledge to debate equally with researchers active in the front lines were gained

Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Doctoral Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is conducted, and one year before the expected completion, Achievement Evaluation II and the Midterm Review are held. Through document review and an oral examination, these evaluations are administered to determine whether the student has attained the required level of the competences specified in the Diploma Policy. – Five months prior to the expected completion, Achievement Evaluation III and the Preliminary Thesis Review are conducted. Through document review and an oral examination, these evaluations are administered to verify that the student has fully achieved the competences specified in the Diploma Policy, and to determine their eligibility to take the Final Examination. – The Final Examination is conducted, in which the thesis is evaluated through a review and an oral examination. Through this process, a final assessment is made to confirm that the student has fully achieved the competences specified in the Diploma Policy at the required level.
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree dissertation must be the results of work in which the diploma applicant took the initiative and must contain research findings that are unprecedented and internationally highly appraised and that contribute to make strides in the areas of Pathological mechanism field. The degree dissertation must be written in English logically and scientifically and must be constructed in an appropriate format as a degree dissertation. 【Review board members】 A dissertation is reviewed by an exclusive board formed by one chief reviewer and three or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the three or more sub-reviewers, two or more faculty members qualified to supervise the research in the Program must be included. The four or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the four or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain his or her degree thesis content and then questioned by exclusive board members about what he or she has explained. The presentation of dissertation content and a question-and-answer session, which are part of the final exam, are publicly administered. During this examination, in which the applicant is required to make a presentation about his or her degree dissertation in English logically and scientifically, the applicant is evaluated to see if he or she can convince the reviewers sufficiently by answering the reviewers' questions with insight and by using the advanced specialized knowledge of the areas of Biomolecular materials field and including the latest research trends.

Doctoral Program in Life Science Innovation (Disease Mechanism) /
Doctor of Philosophy in Disease Mechanism

Curriculum Policy

Students are engaged in the research activities for identifying and solving unsolved issues for making innovations in the realms of Pathological mechanism area. The curriculum includes internship subjects to support students in making innovations, for which they need to have the high awareness and motivation to work on research tasks in very different and/or cross-disciplinary areas in cooperation with researchers in different areas not just one's own area of expertise. In addition, to gain the cross-disciplinary way of thinking with the big picture in mind and cultivate the world's top-class advanced specialized research ability, the curriculum also organizes seminars taught by researchers who are active in the front lines and belong to overseas research institutes.

Curriculum Design Framework	– The curriculum in the Pathophysiological mechanism area realms are composed of Major Subjects, the General Foundation Subjects shared by the six realms of the Master's Program in Life Science Innovation (Disease Mechanism, Drug Discovery, Food Innovation, Environmental Management, Bioinformatics, Biomolecular Engineering), and Graduate General Education Courses. With the Major Subjects, in addition to the lectures for cultivating the expert abilities in bioinformatics, students are supervised for Pathophysiological mechanism research in the laboratory of each student. – Competence of knowledge creation is gained through doctoral dissertation creation, etc. – Management competence is gained through “Doctoral Competence Development”, etc. – Communication competence is gained with “Practices in Life Science Innovation”, etc. – Leadership competence is gained through “Doctoral Research in Life Science Innovation”. – Competence in Internationality is gained through “Doctor's Life Science Innovation Seminar”, etc. – Innovation ability is gained through General Foundation Subjects, Major Subjects, etc. – Specialized knowledge is gained through “Doctoral Research in Life Science Innovation”, etc. – Advanced practical English is gained through through “Doctor's Life Science Innovation Seminar”, etc.
Teaching and Learning Methods	– With the understanding of the latest research trends in Pathological mechanism, students identify issues that have not been revealed and draw up and carry out an appropriate research plan for solving them. Further, through critical debates with supervisory faculty members, students develop the plan into a research that leads to produce life science innovations. – Obtained research findings are presented in academic journals, etc. With this, students improve their English proficiency, and in the process, gain reasoning skills. – With General Foundation Subjects and Graduate General Education Courses, students learn the latest research trends in the areas of life science and also improve English presentation ability. – Through internships, you will hone your research skills through the experience of collaborating with researchers outside the field to create new knowledge.

Doctoral Program in Life Science Innovation (Disease Mechanism) /
Doctor of Philosophy in Disease Mechanism

Admission Policy

Desired Student Profile	We seek candidates who have the sufficient qualities to gain the basic research abilities that are expected to make innovations in the areas of Pathological mechanism area, the specialized knowledge necessary to achieve it, and good command of English serving for various research activities in the international society.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess master's degree level specialized knowledge (excellence in the current academic performance), and the ability to explain concretely in English about research backgrounds, research plans and about passing along research findings to the society. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation and fundamental research skills to drive innovation in the field of Pathological Mechanism, as well as their English proficiency (equivalent to CEFR level B2 or higher), which is necessary for conducting research activities in the Doctoral Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Doctor's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Doctoral Program in Life Science Innovation (Drug Discovery)

■ Doctor of Philosophy in Medical Science

Program Educational Objectives

The Doctoral Program in Life Science Innovation cultivates highly specialized professionals or researchers who possess the world's top-class advanced specialized research ability with cross-disciplinary mind from a higher perspective, open up a new strides in life science research using bioresources, produce internationally highly appraised research outcomes, and are globally active in the areas of research and development of innovative pharmaceutical products and functional foods and in the areas of their maintenance and administration.

Graduate Profile	In the doctoral course, students will use the skills and knowledge acquired in the master's course to develop “researchers and highly-skilled professionals who can enhance their research management skills, conduct internationally acclaimed original research that leads to the development of innovative drugs, disseminate the results of their research internationally, and be immediately effective in the development of innovative drugs”.

Diploma Policy

The degree of Doctor of Philosophy in Medical Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?

	Competences	Evaluation perspectives
Knowledge and Skills	6. Innovation ability: Ability to make innovations in the areas of life science.	①If there is the awareness and motivation to create new knowledge and pass it along to the society in the areas of life science ②If the research techniques and reasoning skills for the theory and practice that lead to innovation creation in the areas of life science were gained ③ If issues that have not been revealed in Drug discovery development studies were identified and solved ④ If there is the motivation to identify and solve cross-disciplinary research tasks in cooperation with researchers from different areas and not just one's own area
	7. Specialized knowledge: Leading-edge knowledge in the area of expertise	①If leading-edge specialized knowledge about Drug Discovery and Development was gained ②If a research plan for solving unsolved issues was drawn up based on gained specialized knowledge
	8. Advanced practical English: Command of English sufficient for performing various activities involving research in the international society	①If the presentation ability that can impact the international society when research outcomes are reported or shared in English was gained ②If the English proficiency and knowledge to debate equally with researchers active in the front lines were gained
Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the Diploma Policy are assessed using the following direct evaluation methods. – Based on a curriculum designed to achieve the competences defined by the Doctoral Program in Life Science Innovation, student outcomes—including work from required subjects—are evaluated continually by course instructors, supervisory faculty members, and thesis committee members from enrollment to completion. – At the end of the first year, Achievement Evaluation I is conducted, and one year before the expected completion, Achievement Evaluation II and the Midterm Review are held. Through document review and an oral examination, these evaluations are administered to determine whether the student has attained the required level of the competences specified in the Diploma Policy.	

Guidelines for Assessing Learning Outcomes	– Five months prior to the expected completion, Achievement Evaluation III and the Preliminary Thesis Review are conducted. Through document review and an oral examination, these evaluations are administered to verify that the student has fully achieved the competences specified in the Diploma Policy, and to determine their eligibility to take the Final Examination. – The Final Examination is conducted, in which the thesis is evaluated through a review and an oral examination. Through this process, a final assessment is made to confirm that the student has fully achieved the competences specified in the Diploma Policy at the required level.
Evaluation Criteria for Degree Theses/ Dissertations	【Level standards required for the degree thesis】 The degree dissertation must be the results of work in which the diploma applicant took the initiative and must contain research findings that are unprecedented and internationally highly appraised and that contribute to make strides in the areas of Drug discovery and development field. The degree dissertation must be written in English logically and scientifically and must be constructed in an appropriate format as a degree dissertation. 【Review board members】 A dissertation is reviewed by an exclusive board formed by one chief reviewer and three or more sub-reviewers. The chief reviewer must be a faculty member assigned to supervise the research in the Program. As the three or more sub-reviewers, two or more faculty members qualified to supervise the research in the Program must be included. The four or more reviewers of the exclusive board must include one or more reviewers from each of the both internal and external Program faculty members, and this is how diploma examination is administered in a system cooperative between internal and external faculty members. In addition, as the four or more reviewers of the exclusive board, no more than one reviewer who does not belong to the Program can be included. 【Review method and review items, etc.】 The applicant is asked to explain his or her degree thesis content and then questioned by exclusive board members about what he or she has explained. The presentation of dissertation content and a question-and-answer session, which are part of the final exam, are publicly administered. During this examination, in which the applicant is required to make a presentation about his or her degree dissertation in English logically and scientifically, the applicant is evaluated to see if he or she can convince the reviewers sufficiently by answering the reviewers' questions with insight and by using the advanced specialized knowledge of the areas of Drug discovery development field and including the latest research trends.

Curriculum Policy

Students are engaged in the research activities for identifying and solving unsolved issues for making innovations in the realms of Drug discovery and development area. The curriculum includes internship subjects to support students in making innovations, for which they need to have the high awareness and motivation to work on research tasks in very different and/or cross-disciplinary areas in cooperation with researchers in different areas not just one's own area of expertise. In addition, to gain the cross-disciplinary way of thinking with the big picture in mind and cultivate the world's top-class advanced specialized research ability, the curriculum also organizes seminars taught by researchers who are active in the front lines and belong to overseas research institutes.

Curriculum Design Framework	– The curriculum of the Drug discovery development area consists of Major Subjects, General Foundation Subjects common to all six fields of the degree program (Disease Mechanism, Drug Discovery and Development, Food Innovation, Environmental Control, Bioinformatics, and Biomaterials), and common subjects for graduate students. In addition to the lectures in the Major Subjects, students receive research guidance on Drug discovery development in the laboratories to which they belong. – Competence of knowledge creation is gained through doctoral dissertation creation, etc. – Management competence is gained through “Doctoral Competence Development”, etc. – Communication competence is gained with “Practices in Life Science Innovation”, etc. – Leadership competence is gained through “Doctoral Research in Life Science Innovation”. – Competence in Internationality is gained through “Doctor's Life Science Innovation Seminar”, etc. – Innovation ability is gained through General Foundation Subjects, Major Subjects, etc. – Specialized knowledge is gained through “Doctoral Research in Life Science Innovation”, etc. – Advanced practical English is gained through through “Doctor's Life Science Innovation Seminar”, etc.
Teaching and Learning Methods	– With the understanding of the latest research trends in Drug discovery and development, students identify issues that have not been revealed and draw up and carry out an appropriate research plan for solving them. Further, through critical debates with supervisory faculty members, students develop the plan into a research that leads to produce life science innovations. – Obtained research findings are presented in academic journals, etc. With this, students improve their English proficiency, and in the process, gain reasoning skills. – With General Foundation Subjects and Graduate General Education Courses, students learn the latest research trends in the areas of life science and also improve English presentation ability. – Through internships, you will hone your research skills through the experience of collaborating with researchers outside the field to create new knowledge.

Doctoral Program in Life Science Innovation (Drug Discovery) /
Doctor of Philosophy in Medical Science

Admission Policy

Desired Student Profile	We seek candidates who have the sufficient qualities to gain the basic research abilities that are expected to make innovations in the areas of Drug discovery and development area, the specialized knowledge necessary to achieve it, and good command of English serving for various research activities in the international society.
Student Selection Process	– Candidates are selected through document screening to evaluate if they possess master's degree level specialized knowledge (excellence in the current academic performance), and the ability to explain concretely in English about research backgrounds, research plans and about passing along research findings to the society. – Through an English proficiency test and an oral examination, candidates are evaluated on their motivation and fundamental research skills to drive innovation in the field of Drug Discovery, as well as their English proficiency (equivalent to CEFR level B2 or higher)which is necessary for conducting research activities in the Doctoral Program in Life Science Innovation.

Learning Support Framework

Academic Support	In the Doctor's Life Science Innovation Seminar, key research skills—such as presentations, grant writing, and CV preparation—are covered by international faculty, including those from the University of Oxford. Laboratory performance is assessed through supervisory interviews, with feedback provided based on records of daily research activities.
Opportunities for Peer Interaction	Research presentations and journal clubs are conducted online in small groups throughout the year,providing opportunities for active discussions even among students from different disciplines.
Opportunities for Student–Faculty Interaction	Sessions are organizedat the Tsukuba Conference (odd-numbered years) and Tsukuba Global Science Week (even-numbered years) to facilitate broad interaction between students and faculty. When international faculty conduct in-person seminars, networking events with students are organized in conjunction.

Approaches to Assuring and Enhancing Educational Quality

Every year, the three policies of the degree program are explained to faculty members, along with the principles of credit acquisition, grading criteria and policies, and the degree completion process. Additionally, course evaluation results are shared, and faculty members provide feedback based on their reflections on teaching and the student survey results. For achievement evaluations, a review session is held exclusively among evaluators to discuss the assessment results and exchange opinions aimed at improving educational quality. In addition, the Degree Programs Steering Committee regularly evaluates students' learning outcomes by tracking Achievement Evaluation scores, and evaluates the validity of the curriculum and evaluation criteria, as well as the appropriateness of academic guidance.

Joint Master's Program in International Development and Peace through Sport

■ Master of Arts in International Development and Peace through Sport

Program Educational Objectives

Purpose of this English-Medium program is to train future practitioners and researchers who can contribute to the development of international peace, friendship, and affluent local communities and demonstrate a leadership role and responsibilities by using theoretical and practical knowledge of sport, health and physical education.

Graduate Profile	Master of Arts in International Development and Peace through Sport will be awarded to those who have fulfilled the objectives of the program as stipulated in the University of Tsukuba Graduate School Regulations and the National Institute of Fitness and Sports in Kanoya Regulations and who have been certified by the final examination to have the following abilities 1. Knowledge, analytical skills, and a sense of mission regarding international affairs and policies and global-scale issues 2. Global perspective and leadership that can be demonstrated in practice 3. Basic knowledge and practical skills in sports, physical education, and health 4. Communication and management skills for international contribution

Diploma Policy

The degree of Master of Arts in International Development and Peace through Sport is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge application competence: Ability to contribute to society with advanced knowledge	①Can you apply knowledge gained through research and other activities in society? ②Can you identify new problems, even in other fields of expertise, based on broad knowledge?
	2. Management competence: Ability to appropriately address challenges from broad standpoints	①Can you take on major tasks with systematic planning? ②Can you understand and solve problems from multiple perspectives?
	3. Communication competence: Ability to accurately and clearly communicate expert knowledge	①Are you capable of efficient communication for research purposes? ②Can you discuss research or research-specific knowledge with experts from your own field and from other fields?
	4. Teamwork competence: Ability to work with a team and actively contribute to the achievement of goals	①Do you have experience cooperatively and actively working on challenges as part of a team? ②Have you helped promote projects and activities other than your own research?
	5. Internationality competence: Willingness to contribute to international society	①Are you aware of making contributions to international society and getting involved in international activities? ②Have you obtained the linguistic skills necessary for international information collection and action?
	6. Knowledge, analytical skills, and a sense of mission regarding international affairs and policies and global-scale issues	Has the student acquired knowledge, analytical skills, and a sense of mission regarding international affairs and policies and global issues?
	7. Global perspective and leadership that can be demonstrated in practice	Does the student have a global perspective, leadership skills that can be demonstrated in practical settings, practical skills related to sports, physical education, and health, and communication and management skills for international contribution?
	8. Basic knowledge and practical skills in sports, physical education, and health	Does the student have basic knowledge of sports, physical education, and health as well as the foundation for practical skills?

	Competences	Evaluation perspectives
Knowledge and Skills	9. Communication and management skills for international contribution	Does the student have the communication and management skills to make international contributions?
Guidelines for Assessing Learning Outcomes	When we assess and evaluate students' academic learning outcomes and check competence acquisition status , there are two different assessments (first and second steps), which occur during the program to monitor progress. The first step (during the beginning of fall semester - second year of master program): We require all students to complete midterm report progress of master thesis projects regarding writing structure and progress using question and answer format. Then primary academic advisors and subcommittee members provide feedback, comments, and evaluation to all students. The second step (during the end of fall semester - second year of master program): We require all students complete final oral defence of master thesis project. The primary advisors and subcommittee members evaluate the quality and acceptability of the entire scholarly work based on using guideline of program standard. All results of students' oral defense are approved by all faculty members in the program meeting.	
Evaluation Criteria for Degree Theses/ Dissertations	The dissertation will be reviewed by the primary and two secondary examiners, followed by an oral presentation and question and answer session (questions will be open to the public, not just to the primary and secondary examiners), and the primary and secondary examiners will evaluate the dissertation on a 100-point scale, with a score of 60 or higher being a passing grade. <Examination Criteria for Master's Dissertation.> 1. Appropriateness of the research theme a. The background and problem of setting the research theme, its usefulness to the field, and its artistic and social significance are appropriately presented. b. The research objectives and tasks are appropriate and clear. c. The content of the research contributes to the study of international sport development. 2. Appropriateness of literature research a. Appropriately organizes and overviews previous research related to the research theme. b. Appropriately relates to and utilizes research prior to the student's own research. 3. Validity of the research method a. Appropriate research methods were selected to achieve the research objectives. b. The validity of the selected research method and its methodology is appropriately demonstrated. c. Appropriate ethical considerations are presented in carrying out the research. 4. Consistency of logic a. Consistency and coherence in logical development throughout the research dissertation. b. Logical and clear conclusions on the research purpose and issues are stated based on materials and data.	

Evaluation Criteria for Degree Theses/ Dissertations	5. Uniqueness and originality of the research Uniqueness and originality are present in the research theme, purpose and problem setting, research methods, and conclusions. 6. Appropriateness of the structure and style of the dissertation. <Specific task report> 1. Appropriateness of the research theme a. The background and problem of setting the research theme, its usefulness to the field, and its artistic social significance are appropriately presented. b. The research objectives and tasks are appropriate and clear. c. The content of the research contributes to the study of international sport development. 2. Appropriateness of literature research a. Appropriately organizes and overviews previous research related to the research theme. b. Appropriately relates to and utilizes research prior to the student's own research. 3. Validity of the research method a. Appropriate research methods were selected to achieve the research objectives. b. The validity of the selected research method and its methodology is appropriately demonstrated. c. Appropriate ethical considerations are presented in carrying out the research. 4. Consistency of logic a. Consistency and coherence in logical development throughout the research report. b. Logical and clear conclusions on the research purpose and issues are stated based on materials and data. 5. Practicality of the research Practicality in the field is present in the research theme, purpose and problem setting, research methods, and conclusions. 6. Appropriateness of structure and presentation The dissertation is prepared appropriately in accordance with the dissertation preparation guidelines of the university that comprises this department.

Curriculum Policy

In addition to specialized knowledge and research skills in the two fields of physical education and international development studies, education and research guidance will be provided to cultivate the general knowledge and abilities, including an understanding of diversity, necessary to demonstrate leadership in international development.

Curriculum Design Framework	The Curriculum organization policy following Major Subjects are offered in order to acquire specialized skills appropriate to the degree. In addition, by recommending the completion of 2 credits from the Degree Programs' Common Courses, Inter-disciplinary Foundation Courses, and Graduate General Education Courses, basic knowledge, broad perspectives, and general knowledge and abilities are further cultivated. **Lecture Course (14 credits or more)** – Acquire knowledge that will form the basis of the abilities to be acquired in the General Foundation Subjects (International Development and Peace through Sport I, Olympic Movement Studies, Sport Management, Sport, Culture and Society, Health Promotion, Advanced Coach Education, Comparative Physical Education and Research Methodology, etc.). – In applied subjects (International Development and Peace through Sport II, Management and Organization, Project Management, etc.), students will acquire a global perspective, leadership skills that can be demonstrated in practical settings, practical skills related to sport, physical education and health, and communication and management skills for international contribution. – Acquire knowledge and analytical skills in international affairs and policies and global issues in Specific Foundation Subjects (such as Public Policy for Social Development, Multicultural Coexistence, Economic Development, Social Development and Data Management and Analysis for Research). **Exercise Subjects (10 to 12 credits)** – In the intramural courses (problem-based exercises), students select five areas according to their research themes: development and peace through sport; education and youth development through sport; sport and gender, race, and ethnicity; health and the environment; and adapted sport and the elderly. In addition to specialized knowledge of the abilities to be acquired, students will acquire a global perspective and leadership skills that can be demonstrated in practice. – Off-campus courses (JSC seminars, JSC projects, foreign university seminars, international conference seminars, etc.) will help students acquire a global perspective and leadership skills that can be demonstrated in practical settings.

Curriculum Design Framework	**Practical subjects (6 to 8 credits)** – Through the domestic OJP (4 weeks) and the international OJP (16 weeks), students will acquire knowledge and practical skills in the field of the competences to be acquired. **Career path formation** In this major, the characteristics of both the University of Tsukuba and the National Institute of Fitness and Sports in Kanoya are utilized, and through collaboration with JSC, lectures, exercises, and practical training are bridged, and curricula are organized and implemented in a way that directly relates to career path formation. In addition to the “JSC Seminar” and “JSC Project”, in which students participate in the projects developed by JSC, JSC is one of the organizations that implements the domestic OJP (4 weeks), and the information and network of JSC is also utilized in the implementation of the international OJP (16 weeks). The international OJP is important for students' career path formation, and is implemented in cooperation with NGOs, IFs, NFs, and universities outside Japan, as well as through the long-term volunteer program of the Japan International Cooperation Agency (JICA), with which we have an agreement.
Teaching and Learning Methods	– The guidance system consists of one primary adviser and two secondary advisers (one of the secondary advisers is a teacher outside the home university). – In the first year, students are required to take exercises in the field of their choice. – From the second half of the first year to the second year, students participate in On the Job Practice (4-16 weeks) outside Japan. – In the second year, students take a research project. – In the second year, there will be an midterm presentation (October), submission of dissertation (or specific subject report) theme (November), submission of dissertation (or specific subject report) (January), and final examination (January).

Admission Policy

Desired Student Profile	We seek students who have basic knowledge of sports, physical education, and health, who have practical experience in sports-related teaching, and who have a strong sense of mission and purpose for international development and peacebuilding based on their English communication skills and knowledge of international affairs and policies.
Student Selection Process	– Oral examination (200 points): Evaluation of basic knowledge of sport, physical education, and health, presentation of research plan, and question and answer session. (Foreign residents can take the exam online) – English (TOEIC, TOEFL, or IELTS converted to a score of 100 points)

Learning Support Framework

Academic Support	We offer courses on research methodologies including research data management and analysis, which are essential for enhancing the quality of students' master thesis. Furthermore, through various project-based seminars or writing guidance, students are trained to gain academic writing skills necessary for thesis preparation and to cultivate presentation skills in English. Additionally, students also access various opportunities in order to enhance teaching and instructional skills through teaching assistant opportunities and extracurricular instructional experiences. In addition, supplementary lessons and individual guidance are provided as necessary to support student-centered learning and time management.
Opportunities for Peer Interaction	To enhance motivation for learning and the quality of research by leveraging peer effects, mutual learning are provided through group work in project-based seminars and lectures, as well as collaborative experiences in off-campus practicums. Furthermore, through interacting and communicating with TIAS 2.0, which also advances education and research in English language, faculty members are also encouraged to develop international networks through coursework and research opportunity.
Opportunities for Student–Faculty Interaction	Taking advantage of the strengths of this joint master's program with the National Institute of Fitness and Sports in Kanoya, students receive guidance from one primary academic advisor from their home institution and two sub-advisors, including faculty from outside their university, thereby creating a system that requires students to engage with diverse perspectives. In addition, interactive communication is facilitated through individual consultations and research guidance—both face-to-face and online—during international internships, as well as through opportunities such as informal gatherings following interim presentations, where not only research issues but also aspects of campus life can be shared. Moreover, opportunities for collaboration between faculty and students are created through joint research, domestic and international internships, and off-campus seminar practices.

Approaches to Assuring and Enhancing Educational Quality

To ensure the quality of education and promote continuous improvement, reflections of faculty members' teaching approaches are facilitated by the Curriculum Committee, based on class evaluation surveys and the results of master's thesis reviews, with improvements made as necessary. In addition, the content of practical subjects is verified and improved in line with international professional needs through consultations with JSC and partner institutions. Furthermore, research on educational programs and supervision outcomes is conducted and submitted to international journals to verify the international validity of education. Regular curriculum reviews are also conducted at faculty meetings to confirm consistency with the diploma policy and curriculum policy, with improvements made as needed. Overall, based on reviewing competence acquisition status and teaching evaluation, we assess and evaluate students' learning outcomes which verify the validity of the curriculum and the appropriateness of the instruction/guidance.

Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education

■ Doctor of Philosophy in Physical Education and Sport Studies

Program Educational Objectives

With the foundation of educational and research expertise in physical education and sports in higher education at the University of Tsukuba and the National Institute of Fitness and Sport in Kanoya, this program trains advanced physical education, sports instructors and leaders who are equipped with solid specialized knowledge, practical teaching skills and management ability as well as academic skills to effectively carry out the cycle of educational practice and research.

Graduate Profile	– Individuals with solid professional knowledge, practical teaching skills, and management ability who can lead university physical education and sports. – Individuals with applied research skills who can generate practical knowledge in university physical education and sports and translate research findings into education and management – Individuals with the necessary education for advanced instructors and leaders who will lead the quality assurance of physical education and sports education in higher education.

Diploma Policy

The degree of Doctor of Philosophy in Physical Education and Sport Studies is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Practical educational skills: Practical educational skills in college physical education and sports teaching situations	①Can the student develop an appropriate lesson or training implementation plan that takes into account the characteristics of the target audience? ②Does the student have the ability to implement, verify, and improve the proposed plan?

	Competences	Evaluation perspectives
Knowledge and Skills	7. Practical research skills: Ability to conduct practical and useful research on events in the field of university physical education and sports.	①Can the student establish a research theme that is highly original and useful? ②Can the student generate accurate hypotheses and test them in a logical and objective manner?
	8. Ethics: high ethical standards as a leader of collegiate athletic sports	①Can the student respect the human rights of those under their guidance and provide fair and just guidance at all times? ②Does the student abide by social norms and always have an awareness of being a leader?
Guidelines for Assessing Learning Outcomes	Learning outcomes will be assessed through objective confirmation and assessment of the degree to which each competence is mastered, based on guidelines related to degree conferment for each of the following stages. The latter is done through an assessment of degree of achievement, based on the table for evaluation of degree of achievement. The stages and methods related to the evaluation of degree of achievement can be found below. – The assessment of learning outcomes is conducted to confirm and assess the degree to which each competence is mastered, based on guidelines related to degree conferment, through application of the table for evaluation of degree of achievement (Rubric). – Stage One (First Year End of Fall Term): An assessment will be conducted by all research supervisors using the Rubric during the Qualifying Examination (mid-term assessment), which assesses the degree to which each student has achieved mastery of doctoral research skills. – Final stage: During the doctoral thesis review, teaching staff affiliated with the Joint Doctoral Program in Advanced Physical Education and Sports for Higher Education who are members of the thesis examination committee will conduct assessments based on the Rubric. During the educational conference, all teaching staff members will conduct the final assessment related to degree of achievement.	

Evaluation Criteria for Degree Theses/ Dissertations	1. Originality of the research theme and content a. Originality is present in the research theme, problem formulation, research method, and discussion/conclusion. b. The research results have clear academic and social significance, including usefulness to the field and contribution to the academic community. 2. Research design a. The questions are appropriately set in line with the research theme, and the arguments are appropriately developed in response. b. The logic is coherent and the conclusions are clearly drawn. 3. Research methods a. Appropriate research methods are selected for the research theme, purpose, and problem setting. b. In-depth understanding of research methods and mastery of appropriate collection, handling, and analysis of materials and data. c. The interpretation and discussion of the results are reasonable. d. Ethical considerations are taken into account. 4. Understanding of the research area The student has a broad and accurate understanding of prior research, research trends in the field, and related research. 5. Composition and style of the paper The structure and content of the introduction, methods, results, discussion, and conclusions, as well as the method of citation and presentation of notes and references, are appropriate, and the paper has the appearance of an academic dissertation. 6. Review system and review method The dissertation review committee shall consist of at least four members: one primary examiner and at least three secondary examiners (including one faculty member from another department). One of the primary or secondary examiners shall be a faculty member of another major who is not included in the primary or secondary advisors. The dissertation review committee will make a 30-minute presentation on the outline of the dissertation, followed by a question-and-answer session. The committee will review whether the applicant has met the criteria for evaluation of the dissertation, together with confirmation of the applicant's credit acquisition.

Curriculum Policy

For the purpose of cultivating practical educational and research skills, the following curricula will be organized so that the educational and research resources of both Tsukuba University and Kanoya University of Health and Sport Sciences can be utilized while using the remote lecture system.

Curriculum Design Framework	The curriculum consists of four Course groups: “Practical Education Skills Development Courses”, “Practical Research Skills Development Courses”, “Advanced Leadership Education Courses”, and “Doctoral Dissertation Research Skills Development Subjects”. – “Practical Education Skills Development Courses”: To acquire solid professional knowledge and practical education skills and lead university physical education and management abilities in university sports. – “Advanced Leader Education Courses”: To acquire the education necessary to become instructors and leaders in university physical education and sports. – “Doctoral Dissertation Research Skills Development Courses”: To acquire the ability to write and present practical research papers and doctoral dissertations plans as well as practical research skills required for advanced university physical education, sports instructors, and leaders. – “Doctoral Dissertation Research Skills Development Courses”: Students acquire the ability to write and present practical research papers and doctoral dissertation research plans, as well as the practical educational skills required of advanced university physical education and sports instructors.
Teaching and Learning Methods	– In the first and second years of the program, students take practical teaching skills, practical research skills, and advanced supervisor education, as well as Doctoral Dissertation Seminar. – From Max of the second year, students who pass the Qualifying Examination, which is conducted as an assessment of their ability to research a doctoral dissertation, will begin writing their doctoral dissertations. – In the third year, students who prepare a doctoral dissertation and pass the examination will be awarded the doctoral degree.

Admission Policy

Desired Student Profile	We seek individuals who are highly motivated to acquire practical education, management, and research skills to solve problems in the field of education, guidance, and organization management of university physical education and university sports and who have acquired a certain level of academic research skills, such as through a master's course (regardless of the major field).
Student Selection Process	– Document examination (150 points): This includes evaluation of research plan, research achievements, teaching achievements (including organizational management) and educational achievements – Oral examination (100 points): Presentation of research plan, Q&A, English (TOEIC or TOEFL score: converted to 50 points)

Learning Support Framework

Academic Support	– We aim to ensure that research instruction at the National Institute of Fitness and Sports in Kanoya is objective and diverse through the implementation of an instructional system that includes co-examiners. – Support related to understanding research ethics and applications for research ethics approval is provided through research ethics training sessions for sports science as well as university sports practice sessions. – During the Thesis Research Seminar (Spring Term) and Research Presentation Meeting (Fall Term), research support will be provided to first-, second-, and third-year students. They will receive opportunities to present their findings, as well as opportunities to exchange feedback with teaching staff and other students. – For non-degree students, research support will be provided during the Research Presentation Meeting (Fall Term). They will receive opportunities to present their findings, as well as opportunities to exchange feedback with teaching staff and other students.
Opportunities for Peer Interaction	– During the Tsukuba Workshop (Spring Term), which is conducted in the form of a training camp, students will take turns in conducting mock lessons. This workshop is conducted to provide opportunities for exchange, improve learning-related motivation among students, and enhance the quality of lesson implementation.
Opportunities for Student–Faculty Interaction	– Implement the Thesis Research Seminar (Spring Term), conducted by the principal examiner and co-examiners, as well as the Research Presentation Meeting (Fall Term), in which all students and teaching staff participate, creating opportunities for discussion between students and teaching staff that can lead to improvements in research quality. – Promote exchange between students that goes beyond the confines of individual specializations as well as strive for further improvements in motivation for learning, through participation in the Students' Gathering (Fall Term), hosted by the Graduate School of Comprehensive Human Sciences. – Promote participation in study groups and research projects hosted by teaching staff members to foster interest in research.

Approaches to Assuring and Enhancing Educational Quality

- Conduct questionnaire surveys for the purpose of lesson evaluation, as well as having said results reviewed by the executive committee; said results shall contribute to lesson improvement carried out by all teaching staff members.
- Assess the results of evaluations of degree of achievement (objective evaluations) of students alongside instructional staff as well as the educational committee, reporting said results to the executive committee.
- Conduct surveys regarding places of employment following completion, have the executive committee board review societal assessments regarding educational outcomes of the specialization, as well as assess curriculum appropriateness and the relevance of instruction provided.
- To resolve issues and improve the quality of lessons related to physical education and sports for higher education, set up the FD committee and continuously implement assessments of all educational activities, as well as perform improvements targeting the latter. In doing so, ensure that the education provided is of a high standard and strengthen available systems to attain specialization-related goals.

International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health

■ Master of Agro-Biomedical Science in Food and Health

Program Educational Objectives

In response to the challenges that humanity faces on a global scale, such as the maintenance and promotion of good health and the safe supply of food, based on the principle of “medicine and food have the same source”, we will train highly-skilled international professionals with a scientific understanding of the effects of food on health and the specialized and practical skills to bridge the needs of global society and research and development.

Graduate Profile	To develop individuals who have the following knowledge and abilities. – Literacy: Cross-disciplinary thinking skills supported by expertise, language skills to utilize specialized knowledge and abilities – Coordination skills: Discernment and planning skills in overseas fields, dialogue and negotiation skills among multinationals, management skills in different fields and industries – Practical skills: Ability to put ideas into practice and implement them, and the ability to express oneself through presentations and self-promotion. – Ability to link health and food resources: Knowledge of the functionality and medical use of biological resources, knowledge of food-borne diseases and physiological disorders, knowledge of policies related to food resources and health care. – Ability to understand health security issues: knowledge of social medicine, including food resources and chemical safety, including pharmaceuticals – Ability to perceive food security issues: Knowledge on evaluation and development of biological resources (including safety) and use of sustainable food production systems

Diploma Policy

The degree of Master of Agro-Biomedical Science in Food and Health is commenced to those who have fulfilled the requirements for the completion of the Master's programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Literacy: Cross-disciplinary thinking skills, language skills	①Does the student have the ability to think in a cross-disciplinary manner based on his/her expertise? ②Does the student have the language skills to utilize his/her specialized knowledge and abilities?
	2. Coordination skills: Discernment and planning, dialogue and negotiation, management skills	①Does the student have discernment and planning skills in overseas fields? ②Does the student have multinational dialogue and negotiation skills? ③Does the student have the ability to manage in different fields and different industries?
	3. Practical skills: Ability to practice and express oneself	①Does the student have the practical ability to put ideas into practice and implement them? ②Ability to express oneself through presentations and self-promotion
	4. Ability to link health and food resources	①Does the student have knowledge of the functionality and medical use of biological resources? ②Does the student have knowledge of food-borne diseases and physiological disorders? ③Does the student have knowledge of policies related to food resources and medical care?
	5. Ability to understand health security issues	Does the student have knowledge of social medicine, including food resources and chemical safety, including pharmaceuticals?
	6. Ability to understand food security issues	Does the student have knowledge of the evaluation and development of biological resources (including safety) and their use in sustainable food production systems?

Guidelines for Assessing Learning Outcomes	The knowledge and competences outlined in the diploma policy are evaluated as follows: – Based on the curriculum designed for students to achieve the knowledge and competences, supervisors and instructors for each course evaluate students' performance. – Students study at the University of Tsukuba for Semester 1, National Taiwan University for Semester 2, the University of Bordeaux for Semester 3, and one of the three universities selected by the student for Semester 4. In each semester, the level of knowledge and competences achieved by students are assessed through essays, presentations, and oral examinations. – In Semester 4, three examiners selected by the Degree Examination Committee (one chief examiner and two sub-examiners, one from each university) will evaluate students' performance based on the final report, presentation, and oral examination.
Evaluation Criteria for Degree Theses/ Dissertations	①Standard requirements for the degree thesis 1. Mastering fundamental knowledge and skills in global food safety assessment and health maintenance. 2. Having the ability to understand the process, employing professional methods, from problem formulation to solution and the skill to devise and develop practical solutions for real issues concerning the safety assessment of food and the maintenance of global health. 3. Having the ability to engage in service to humanity and society with an international perspective, demonstrating the ability to adapt to different cultures. 4. Having the ability in effective communication and to take on leadership roles in international initiatives. 5. Having the ability to foster creativity and drive innovation through a combination of interdisciplinary education and advanced practical research. 6. Developing a cross-disciplinary mindset that extends beyond one's specialized field. ②Review Board Composition The degree examination committee, comprising faculty members from the University of Tsukuba, National Taiwan University, and the University of Bordeaux, will appoint one chief examiner from the student's home university and two sub-examiners from the other two universities. ③Evaluation Method and Criteria The three examiners will assess the written comprehensive report, oral presentation, and oral examination related to the specific subject research, providing a comprehensive judgment of either pass or fail.

Curriculum Policy

Curriculum Design Framework	<Overall Policy> In addition to cultivating specialized skills related to the efficacy and safety of food resources and health foods for living organisms, the curriculum is organized and implemented with a view to food production and processing. Class subjects are divided into " General Foundation Subjects" to cultivate academic and management fundamentals related to food and health, " Major Subjects I" to cultivate the ability to discover and solve problems through practical learning and the qualities of advanced professionals, and "Major Subjects II" to cultivate expertise in health and food resources. In addition, based on the objective of fostering international advanced professionals with specialized and practical skills who can bridge the gap between global society and research and development, practical learning such as field activities and internships will be emphasized. In order to emphasize the importance of cultivating the ability to conduct appropriate research and analysis on real issues related to "food and health" and to make proposals with practical and pragmatic effectiveness, this department requires the preparation of a "research report on specific issues" as the result of research on specific issues, rather than a master's dissertation. In addition, in order to maximize the merits of the international cooperative educational program among the three universities of Tsukuba University, the University of Bordeaux, and National Taiwan University, the curriculum has been designed so that students can learn the basics of medical science at Tsukuba University in the first semester, and based on that, can study advanced topics on food and health at National Taiwan University and the University of Bordeaux in the second and third semesters. The curriculum is designed so that all students will spend the first semester at the University, the second semester at National Taiwan University, and the third semester at the University of Bordeaux. In the fourth semester, students will study mainly at one of the three universities based on the theme of their specific research project and their career aspirations after completion. <Learning objectives for each semester> In order for the three universities to collaborate and organize and implement a systematic curriculum in sequence according to the purpose of human resource development in this major, the abilities to be cultivated in each semester are as follows. 【Semester 1 / University of Tsukuba】 – Basic professional skills in health and food resources, professional skills in evaluation of biological effects and safety of substances, entrepreneurial spirit, management skills, and professional English skills

Curriculum Design Framework	【Semester 2 / National Taiwan University】 – Expertise in health and food resources, ability to identify and solve problems in the Asian social and natural environment, basic R&D and project management skills in Asian companies 【Semester 3 / University of Bordeaux】 – Expertise in the connection between health and food resources and the evaluation and development of food resources, ability to identify and solve problems in the European social and natural environment, European corporate affairs and food safety policy, career development and professional awareness 【Semester 4 / Home University】 – More specialized skills according to the research theme, enhanced career path through corporate internship, practical skills for post-graduation career <Policy on the arrangement of courses> 【General Foundation Subjects】 – In order to formulate a two-year study plan by grasping the competences and learning content in this program, “Agro-Biomedical Science Group seminar” is arranged as a compulsory subject. (Semester 1 / University of Tsukuba) – In order to develop systematic basic knowledge and the ability to understand and think from the big picture, “Introduction of Agro-Biomedical Science” is a compulsory subject. (Semester 1 / University of Tsukuba) – ” Basic Molecular Nutrition” is a compulsory subject to develop the basic professional skills common to all majors. (Semester 1 / University of Tsukuba) – In order to cultivate the foundation of management, there are courses related to “Entrepreneurship” , and at least 4 credits are required. (Semester 1 / University of Tsukuba / Semester 2 / National Taiwan University) – In order to foster career development and job awareness, “Job or Internship Hunting Including Technological Watch” is a compulsory subject.(Semester 3 / University of Bordeaux) – At least one unit of specialized English is required. (Semester 1 / University of Tsukuba) 【Major Subjects I】 – To cultivate the ability to find and solve problems in a social and natural environment that differs from one's own, “Fusion of Field and Laboratory Studies” will be arranged at the two partner foreign graduate schools. (2nd semester, National Taiwan University / 3rd semester / University of Bordeaux – Common seminar courses include “Agro-Biomedical Science Laboratory Seminar I “Basic Toxicology” (1st semester, University of Tsukuba), “Agro-Biomedical Science Laboratory Seminar II” (2nd semester, National Taiwan University), and “International Scientific Seminars” (3rd semester, University of Bordeaux).

Curriculum Design Framework	– As common practical and experimental subjects, “Research and Development for Agro-Biomedical Science I” (1st semester / University of Tsukuba), “Research and Development for Agro-Biomedical Science II” (2nd semester / National Taiwan University), and “Integrative Unit with Omic and Bioinformatic Tools” (3rd semester / University of Bordeaux) will be arranged. – In order to learn about actual R&D in companies and the basics of project management, “Corporate Internship” will be established in three universities, and at least one of them will be compulsory. In addition, “Biomedical Translation Boot Camp” (2nd semester/National Taiwan University) will be arranged to strengthen the skills to tackle social and environmental related issues in R&D. –【Major Subjects II】 – In the first semester (Tsukuba University), “Critical Path Research Management”, “Cancer Biology”, “Human Pathology and Oncology”, “Health Care Policy and Management”, “Advanced Course on Global Food Security” and “Advanced Food System” will be placed as “Health and Food Resources Subject Group I” in order to develop specialized skills related to health and food resources, focusing on expertise in evaluating the efficacy and safety of substances on living organisms. – In order to develop professional skills in health and food resources, focusing on specialized knowledge of bioscience and technology related to living organisms and food resources, the following courses will be held in the second semester as “Health and Food Resources Subject Group II” (National Taiwan University): “Contemporary Issues in Global Health”, “Cellular Network of Biological Molecules”, “Principle and Application in Health Research Methods”, “Environmental and Occupational Health” , “Measuring Burden of Disease: Methods and Applications”, “Molecular Nutrition”, “Agriculture of Taiwan”, “Biotechnology in Milk Products” and “Applied Translational Microbiology”. – In order to develop in-depth expertise in health and food resources with a focus on the link between health and food resources and the evaluation and development of food resources, the following courses will be offered in the third semester (University of Bordeaux) as “Health and Food Resources Subject Group III”: “Water and Food-borne Microbiological Diseases and Dietary Habits in Human Population”, “Nutrition, Microbiome and Immunity”, “Nutrition, Physiological Regulation and Major Human Diseases”, “Nutrition, Biological Regulation and Major Diseases”, “Nutrition and Health Organization in Europe”, “Impact of Environmental Stresses on Crops Production”, “Integrated and Advanced Plant Breeding”, “Green Biotechnology”, and “Quality of Animal-based Foodstuff” . – In the fourth semester, there are no courses offered by this department as “Major Subjects II”, but students may take courses offered by other departments if deemed necessary in relation to the theme of the Special Subject Research.

Teaching and Learning Methods	– Students will study at Tsukuba University for the first semester, National Taiwan University for the second semester, University of Bordeaux for the third semester, and at their choice of one of the three universities for the fourth semester. – Students must earn at least 15 credits from required and elective courses at each university during the first three semesters, for a total of 45 credits. In addition, students are required to earn the credits of the internship course offered by their home university during the fourth semester. – Each student will be assigned three academic advisors, one from each university, and will study and conduct research in accordance with the theme of the specific subject research under the guidance of the academic advisor during each semester.

Admission Policy

Desired Student Profile	We seek individuals with a background in medical science or bioresource science, a spirit of collaboration, and a strong will to actively address global issues related to health and food across borders and academic disciplines, and to create innovations that contribute to the future vision of humanity and society.
Student Selection Process	Application documents will be accepted at each university. At the time of acceptance, the three universities will mutually confirm that the applicants meet the qualifications for application. The first stage of the selection process will be a document review and group discussion at the university that received the application, and the second stage of the selection process will be an interview with faculty members from the three universities. <First round of selection> At the university where the application is received, documents will be screened based on the application documents, followed by a group discussion. In the first round of the selection process, in addition to the requirements common to all three universities, the university conducting the first round of the selection process may, at its discretion, conduct preliminary interviews and other necessary screening.

Student Selection Process	The documents to be screened shall include the applicant's motivation for application, research plan, academic records and graduation certificate of the applicant's home university (bachelor's course), recommendation letter, and documents certifying English proficiency. These documents will be used to confirm the content and results of the candidate's study in the bachelor's course, the purpose and plan of study in this major, career plans after completion, English proficiency, etc., and to evaluate the candidate's background in “food and health”, will to solve global-scale issues related to “food and health”, and aptitude for internationality and interdisciplinarity. The evaluation items will include the applicant's motivation for applying, the applicant's desire to solve global issues related to food and health, and the applicant's aptitude for international and interdisciplinary perspectives. The evaluation items will be motivation, research plan, study plan, career plan, and writing skills, and will be scored by multiple judges. For English proficiency, TOEFL-iBT: 61 or higher, TOEIC: 600 or higher, IELTS: 5.0 or higher are required for application. Group discussions will be held on the theme of global issues related to food and health. A topic will be provided before the start of the group discussion, and several examinees and one faculty member will form a group to discuss the solutions. In this way, the ability of the candidates to apply their background in medical science or bioresource science to the issues, and their communication skills to proceed with things jointly will be evaluated. The evaluation items will be the level of understanding of global issues related to food and health, ability to speak up, listening to others, coherence of statements, and contribution to the discussion, and will be scored by multiple judges. The academic background of the candidates in the field of “Food and Health” will be evaluated based on the subjects taken in the bachelor's course and their grades, the research plan, and the contents of the group discussion, to ensure that they have a basic background in the field of medical science and bioresource science. <Second round of selection> Interviews will be conducted by faculty members of the three universities. The interview will be held at the university that received the application, and the other two universities will participate via video conference system. At the interview, the applicant's suitability for the program will be evaluated through questions and answers concerning the purpose and plan of study at the program, basic knowledge of “food and health”, career plans after completion of the program, and experience in extracurricular and social activities. The evaluation items are motivation for application, research and study plan, career plan, presentation, and question and answer session, which will be graded by multiple judges. Finally, the results of the document review, group discussion, and interview will be comprehensively evaluated by the three universities to determine acceptance or rejection.

Student Selection Process	Through the above selection process, we will secure students who have a strong academic background in “food and health” and a strong will to solve problems through collaboration, interdisciplinarity, and internationality, and who are appropriate for the goal of development and the educational program of this department.

Learning Support Framework

Academic Support	Students from the University of Tsukuba, National Taiwan University, and the University of Bordeaux participate in an initiation seminar for approximately one month immediately after enrollment to facilitate effective and smooth collaborative learning across the three universities, fostering team building. Additionally, a multipurpose lounge has been established to enable students from all three universities to engage in collaborative learning at any time.
Opportunities for Peer Interaction	Through group work in initiation seminars, excursions, and events at the Graduate School of Comprehesive Human Sciences, we are fostering interaction among students.
Opportunities for Student–Faculty Interaction	At the conclusion of the initiation seminar, faculty members from the University of Tsukuba, National Taiwan University, and the University of Bordeaux conduct interviews with students. This process enables students to select an advisor at each of the three universities whose research aligns with their individual research themes. Furthermore, opportunities for interaction are provided through welcome and farewell parties held at the beginning and end of each semester, as well as through events organized by the Graduate School of Comprehensive Human Sciences and student-led initiatives.

Approaches to Assuring and Enhancing Educational Quality

The Curriculum Committee is established to continuously review and improve the curriculum based on the results of student course evaluation surveys and student academic performance.

School of Integrative and Global Majors

Ph.D. Program in Humanics

Ph.D. Program in Humanics

■ Doctor of Philosophy in Medical Sciences

Program Educational Objectives

Humanics is an academic discipline that focuses on the fundamental principles of physiology and pathology of the human, generating new science and technology to achieve a healthy and comfortable life of human beings in the society. In this program, we cultivate leaders with skills in the fields of both biomedical sciences and physical sciences/engineering/informatics, as well as the capacity to integrate two or more research fields and to tackle flexibly and multifacetedly to the unpredictable future based on their bidisciplinary expertise and research skills.

Graduate Profile	Students who complete this program will be outstanding leaders with the bidisciplinary expertise to incorporate the latest knowledge and technologies in biomedical sciences and physical sciences/engineering/informatics, talk with each other using the laguages of both fields, conceive of new paradigms through a deep understanding of both fields, and integrate them.

Diploma Policy

The degree of Doctor of Philosophy in Medical Sciences is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Bidisciplinary perspective ability	①The ability to accurately identify the essence of unpredicatable humanics issues. ②The abitliy to propose solutions flexibly and multifacetedly based on the bidisciplinary expertise.
	7. Bidisciplinary design ability	①The ability to identify original fusion research projects in the field of humanics. ②To have the knowledge and skills to obtain excellent research results in the fields of humanics.
	8. Bidisciplinary outcome ability	①The ability to design the research plan and tackle to the humanics projects persistently with high motivation and ethical standards. ②The ability to explain the academic and social significance of the research findings and envision their commercialization.

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through an achievement level assessment based on the Achievement Rubric. This assessment evaluates the acquisition status of competences according to the following stages, based on the Diploma Policy. – Based on the curriculum, academic achievements and individual student's performance serve as evidence to be evaluated by the academic advisor and course instructor. – The program's proprietary portfolio-based assessment method (CPx: Career Platform for Humanics) is used to track and evaluate competence attainment.
Evaluation Criteria for Degree Theses/ Dissertations	1) To pass the Qualifying Examination (QE). 2) To achieve the certain level in the portfolio-based achievement assessment system. 3) To have the English and communication skills to negotiate freely in the international community. 4) To understand social demands in the field of medicine, and identify the research question for the dissertation that can be solved by integrating biomedical sciences and physical sciences/ engineering/informatics. They are also able to independently identify research questions that are expected to be overcome in the future based on the results of their dissertation. 5) To have a firm will and a sincere attitude to tackle the humanics projects, and complete the research findings on their own in a dissertation. 6) To publish research articles that are highly renowned internationally by the academic and industrial communities. 7) To explain what is necessary to implement research findings in society.

Ph.D. Program in Humanics / Doctor of Philosophy in Medical Sciences

Curriculum Policy

The curriculum in humanics program cultivates a firm will to identify the essence of humanics research, bidisciplinary expertise in both medical sciences and physical sciences/engineering/informatics, an understanding of the basic technologies of humanics research and the global situation in this field, the ability to independently identify issues that could lead to paradigm shift, and the ability to solve these issues with sincerity and diligence.

Curriculum Design Framework	– In the Common Subjects, we cultivate strong motivation, sincere atitude, rigid ethics, and international communication skills to become leaders in the world through courses including the study of research ethics, entrepreneurship education, internships, and overseas laboratory rotation. – In the Basic Specialized Subjects, students learn basic and clinical medicine, as well as physical sciences, engineering, and informatics, through lectures and practical courses that combine e-learning and problem-based learning (PBL), and cultivate the bidisciplinary expertise required for humanics study. – In the Humanics Specialized Subjects, students choose mentors from both biomedical sciences and physical sciences/engineering/informatics and acquire specialized knowledge and skills through the double-mentoring system based on collaboration among mentors.
Teaching and Learning Methods	The standard course schedule is shown below. – Humanics Forum provides opportunities to 1st grade students to confirm the research plan for Ph.D. dissertation. – A mentor for the sub-field will be selected within 6 months after enrollment. – By the end of the second year, students must earn more than 35 credits from compulsory and elective subjects and pass the Qualifying Examination (QE). – After the QE, the progress will be presented to the dissertation committee once or twice a year. – Students, who passed the QE and earned more than 45 credits from compulsory and elective subjects, must pass the preliminary dissertation examination to qualify the dissertation examination requirements. – The dissertation will be evaluated in peer review and oral examination.

Admission Policy

Desired Student Profile	We are looking for students who have a strong will to contribute to the future of human beings through the discovery and resolution of issues that could be a paradigm shift in the field of humanics, and who meet one of the following criteria – Students have basic knowledge and skills in biomedical sciences or clinical medicine, as well as a strong interest in interdisciplinary research in physical sciences/engineering/informatics. – Students have basic knowledge and skills in one of the fields of physical sciences, engineering, or informatics, as well as a strong interest in interdisciplinary research in the field of biomedical sciences or clinical medicine.

Student Selection Process	The humanics program integrates the knowledge and skills of biomedical sciences, and physical sciences/engineering/informatics to lead a paradigm-shift for overcoming the life and health problems facing human beings. Taking advantage of the characteristics of this program, we will evaluate the applicants on the selection criteria based on expertise in the fields of biomedical sciences and physical sciences/engineering/informatics, advanced creativity, internationality, and the ability to explain to non-specialist researchers. Applicants need to submit a research proposal in English that integrates the fields of biomedical sciences and physical sciences/engineering/informatics, and the research proposal will be evaluated through the oral examination by faculty members from different fields of expertise.

Learning Support Framework

Academic Support	– Support interdisciplinary learning by acquiring knowledge and skills through introductory courses and foundational practical training outside student's original academic field. – In the common subject “Scientific Writing and Publishing”, instruct students on the knowledge and skills necessary for paper writing. – Utilize portfolio-based assessment to enable students to review their learning progress and clarify challenges to encourage self-reflection.
Opportunities for Peer Interaction	– The common subject “Humanics Forum” provides opportunities for interaction among new students and with upperclassmen. – A student group will take the lead in planning and hosting the Humanics Symposium, providing opportunities for exchange and collaboration through the planning and operation process.
Opportunities for Student–Faculty Interaction	– In addition to the main mentor, students will meet with QE examiners for research progress meetings (held every six months) to provide opportunities to receive guidance on their doctoral dissertation research. – With the introduction of double-mentor system and reverse-mentor system, we support interdisciplinary learning and research by promoting collaboration among faculty with a student in its center.

Approaches to Assuring and Enhancing Educational Quality

– Evaluation of student learning outcomes and regular surveys for current students and graduates, are analyzed at the Faculty Meeting and the Curriculum Committee to verify the validity of the curruculum and the appropriateness of the instruction.

Ph.D. Program in Humanics

■ Doctor of Philosophy in Science

Program Educational Objectives

Humanics is an academic discipline that focuses on the fundamental principles of physiology and pathology of the human, generating new science and technology to achieve a healthy and comfortable life of human beings in the society. In this program, we cultivate leaders with skills in the fields of both biomedical sciences and physical sciences/engineering/informatics, as well as the capacity to integrate two or more research fields and to tackle flexibly and multifacetedly to the unpredictable future based on their bidisciplinary expertise and research skills.

Graduate Profile	Students who complete this program will be outstanding leaders with the bidisciplinary expertise to incorporate the latest knowledge and technologies in biomedical sciences and physical sciences/engineering/informatics, talk with each other using the laguages of both fields, conceive of new paradigms through a deep understanding of both fields, and integrate them.

Diploma Policy

The degree of Doctor of Philosophy in Science is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Bidisciplinary perspective ability	①The ability to accurately identify the essence of unpredicatable humanics issues. ②The abitliy to propose solutions flexibly and multifacetedly based on the bidisciplinary expertise.
	7. Bidisciplinary design ability	①The ability to identify original fusion research projects in the field of humanics. ②To have the knowledge and skills to obtain excellent research results in the fields of humanics.
	8. Bidisciplinary outcome ability	①The ability to design the research plan and tackle to the humanics projects persistently with high motivation and ethical standards. ②The ability to explain the academic and social significance of the research findings and envision their commercialization.

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through an achievement level assessment based on the Achievement Rubric. This assessment evaluates the acquisition status of competences according to the following stages, based on the Diploma Policy. – Based on the curriculum, academic achievements and individual student's performance serve as evidence to be evaluated by the academic advisor and course instructor. – The program's proprietary portfolio-based assessment method (CPx: Career Platform for Humanics) is used to track and evaluate competence attainment.
Evaluation Criteria for Degree Theses/ Dissertations	1) To pass the Qualifying Examination (QE). 2) To achieve the certain level in the portfolio-based achievement assessment system. 3) To have the English and communication skills to negotiate freely in the international community. 4) To understand social demands in the field of medicine, and identify the research question for the dissertation that can be solved by integrating sciences and biomedical sciences. They are also able to independently identify research questions that are expected to be overcome in the future based on the results of their dissertation. 5) To have a firm will and a sincere attitude to tackle the humanics projects, and complete the research findings on their own in a dissertation. 6) To publish research articles that are highly renowned internationally by the academic and industrial communities. 7) To explain what is necessary to implement research findings in society.

Ph.D. Program in Humanics / Doctor of Philosophy in Science

Curriculum Policy

The curriculum in humanics program cultivates a firm will to identify the essence of humanics research, bidisciplinary expertise in both sciences and biomedical sciences, an understanding of the basic technologies of humanics research and the global situation in this field, the ability to independently identify issues that could lead to paradigm shift, and the ability to solve these issues with sincerity and diligence.

Curriculum Design Framework	– In the Common Subjects, we cultivate strong motivation, sincere atitude, rigid ethics, and international communication skills to become leaders in the world through courses including the study of research ethics, entrepreneurship education, internships, and overseas laboratory rotation. – In the Basic Specialized Subjects, students learn basic and clinical medicine, as well as sciences, through lectures and practical courses that combine e-learning and problem-based learning (PBL), and cultivate the bidisciplinary expertise required for humanics study. – In the Humanics Specialized Subjects, students choose mentors from both sciences and biomedical sciences and acquire specialized knowledge and skills through the double-mentoring system based on collaboration among mentors.
Teaching and Learning Methods	The standard course schedule is shown below. – Humanics Forum provides opportunities to 1st grade students to confirm the research plan for Ph.D. dissertation. – A mentor for the sub-field will be selected within 6 months after enrollment. – By the end of the second year, students must earn more than 35 credits from compulsory and elective subjects and pass the Qualifying Examination (QE). – After the QE, the progress will be presented to the dissertation committee once or twice a year. – Students, who passed the QE and earned more than 45 credits from compulsory and elective subjects, must pass the preliminary dissertation examination to qualify the dissertation examination requirements. – The dissertation will be evaluated in peer review and oral examination.

Admission Policy

Desired Student Profile	We are looking for students who have a strong will to contribute to the future of human beings through the discovery and resolution of issues that could be a paradigm shift in the field of humanics, and who meet one of the following criteria – Students have basic knowledge and skills in biomedical sciences or clinical medicine, as well as a strong interest in interdisciplinary research in physical sciences/engineering/informatics. – Students have basic knowledge and skills in one of the fields of physical sciences, engineering, or informatics, as well as a strong interest in interdisciplinary research in the field of biomedical sciences or clinical medicine.

Student Selection Process	The humanics program integrates the knowledge and skills of biomedical sciences, and physical sciences/engineering/informatics to lead a paradigm-shift for overcoming the life and health problems facing human beings. Taking advantage of the characteristics of this program, we will evaluate the applicants on the selection criteria based on expertise in the fields of biomedical sciences and physical sciences/engineering/informatics, advanced creativity, internationality, and the ability to explain to non-specialist researchers. Applicants need to submit a research proposal in English that integrates the fields of biomedical sciences and physical sciences/engineering/informatics, and the research proposal will be evaluated through the oral examination by faculty members from different fields of expertise.

Learning Support Framework

Academic Support	– Support interdisciplinary learning by acquiring knowledge and skills through introductory courses and foundational practical training outside student's original academic field. – In the common subject “Scientific Writing and Publishing”, instruct students on the knowledge and skills necessary for paper writing. – Utilize portfolio-based assessment to enable students to review their learning progress and clarify challenges to encourage self-reflection.
Opportunities for Peer Interaction	– The common subject “Humanics Forum” provides opportunities for interaction among new students and with upperclassmen. – A student group will take the lead in planning and hosting the Humanics Symposium, providing opportunities for exchange and collaboration through the planning and operation process.
Opportunities for Student–Faculty Interaction	– In addition to the main mentor, students will meet with QE examiners for research progress meetings (held every six months) to provide opportunities to receive guidance on their doctoral dissertation research. – With the introduction of double-mentor system and reverse-mentor system, we support interdisciplinary learning and research by promoting collaboration among faculty with a student in its center.

Approaches to Assuring and Enhancing Educational Quality

– Evaluation of student learning outcomes and regular surveys for current students and graduates, are analyzed at the Faculty Meeting and the Curriculum Committee to verify the validity of the curruculum and the appropriateness of the instruction.

Ph.D. Program in Humanics

■ Doctor of Philosophy in Engineering

Program Educational Objectives

Humanics is an academic discipline that focuses on the fundamental principles of physiology and pathology of the human, generating new science and technology to achieve a healthy and comfortable life of human beings in the society. In this program, we cultivate leaders with skills in the fields of both biomedical sciences and physical sciences/engineering/informatics, as well as the capacity to integrate two or more research fields and to tackle flexibly and multifacetedly to the unpredictable future based on their bidisciplinary expertise and research skills.

Graduate Profile	Students who complete this program will be outstanding leaders with the bidisciplinary expertise to incorporate the latest knowledge and technologies in biomedical sciences and physical sciences/engineering/informatics, talk with each other using the laguages of both fields, conceive of new paradigms through a deep understanding of both fields, and integrate them.

Diploma Policy

The degree of Doctor of Philosophy in Engineering is commenced to those who have fulfilled the requirements for the completion of the Doctoral programs, as set out in the Graduate School Regulations of the University of Tsukuba and related university regulations, and who are deemed to have the following competences.

	Competences	Evaluation perspectives
Knowledge and Skills	1. Knowledge creation competence: Ability to create new knowledge that can contribute to future society	①Are there any research findings that can be considered new knowledge? ②Can we expect you to create knowledge that will contribute to future society?
	2. Management competence: Ability to plan and implement measures to identify and solve challenges from a higher perspective	①Can you make and implement long-term plans for critical challenges? ②Can you identify challenges, even in other areas of expertise, and solve them from a higher perspective?
	3. Communication competence: Ability to express the true nature of academic findings positively and clearly	①Can you explain the true nature of research content and specialized knowledge clearly and logically to researchers from different areas and to people other than researchers? ②Do you proactively share your findings with researchers and experts from your field of expertise and accurately answer questions?
	4. Leadership competence: Ability to have objectives get accomplished under your leadership	①Can you set attractive and compelling goals? ②Are you capable of building systems to realize goals and accomplish objectives as the leader?
	5. Internationality competence: Possession of a high level of awareness and motivation to be internationally active and contribute to international society	①Do you have strong awareness and motivation to contribute to international society and international activities? ②Have you obtained adequate linguistic skills for international information collection and action?
	6. Bidisciplinary perspective ability	①The ability to accurately identify the essence of unpredicatable humanics issues. ②The abitliy to propose solutions flexibly and multifacetedly based on the bidisciplinary expertise.
	7. Bidisciplinary design ability	①The ability to identify original fusion research projects in the field of humanics. ②To have the knowledge and skills to obtain excellent research results in the fields of humanics.
	8. Bidisciplinary outcome ability	①The ability to design the research plan and tackle to the humanics projects persistently with high motivation and ethical standards. ②The ability to explain the academic and social significance of the research findings and envision their commercialization.

Guidelines for Assessing Learning Outcomes	The evaluation of learning outcomes is conducted through an achievement level assessment based on the Achievement Rubric. This assessment evaluates the acquisition status of competences according to the following stages, based on the Diploma Policy. – Based on the curriculum, academic achievements and individual student's performance serve as evidence to be evaluated by the academic advisor and course instructor. – The program's proprietary portfolio-based assessment method (CPx: Career Platform for Humanics) is used to track and evaluate competence attainment.
Evaluation Criteria for Degree Theses/ Dissertations	1) To pass the Qualifying Examination (QE). 2) To achieve the certain level in the portfolio-based achievement assessment system. 3) To have the English and communication skills to negotiate freely in the international community. 4) To understand social demands in the field of medicine, and identify the research question for the dissertation that can be solved by integrating engineering/informatics and biomedical sciences. They are also able to independently identify research questions that are expected to be overcome in the future based on the results of their dissertation. 5) To have a firm will and a sincere attitude to tackle the humanics projects, and complete the research findings on their own in a dissertation. 6) To publish research articles that are highly renowned internationally by the academic and industrial communities. 7) To explain what is necessary to implement research findings in society.

Ph.D. Program in Humanics / Doctor of Philosophy in Engineering

Curriculum Policy

The curriculum in humanics program cultivates a firm will to identify the essence of humanics research, bidisciplinary expertise in both engineering/informatics and biomedical sciences, an understanding of the basic technologies of humanics research and the global situation in this field, the ability to independently identify issues that could lead to paradigm shift, and the ability to solve these issues with sincerity and diligence.

Curriculum Design Framework	– In the Common Subjects, we cultivate strong motivation, sincere atitude, rigid ethics, and international communication skills to become leaders in the world through courses including the study of research ethics, entrepreneurship education, internships, and overseas laboratory rotation. – In the Basic Specialized Subjects, students learn basic and clinical medicine, as well as engineering/informatics, through lectures and practical courses that combine e-learning and problem-based learning (PBL), and cultivate the bidisciplinary expertise required for humanics study. – In the Humanics Specialized Subjects, students choose mentors from both engineering/informatics and biomedical sciences and acquire specialized knowledge and skills through the double-mentoring system based on collaboration among mentors.
Teaching and Learning Methods	The standard course schedule is shown below. – Humanics Forum provides opportunities to 1st grade students to confirm the research plan for Ph.D. dissertation. – A mentor for the sub-field will be selected within 6 months after enrollment. – By the end of the second year, students must earn more than 35 credits from compulsory and elective subjects and pass the Qualifying Examination (QE). – After the QE, the progress will be presented to the dissertation committee once or twice a year. – Students, who passed the QE and earned more than 45 credits from compulsory and elective subjects, must pass the preliminary dissertation examination to qualify the dissertation examination requirements. – The dissertation will be evaluated in peer review and oral examination.

Admission Policy

Desired Student Profile	We are looking for students who have a strong will to contribute to the future of human beings through the discovery and resolution of issues that could be a paradigm shift in the field of humanics, and who meet one of the following criteria – Students have basic knowledge and skills in biomedical sciences or clinical medicine, as well as a strong interest in interdisciplinary research in physical sciences/engineering/informatics. – Students have basic knowledge and skills in one of the fields of physical sciences, engineering, or informatics, as well as a strong interest in interdisciplinary research in the field of biomedical sciences or clinical medicine.

Student Selection Process	The humanics program integrates the knowledge and skills of biomedical sciences, and physical sciences/engineering/informatics to lead a paradigm-shift for overcoming the life and health problems facing human beings. Taking advantage of the characteristics of this program, we will evaluate the applicants on the selection criteria based on expertise in the fields of biomedical sciences and physical sciences/engineering/informatics, advanced creativity, internationality, and the ability to explain to non-specialist researchers. Applicants need to submit a research proposal in English that integrates the fields of biomedical sciences and physical sciences/engineering/informatics, and the research proposal will be evaluated through the oral examination by faculty members from different fields of expertise.

Learning Support Framework

Academic Support	– Support interdisciplinary learning by acquiring knowledge and skills through introductory courses and foundational practical training outside student's original academic field. – In the common subject “Scientific Writing and Publishing”, instruct students on the knowledge and skills necessary for paper writing. – Utilize portfolio-based assessment to enable students to review their learning progress and clarify challenges to encourage self-reflection.
Opportunities for Peer Interaction	– The common subject “Humanics Forum” provides opportunities for interaction among new students and with upperclassmen. – A student group will take the lead in planning and hosting the Humanics Symposium, providing opportunities for exchange and collaboration through the planning and operation process.
Opportunities for Student–Faculty Interaction	– In addition to the main mentor, students will meet with QE examiners for research progress meetings (held every six months) to provide opportunities to receive guidance on their doctoral dissertation research. – With the introduction of double-mentor system and reverse-mentor system, we support interdisciplinary learning and research by promoting collaboration among faculty with a student in its center.

Approaches to Assuring and Enhancing Educational Quality

– Evaluation of student learning outcomes and regular surveys for current students and graduates, are analyzed at the Faculty Meeting and the Curriculum Committee to verify the validity of the curruculum and the appropriateness of the instruction.

Tsukuba Standards

The University of Tsukuba has formulated two sets of "Tsukuba Standards" for Undergraduate Schools and Colleges and the other for Graduate Schools and Programs, which are widely announced to the public as the University's educational declaration.

Tsukuba Standards for Undergraduate Schools and Colleges

In addition to setting forth the educational goals of our bachelor programs and the university-wide measures for achieving them, it also clearly states the goals of the liberal arts education and the specific educational content for achieving them, the Diploma Policy and Curriculum Policy, and the measures for guaranteeing the quality of education in each educational organization.

Tsukuba Standards for Graduate Schools and Programs

In addition to setting forth the educational goals of our graduate schools and programs and the university-wide measures for achieving them, the Diploma Policy and Curriculum Policy and the policy for guaranteeing the quality of education in each educational organization are clearly stated.

University of Tsukuba

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Tsukuba Standards for Graduate Schools and Programs

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筑波大学

University of Tsukuba

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