Student handbook

2020

Graduate School of Advanced Science and Engineering

Hiroshima University

University Policy

1 Founding Principle

A Single Unified University, Free and Pursuing Peace

2 The Five Guiding Principles

- Pursuit of Peace
- Creation of New Forms of Knowledge
- Nurturing of Well-Rounded Human Beings
- Collaboration with the Local, Regional, and International Community
- Continuous Self-Development

Graduate School of Advanced Science and Engineering
Goals and Objectives

The Graduate School aims not only to provide and cultivate knowledge and skills in students' specialized fields but also to develop capabilities for integrated understanding of other fields of science and engineering and for contribution to local and international societies. Specifically, the Graduate School educates students to obtain the following capabilities:

(1) Advanced and high-level knowledge and specialized skills in the areas of science, engineering, and information science (expertise);
(2) The ability to understand other areas and application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas (cross-disciplinary ability);
(3) The ability to contribute to realizing a sustainable international society in which various cultures and religions are equally respected and coexist peacefully against the background of globalization (internationalism); and
(4) The ability to organize a team of specialists of various academic areas as required and take an action for solving a social problem as a member or the leader of the team while considering the relationship between the academic field and actual society (practical skills for social implementation).

To achieve the aim, the Graduate School provides education and research activities through an advanced method in which social needs are taken into consideration from cross-disciplinary points of view that is established beyond the borders of the graduate schools and major courses as well as conventional education for improving capabilities in each specialized area to contribute to solve social problems.

Academic Calendar and School Hours

1 Academic Calendar

First Semester	Spring Holiday	April 1 to April 7
	Classes	April 8 to August 10
	Summer Holiday	August 11 to September 30
Second Semester	Classes	October 1 to December 25
	University Foundation Day	November 5 (has classes)
	Winter Holiday	December 26 to January 5
	Classes	January 6 to February 15
	End-of-Academic-Year Holiday	February 16 to March 31

(Note)

At Hiroshima University, we employ a quarter system, under which an academic year consists of a first term (the first half of the first semester), a second term (the second half of the first semester), a third term (the first half of the second semester), and a fourth term (the second half of the second semester).

The periods described above are based on Hiroshima University's general regulations, and there are cases where class schedules are not in line with the periods. For your class schedules, please check each year's academic calendar released on Student Information Momiji.

2 Periods of Class Time in the Daytime

Period	1	2	3	4	5	6	7	8	9	10
Time	8:45 ▽ 9:30	9:30 ▽ 10:15	10:30 ▽ 11:15	11:15 ▽ 12:00	12:50 ▽ 13:35	13:35 ▽ 14:20	14:35 ▽ 14:20	15:20 ▽ 16:05	16:20 ▽ 17:05	17:05 ▽ 17:50

Period	11	12	13	14
Time	18:00 ▽ 18:45	18:45 ▽ 19:30	19:40 ▽ 20:25	20:25 ▽ 21:10

Contents

Diploma Policy

【Graduate School of Advanced Science and Engineering (Master's Course) 】

The Division of Advanced Science and Engineering of the Graduate School of Advanced Science and Engineering will award either of the following degrees to students who have acquired the capabilities described below, earned the required credits, conducted research activities under the research guidance, and passed the master's thesis examination and the final examination or the qualifying examination for research in the doctoral course according to the research theme and the specialized area: Master of Science, Master of Engineering, Master of Informatics and Data Science, Master of International Cooperation Studies, and Master of Philosophy.

1. Advanced and high-level knowledge and specialized skills in areas of science, engineering, informatics and data science or their related/combined area.
2. The ability to understand other areas in addition to profound expertise in any of the above-mentioned areas and application capabilities, practical skills, and the capability to identify problems in integrating and coordinating knowledge and skills in different areas.
3. The ability to solve social problems through creation of "science for sustainable development" and social implementation of technology while cooperating with specialists of various areas.
4. The ability to understand scientific logic and research ethics, the ability to dispatch information towards other academic areas, and the capability for international and cross-disciplinary communication.

【Graduate School of Advanced Science and Engineering (Doctoral Course) 】

The Division of Advanced Science and Engineering of the Graduate School of Advanced Science and Engineering will award either of the following degrees to students who have acquired the capabilities described below, earned the required credits, conducted research activities under the research guidance, and passed the doctor's thesis examination and the final examination according to the research theme and the specialized area: Doctor of Philosophy in Science, Doctor of Philosophy in Engineering, Doctor of Philosophy in Informatics and Data Science, Doctor of Philosophy in International Cooperation Studies, and Doctor of Philosophy.

1. Advanced and prominent research capabilities and specialized skills in areas of science, engineering, informatics and data science or their related/combined area and ability to distribute results of academic activities both at home and abroad.
2. Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in any of the above-mentioned areas and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas.
3. The ability to take a leading role in the activity for solving social problems through creation of "science for sustainable development) and social implementation of technology while cooperating with specialists of various areas.
4. The ability to understand scientific logic and noble research ethics, ability to dispatch information towards other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Mathematics Program (Master's Course) 】

In the Mathematics Program, we will award a master's degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① Extensive learning in mathematics, high-level study skills, and specialized capabilities;
② Profound mathematics expertise and the ability to understand other areas, as well as application capabilities, practical skills, and the ability to identify problems in integrating and coordinating them;
③ Ability to mathematically regard and analyze problems occurring in the fields of sciences, including international/regional communities and industrial society, and to solve social problems through creation of "science for sustainable development" while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Mathematics Program (Doctoral Course) 】

In the Mathematics Program, we will award a doctoral degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Capabilities to apply, analyze and evaluate specialized knowledge of mathematics, capabilities to integrate them and create new things, and ability to distribute results of academic activities both at home and abroad;
② Profound mathematics expertise and learning based on international and cross-disciplinary perspectives, and capability to identify and solve problems in integrating and coordinating them;
③ Capabilities to mathematically regard and analyze problems occurring in the fields of sciences, including industrial society, and to take a leading role in activities for solving social problems through creation of "science for sustainable development" while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Physics Program (Master's Course) 】

In the Physics Program, we will award a master's degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① Cutting-edge specialized knowledge of physics as the cornerstone of science;
② Profound physics expertise and capabilities to understand different related fields, and also capabilities to detect problems by integrating them;
③ Ability to solve social problems through creation of "science for sustainable development" while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Physics Program (Doctoral Course) 】

In the Physics Program, we will award a doctoral degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills of physics as the cornerstone of science, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in physics and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas;
③ Ability to take a leading role in activities for solving social problems through creation of "science for sustainable development" while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Earth and Planetary Systems Science Program (Master's Course) 】

In the Earth and Planetary Systems Science Program, we will award a master's degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of earth and planetary science, and capabilities to regard the earth and planets as systems related to different fields;
② Profound expertise of earth and planetary science and capabilities to understand different related fields, and also capabilities to detect problems by integrating them;
③ Ability to solve social problems through creation of "science for sustainable development" from the perspective of earth and planetary systems science while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Earth and Planetary Systems Science Program (Doctoral Course) 】

In the Earth and Planetary Systems Science Program, we will award a doctoral degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of earth and planetary science, and capabilities to regard the earth and planets as systems related to different fields;
② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in earth and planetary science and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas;
③ Ability to take a leading role in activities for solving social problems through creation of "science for sustainable development" from the perspective of earth and planetary systems science while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Basic Chemistry Program (Master's Course) 】

In the Basic Chemistry Program, we will award a master's degree (science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of basic chemistry;
② Profound expertise of basic chemistry and the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;
③Ability to solve social problems through creation of "science for sustainable development" while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Basic Chemistry Program (Doctoral Course) 】

In the Basic Chemistry Program, we will award a doctoral degree(science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of basic chemistry, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in basic chemistry program and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas;

③ Ability to take a leading role in the activities for solving social problems through creation of "science for sustainable development" while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Applied Chemistry Program (Master's Course) 】

In the Applied Chemistry Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of applied chemistry;

② Profound expertise of applied chemistry and the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Applied Chemistry Program (Doctoral Course) 】

In the Applied Chemistry Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of applied chemistry, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in applied chemistry program and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas;

③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Chemical Engineering Program (Master's Course) 】

In the Chemical Engineering Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of chemical engineering;

② Profound expertise of chemical engineering and the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Chemical Engineering Program (Doctoral Course) 】

In the Chemical Engineering Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of chemical engineering, and ability to distribute results of academic activities both at home and abroad;
② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in chemical engineering program and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas;
③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Electrical, Systems, and Control Engineering Program (Master's Course) 】

In the Electrical, Systems, and Control Engineering Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of electrical engineering and system engineering as the cornerstone of electrical, systems and control engineering;
② Profound expertise in the field of electrical engineering and system engineering as the cornerstone of electrical, systems and control engineering, the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;
③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Electrical, Systems, and Control Engineering Program (Doctoral Course) 】

In the Electrical, Systems, and Control Engineering Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of electrical engineering and system engineering as the cornerstone of electrical, systems and control engineering, and ability to distribute results of academic activities both at home and abroad;
② Cross-disciplinary point of view and ability for social implementation, profound expertise in electrical engineering and system engineering as the cornerstone of electrical, systems and control engineering, and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas
③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Mechanical Engineering Program (Master's Course) 】

In the Mechanical Engineering Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of mechanical engineering;

② Profound expertise of mechanical engineering, the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Mechanical Engineering Program (Doctoral Course) 】

In the Mechanical Engineering Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of mechanical engineering, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in mechanical engineering and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas

③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Transportation and Environmental Systems Program (Master's Course) 】

In the Transportation and Environmental Systems Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of transportation system engineering and environmental system engineering;

②Profound expertise of transportation system engineering and environmental system engineering, the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Transportation and Environmental Systems Program (Doctoral Course) 】

In the Transportation and Environmental Systems Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of transportation system engineering and environmental system engineering, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in transportation system engineering and environmental system engineering and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas

③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Architecture Program (Master's Course) 】

In the Architecture Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of architecture;

② Profound architecture expertise, the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas; and

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Architecture Program (Doctoral Course) 】

In the Architecture Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of architecture, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in architecture and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas

③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Civil and Environmental Engineering Program (Master's Course) 】

In the Civil and Environmental Engineering Program, we will award a master's degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the fields of structure of engineering, civil environmental engineering and disaster prevention engineering as the cornerstone of civil and environmental engineering;

② Profound expertise of structure of engineering, civil environmental engineering and disaster prevention engineering as the cornerstone of civil and environmental engineering, the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Civil and Environmental Engineering Program (Doctoral Course) 】

In the Civil and Environmental Engineering Program, we will award a doctoral degree (engineering) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the fields of structure of engineering, civil environmental engineering and disaster prevention engineering as the cornerstone of civil and environmental engineering, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in structure of engineering, civil environmental engineering and disaster prevention engineering as the cornerstone of civil and environmental engineering and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas;

③ Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic, noble engineering ethics, and respect for diversity, and high-level communication skills and other practical skills necessary to demonstrate their capabilities as leading, high-level professionals or researchers both at home and abroad.

【Informatics and Data Science Program (Master's Course) 】

In the Informatics and Data Science Program, we will award a master's degree (informatics and data science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the field of informatics and data science;

② Profound expertise of informatics and data science, capabilities to understand different cultures, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas;

③ Ability to solve social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Informatics and Data Science Program (Doctoral Course) 】

In the Informatics and Data Science Program, we will award a doctoral degree (informatics and data science) to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the field of informatics and data science, and ability to distribute results of academic activities both at home and abroad;

② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in informatics and data science and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas

② Ability to take a leading role in activities for solving social problems through social implementation of technology while cooperating with specialists of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Quantum Matter Program (Master's Course) 】

In the Quantum Matter Program, we will award a master's degree (engineering), a master's degree (science) or a master's degree (philosophy), depending on the major research theme and specialized area, to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills based on materials science, condensed material physics, material science and engineering, and electronic engineering;
② Profound expertise, the ability to understand other areas, application capabilities, practical skills, and the ability to identify problems in integrating and coordinating different areas; and
③ Ability to solve social problems through creation of "science for sustainable development" and social implementation of technology while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Quantum Matter Program (Doctoral Course) 】

In the Quantum Matter Program, we will award a doctoral degree (engineering) a doctoral degree (science) or a doctoral degree (philosophy), depending on the major research theme and specialized area, to students who have acquired the capabilities described below, have earned the required number of credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the fields of materials science, condensed material physics, material science and engineering, and electronic engineering, and ability to distribute results of academic activities both at home and abroad;
② Cross-disciplinary point of view and ability for social implementation in addition to profound expertise in materials science, condensed material physics, material science and engineering, and electronic engineering and capability of identifying and solving problems while integrating and coordinating knowledge and skills in different areas
③ Ability to take a leading role in activities for solving social problems through creation of "science for sustainable development" and social implementation of technology while cooperating with specialists of various areas; and
④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

【Transdisciplinary Science and Engineering Program (Master's Course) 】

In the Transdisciplinary Science and Engineering Program, we will award a master's degree (engineering), a master's degree (international cooperation studies) or a master's degree (philosophy), depending on the relevant research theme and specialized area, to students who have acquired the capabilities described below, have earned the required number of credits, and have passed the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course:

① High-level research skills and specialized skills in the fundamental fields of natural environment/natural disasters, integrated physics , information system environment and technology development, as well as in integrated fields;
② Ability to understand integrated fields based on profound expertise in the fundamental fields of natural environment, natural disasters, integrated physics, information system, media, and development technology through both a nature-oriented point of view and a human-oriented point of view, as well as application capabilities, practical skills, and the capability to identify problems in ensuring harmonious coexistence between nature and humans;
③ Ability to solve social problems through creation of "science for sustainable development" and social implementation of technology while cooperating with high-level professionals of various areas; and
④ Ability to understand scientific logic and research ethics, the ability to dispatch information to other academic areas, and the capability for international and cross-disciplinary communication.

【Transdisciplinary Science and Engineering Program (Doctoral Course) 】

In the Transdisciplinary Science and Engineering Program, we will award a doctoral degree (engineering), a doctoral degree (international cooperation studies) or a doctoral degree (philosophy), depending on the relevant research theme and specialized area, to students who have acquired the capabilities described below, have earned the required credits, have conducted research activities under the research guidance, and have passed the doctor's thesis screening and the final examination:

① Prominent research skills and specialized skills in the fundamental fields of natural environment/natural disasters, general physics, information system environment and technology development, as well as in integrated fields, and also ability to distribute results of academic activities both at home and abroad;

② Ability to identify and solve problems and practical skills for social implementation to ensure harmonious coexistence between nature and humans while integrating and coordinating different areas based on profound expertise in the fundamental fields of natural environment, natural disasters, integrated physics, information system, media, and development technology through both a nature-oriented point of view and a human-oriented point of view;

③ Ability to take a leading role in activities for solving social problems through creation of "science for sustainable development" and social implementation of technology while cooperating with high level professionals of various areas; and

④ Ability to understand scientific logic and noble research ethics, ability to dispatch information to other academic areas, and an advanced capability for international and cross-disciplinary communication.

Curriculum Policy

【Graduate School of Advanced Science and Engineering (Master's Course) 】

To enable students to achieve the targets that are defined in the diploma policy, the Graduate School of Advanced Science and Engineering organizes and executes the education courses according to the following policies:

1. Subjects specialized for the program are provided to develop the specialized knowledge and skills required for each diploma program.
2. Common subjects for the Graduate School are provided to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, interest in society, and an awareness of problems.
3. Students are required to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability.
4. To develop human resources who are superior in practical skills, special exercise subjects are provided.
5. To develop a capability to identify and solve problems from a broad point of view, students are engaged in a special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor.
6. To develop the fundamental capabilities required for international research activities, common subjects for the Graduate School (internationalism) are provided.
7. To develop the practical skills for social implementation, common subjects for the Graduate School (sociality) are provided.

【Graduate School of Advanced Science and Engineering (Doctoral Course) 】

To enable students to achieve the targets that are defined in the diploma policy, the Division of Advanced Science and Engineering of the Graduate School of Advanced Science and Engineering organizes and executes the education courses according to the following policies:

1. Subjects specialized for the program are provided to develop the specialized knowledge and skills required for each diploma program.
2. Common subjects for the Graduate School are provided to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and interest and awareness for society and its problems.
3. To develop a capability to identify and solve problems from a broad point of view, students are engaged in a special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor.
4. To develop the practical capabilities required for international research activities, common subjects for the Graduate School (internationalism) are provided.
5. To develop an ability to solve social problems, common subjects for the Graduate School (sociality) are provided.

【Mathematics Program (Master's Course) 】

In the Mathematics Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for mathematics and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Mathematics Program (Doctoral Course) 】

In the Mathematics Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for mathematics and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Physics Program (Master's Course) 】

In the Physics Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for physics and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence and foster ambition to create "science for sustainable development;"

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Physics Program (Doctoral Course) 】

In the Physics Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for physics and its related areas

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Earth and Planetary Systems Science Program (Master's Course) 】

In the Earth and Planetary Systems Science Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for earth and planetary systems science and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Earth and Planetary Systems Science Program (Doctoral Course) 】

In the Earth and Planetary Systems Science Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for earth and planetary systems science and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Basic Chemistry Program (Master's Course) 】

In the Basic Chemistry Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for basic chemistry and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Basic Chemistry Program (Doctoral Course) 】

In the Basic Chemistry Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for basic chemistry and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Applied Chemistry Program (Master's Course) 】

In the Applied Chemistry Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for applied chemistry and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Applied Chemistry Program (Doctoral Course) 】

In the Applied Chemistry Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for applied chemistry and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Chemical Engineering Program (Master's Course) 】

In the Chemical Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for chemical engineering and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Chemical Engineering Program (Doctoral Course) 】

In the Chemical Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for chemical engineering and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Electrical, Systems, and Control Engineering Program (Master's Course) 】

In the Electrical, Systems, and Control Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for electrical engineering, system engineering and their related areas as the cornerstone of electrical, systems, and control engineering;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and

⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Electrical, Systems, and Control Engineering Program (Doctoral Course) 】

In the Electrical, Systems, and Control Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for electrical engineering, system engineering and their related areas as the cornerstone of electrical, systems, and control engineering;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;

④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and

⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Mechanical Engineering Program (Master's Course) 】

In the Mechanical Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for mechanical engineering and its related areas;

② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;

④ To provide special exercise subjects to develop human resources who are superior in practical skills;

⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;

⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Mechanical Engineering Program (Doctoral Course) 】

In the Mechanical Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for mechanical engineering and its related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;
③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Transportation and Environmental Systems Program (Master's Course) 】

In the Transportation and Environmental Systems Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for transportation system engineering, environmental system engineering and their related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;
③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;
④ To provide special exercise subjects to develop human resources who are superior in practical skills;
⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;
⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Transportation and Environmental Systems Program (Doctoral Course) 】

In the Transportation and Environmental Systems Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for transportation system engineering, environmental system engineering and their related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;

③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Architecture Program (Master's Course) 】

In the Architecture Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

①To provide subjects specialized for the program to develop the specialized knowledge and skills required for architecture and its related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;
③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;
④ To provide special exercise subjects to develop human resources who are superior in practical skills;
⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;
⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Architecture Program (Doctoral Course) 】

In the Architecture Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for architecture and its related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;
③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Civil and Environmental Engineering Program (Master's Course) 】

In the Civil and Environmental Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for structure of engineering, civil environmental engineering, disaster prevention engineering and their related areas as the cornerstone of civil and environmental engineering;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create "science for sustainable development," cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;

③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;
④ To provide special exercise subjects to develop human resources who are superior in practical skills;
⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;
⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Civil and Environmental Engineering Program (Doctoral Course) 】

In the Civil and Environmental Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for structure of engineering, civil environmental engineering, disaster prevention engineering and their related areas as the cornerstone of civil and environmental engineering;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create “science for sustainable development,” cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;
③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Informatics and Data Science Program (Master's Course) 】

In the Informatics and Data Science Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for informatics and data science and its related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create “science for sustainable development,” cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;
③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;
④ To provide special exercise subjects to develop human resources who are superior in practical skills;
⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;
⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Informatics and Data Science Program (Doctoral Course) 】

In the Informatics and Data Science Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for informatics and data science and its related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create “science for sustainable development,” cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;
③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Quantum Matter Program (Master's Course) 】

In the Quantum Matter Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program to develop the specialized knowledge and skills required for materials science, condensed material physics, material science and engineering, electronic engineering, and their related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create “science for sustainable development,” cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;
③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;
④ To provide special exercise subjects to develop human resources who are superior in practical skills;
⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;
⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Quantum Matter Program (Doctoral Course) 】

In the Quantum Matter Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research to develop the specialized knowledge and skills required for materials science, condensed material physics, material science and engineering, electronic engineering, and their related areas;
② To provide Common Subjects for the HU Graduate Schools to develop wide and deep intelligence, foster ambition to create “science for sustainable development,” cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;
③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

【Transdisciplinary Science and Engineering Program (Master's Course) 】

In the Transdisciplinary Science and Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To provide subjects specialized for the program organized from a nature-oriented point of view and a human-oriented point of view in order to develop the specialized knowledge and skills required for the fundamental fields of natural environment, natural disasters, information systems, media, and development technology;
② To provide Common Subjects for the HU Graduate Schools to foster ambition to create “science for sustainable development” from a global point of view, cultivate a point of view that encompasses areas of the other graduate schools and specialty, and encourage interest in society and awareness of problems;
③ To require students to take a class subject of another diploma program to improve their understanding of the other area and cross-disciplinary ability;
④ To provide special exercise subjects to develop human resources who are superior in practical skills;
⑤ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify problems from a broad point of view;
⑥ To provide Common Subjects for the Graduate School (internationalism) to develop the fundamental capabilities required for international research activities; and
⑦ To provide Common Subjects for the Graduate School (sociality) to develop the practical skills for social implementation.

【Transdisciplinary Science and Engineering Program (Doctoral Course) 】

In the Transdisciplinary Science and Engineering Program, we organize and execute the education course according to the following policies in order to enable students to achieve the targets that are defined in the diploma policy:

① To ensure that students are engaged in special research organized from both a nature-oriented point of view and a human-oriented point of view in order to develop the specialized knowledge and skills required for the fundamental fields of natural environment, natural disasters, integrated physics, information systems, media, and development technology;
② To provide Common Subjects for the HU Graduate Schools to foster ambition to create “science for sustainable development” from a global point of view, cultivate a cross-disciplinary and international point of view, and encourage interest in and awareness of society and its problems;
③ To ensure that students are engaged in special research under the guidance of a supervisor and two or more subadvisors that include a faculty of the specialized area other than that of the supervisor in order to develop a capability to identify and solve problems from a broad point of view;
④ To provide Common Subjects for the Graduate School (internationalism) to develop the practical capabilities required for international research activities; and
⑤ To provide Common Subjects for the Graduate School (sociality) to develop an ability to solve social problems.

Common Matters

Master's Program ／ Doctoral Program

1. By-laws of the Graduate School of Advanced Science and Engineering, Hiroshima University

(Purpose)

Article 1: The purpose of the present By-laws is to stipulate necessary matters that are not stipulated in the Hiroshima University Graduate School Regulations (Regulations No. 2, January 15, 2008; "Hiroshima University Regulations") regarding research and education for students of the Graduate School of Advanced Science and Engineering, Hiroshima University ("Graduate School").

(Purposes of Education and Research)

Article 2: The purposes of education, research, and human resource development at the Graduate School shall be as indicated below:

(1) Master's courses: Not only to cultivate students' knowledge and skills in their own specialized fields but also to provide education with which they can foster their internationalism, cross-disciplinary ability and practical skills for social implementation, thereby developing human resources who are equipped with wide and deep intelligence and integrated understanding of other fields based on high-level expertise in science, engineering, information science and their related research areas and who can work on solution of social problems

(2) Doctoral courses: To provide education to foster students' prominent knowledge and skills in their own specialized fields and also their internationalism, cross-disciplinary ability, and practical skills for social implementation, thereby developing human resources who are equipped with wide and deep intelligence and integrated understanding of other fields based on high-level expertise in science, engineering, information science and their related research areas and who can serve as next-generation leaders in promoting world-class academic research and creating innovation

2 The purposes of human resource development, education and research of the diploma programs listed in paragraph 1 of the next article shall be as indicated in appended table 1.

(Diploma Program)

Article 3: The Division of Advanced Science and Engineering shall establish the diploma program indicated in each item below:

(1) Mathematics Program
(2) Physics Program
(3) Earth and Planetary Systems Science Program
(4) Basic Chemistry Program
(5) Applied Chemistry Program
(6) Chemical Engineering Program
(7) Electrical, Systems, and Control Engineering Program
(8) Mechanical Engineering Program
(9) Transportation and Environmental Systems Program
(10) Architecture Program
(11) Civil and Environmental Engineering Program
(12) Informatics and Data Science Program
(13) Quantum Matter Program
(14) Transdisciplinary Science and Engineering Program

2 Students shall specialize in one of the diploma programs listed in the preceding paragraph.

(Curricula)

Article 4: The curricula of the Graduate School shall be as indicated in appended table 2.

(Class Subjects and Related Matters)

Article 5: Class subjects to be provided at the Graduate School and their numbers of credits shall be as indicated in the appended table 2.

2 The class timetable shall be published at the beginning of each academic year.

(Standards for Calculation of Credits)

Article 6: The number of credits of each class subject shall be calculated based on the following standards:

(1) For lectures, 15 hours of classwork constitute 1 credit;
(2) For seminars, 15 or 30 hours of classwork constitute 1 credit; and
(3) For experiments and practical exercises, 30 or 45 hours of classwork constitute 1 credit.

2 For class subjects provided in two or more modes in parallel, the number of hours of classwork to be conducted in each mode shall be determined in light of the standards indicated above and so that 45 hours of combined classwork constitute 1 credit.

(Supervisor/Subadvisors)

Article 7: Upon students' enrollment in the Graduate School, the Faculty Council of the Graduate School of Advanced Science and Engineering, Hiroshima University ("Faculty Council"), shall promptly assign to each student a supervisor and two or more subadvisors, who will offer advice and guidance on class subjects and research. The subadvisors must include at least one faculty member whose specialized field is different from that of the supervisor and may be chosen, as the need arises, from teaching faculty members of other Hiroshima University graduate schools or other universities' graduate schools.

2 Students wishing to change their supervisor or subadvisors shall obtain approval from the relevant supervisor/subadvisor before applying to and obtaining approval from the Dean of the Graduate School. However, they can directly apply to the Dean of the Graduate School in special circumstances.

3 The Dean of the Graduate School may change students' supervisor or subadvisors, if such change is deemed desirable, upon obtaining approval from the students concerned.

(Registration Procedure)

Article 8: Students must select class subjects in consultation with their supervisor, obtain approval from faculty members in charge of the class subjects, and complete the prescribed procedure to register for the class subjects within the period designated for each semester.

2 Students who fail to complete the procedure as stated in the preceding paragraph shall not be allowed to take class subjects unless there are legitimate circumstances, in which case the students may take class subjects upon obtaining approval from the faculty members in charge of the class subjects concerned.

3 Students may take class subjects offered by other Hiroshima University graduate schools that are deemed necessary by their supervisor, in accordance with the rules of the graduate school concerned.

4 Students of other graduate schools wishing to register for class subjects offered by the Graduate School must complete the prescribed procedure within the designated period for each semester upon obtaining approval from the faculty members in charge of the class subjects concerned.

(Research Title)

Article 9: Students must promptly decide their research title in consultation with their supervisor after their enrollment in the Graduate School and submit it to the Dean of the Graduate School.

(Special Arrangements of the Education Method)

Article 10: Special arrangements may be made to facilitate the pursuance of the education at the Graduate School, if the Dean of the Graduate School considers it especially necessary from an educational standpoint following deliberations by the Faculty Council, by scheduling classes or research guidance sessions in the evening or at specific hours or during a specific period or devising other appropriate measures.

2 The handling of such special arrangements of the education method shall be indicated separately.

(Long-term Completion of Curricula)

Article 11: The treatment of long-term completion of curricula shall be in accordance with the Hiroshima University By-Laws on the Treatment of Long-term Completion of Curricula (approved by the Vice President [Education/Student] on April 1, 2004).

2 The maximum period of long-term completion of curricula shall be four years in the master's courses and six years in the doctoral courses.

(Recognition of Credits Acquired Prior to Admission)

Article 12: The Graduate School may, if it considers this to be beneficial from an educational standpoint, recognize credits that students acquired by completing class subjects at other graduate schools in Japan or overseas (including credits acquired as credited auditors) prior to their admission to the Graduate School as credits earned by completing class subjects at the Graduate School.

2 The number of credits other than those acquired at the Graduate School (including credits acquired as credited auditors) that may be recognized as credits earned by completing class subjects at the Graduate School pursuant to the provision of the preceding paragraph shall not exceed 10 credits, except in cases of transfer.

3 The recognition of credits acquired prior to admission to the Graduate School as prescribed in the preceding two paragraphs shall be determined in accordance with the Hiroshima University By-Laws Regarding Approval of Previously Acquired Credits (approved by the Vice President [Education/Student] on April 1, 2004).

(Teaching License)

Article 13: The students who have acquired necessary credits by completing the class subjects prescribed in the Education Personnel Certification Act (Act No. 147 of 1949) and the Education Personnel Certification

Act Enforcement Regulations (Ordinance of the Ministry of Education No. 26 of 1954) are eligible to obtain teacher's licenses of the types and subjects indicated in the table below.

Type of license	Subjects licensed to teach
Advanced level teaching certificate for upper secondary school	Mathematics, science, informatics and engineering
Advanced level teaching certificate for lower secondary school	Mathematics and science

2 The class subjects and their registration procedure in the preceding paragraph shall be indicated separately.

(Requirements for Completing Master's Courses)

Article 14: To complete a master's course, students need to be enrolled in the course for at least two years, obtain 30 credits or more by completing the class subjects indicated in appended table 2, receive necessary research guidance, submit a master's thesis during the enrollment period, and pass the screening of the thesis and final examination, with the exception of students whom the Dean of the Graduate School recognizes as having achieved outstanding academic performance following deliberations by the Faculty Council, who may be exempt from the enrollment requirement and may complete the course in one year at least.

2 Notwithstanding the preceding paragraph, the students enrolled in the Doctoral Leadership Program as stipulated in the Graduate Schools Regulations Article 25-2, paragraph 1, may replace the requirements of the successful thesis screening and final examination with the following:

(1) An examination on advanced specialized knowledge and skills in the student's area of specialization and basic knowledge and understanding in related areas that must be acquired or cultivated in the master's course concerned; and

(2) A screening on the ability that is required of the student to proactively conduct research leading to a doctoral thesis and that must be acquired in the master's course concerned

(Requirements for Completing Doctoral Courses)

Article 15: To complete a doctoral course, students need to be enrolled in the course for at least three years, obtain 16 credits or more by completing the class subjects indicated in appended table 2, receive necessary research guidance, submit a doctoral thesis during the enrollment period, and pass the screening of the thesis and final examination, with the exception of students whom the Dean of the Graduate School recognizes as having achieved outstanding research results following deliberations by the Faculty Council, for whom an enrollment duration of one year at least shall suffice (for students who completed a Master's Program in less than two years, a total enrollment duration of three years at least).

(Submission of Thesis)

Article 16: The students in the master's courses must submit, upon approval of their supervisor and subadvisors, their master's thesis to the Dean of the Graduate School by the date specified separately.

Article 17: The students in the doctoral courses must submit, upon approval of their supervisor and subadvisors, their doctoral thesis to the Dean of the Graduate School by the date specified separately.

(Thesis Screening)

Article 18: Theses submitted as part of the requirements for academic degrees shall be screened pursuant to the provisions of the Hiroshima University Degree Regulations (Regulations No. 8 of April 1, 2004) and the Internal Regulations of the Graduate School of Advanced Science and Engineering based on the Hiroshima University Degree Regulations (approved by the Dean of the Graduate School on April 1, 2020).

(Final Examination)

Article 19: The final examination for the master's and doctoral courses shall be taken by the students who have obtained required credits, received necessary research guidance and submitted their prescribed thesis.

2 The date and method of final examination shall be announced in advance.

(Leave of Absence)

Article 20: Students wishing to take a leave of absence must complete the prescribed procedure and obtain approval from the Dean of the Graduate School.

(Withdrawal)

Article 21: Students wishing to withdraw from the university must complete the prescribed procedure and obtain approval from the President of the University.

(Transfer)

Article 22: Students wishing to transfer to another graduate school must complete the prescribed procedure and apply to the President of the University.

(Re-admission)

Article 23: Students who discontinued their studies in the master's or doctoral course and wish to apply for re-admission to the course may apply to the President of the University only at the beginning of an academic year, following deliberations by the Faculty Council.

2 The year of study and the number of years that students re-admitted to the Graduate School may remain in their respective course shall be indicated separately.

(Change in Diploma Programs)

Article 24: Students wishing to change their diploma programs must obtain approval from the Dean of the Graduate School following deliberations by the Faculty Council.

(Miscellaneous Regulations)

Article 25: Any necessary matters relevant to education in the Graduate School not stipulated in the present By-laws shall be determined separately following deliberations by the Faculty Council.

Supplementary Provisions

The present By-laws shall come into force on April 1, 2020.

Appended Table 1 (Article 2, 2)

Diploma program	Master's courses	Doctoral courses
Mathematics Program	The course strives to foster engineers who are equipped with high-level mathematics research skills and specialized capability in their specialized fields; who boast extensive knowledge regarding mathematics; who can solve problems in cooperation with researchers, educators, mathematicians, etc.; and who can carry out application, analysis, evaluation and integration of their expertise for creative activities. The course also aims to develop researchers equipped with high-level, specialized capability with which they can work on mathematical problems occurring in industrial society and other fields of science.	The course strives to foster engineers who are equipped with prominent mathematics research skills and specialized capability in their specialized fields; who boast extensive knowledge regarding mathematics; who can solve problems in cooperation with researchers, educators, mathematicians, etc.; and who can carry out application, analysis, evaluation and integration of their expertise for creative activities. The course also aims to develop researchers equipped with learning based on a global perspective and also with high-level, specialized capability with which they can perform mathematics research independently and work on mathematical problems occurring in industrial society and other fields of science.
Physics Program	Composed of a wide range of physics, which is the foundation of natural science, such as astrophysics/astronomy, elementary particle/ nuclear physics, condensed matter physics using advanced light sources, and synchrotron radiation science, the course strives to enable students to learn techniques to explore specialized knowledge and truth; and to foster researchers, educators and high-level, specialized engineers who can contribute to solving social problems with a wide field of view, flexible thinking ability, and research and development ability.	Composed of a wide range of physics, which is the foundation of natural science, such as astrophysics/astronomy, elementary particle/ nuclear physics, condensed matter physics using advanced light sources, and synchrotron radiation science, the course strives to enable students to learn techniques to explore specialized knowledge and truth; and to foster researchers, educators and high-level, specialized engineers who can contribute to solving social problems with a wide field of view, flexible thinking ability, and a prominent ability to work on research and development in the global arena.
Earth and Planetary Systems Science Program	The course aims to enable students to obtain world-class expertise and research skills in basic and applied areas of earth and planetary science; and to foster researchers, educators, and high-level, specialized engineers who can contribute to solving social problems from a broad perspective.	The course aims to enable students to obtain globally high-level expertise and prominent research skills in basic and applied areas of earth and planetary science; and to foster researchers, educators, and high-level, specialized engineers who can contribute to solving social problems from a broad perspective.
Basic Chemistry Program	The course strives to develop researchers and high-level, specialized engineers who have expertise and experimental skills in areas of basic chemistry, who can promote advanced research from a broad perspective, and who can contribute to solving social problems. The course also aims to foster	The course strives to develop researchers and high-level, specialized engineers who have high-level expertise and experimental skills in areas of basic chemistry, who can promote advanced research from a broad perspective with an eye on global issues, and who can contribute to

	educators who have expertise and knowledge in areas of basic chemistry and who can hand down the universal chemical laws and fundamental principles into the future.	solving social problems. The course also aims to foster educators who have high-level expertise and knowledge in areas of basic chemistry and who can hand down the universal chemical laws and fundamental principles into the future.
Applied Chemistry Program	The course strives to foster researchers and high-level, specialized engineers who can analyze physical properties, structures, reactivity, etc. of materials on the molecule level, can design and develop new functional materials, and can connect such analysis, design and development with new chemical systems; who are equipped with an understanding of a wide range of fields; and who can contribute to society by taking a chemical approach in phases, from design of environmentally safe molecules and responses to development of environmentally harmonious processes.	The course strives to foster researchers and high-level, specialized engineers who are equipped with practical research capabilities to solve social problems from a high perspective based on their ability to create new functional materials and new energy sources and their understanding of a wide range of fields; who boast the ability to establish distinctive research plans and a global mind; and who can serve as instructors.
Chemical Engineering Program	The course aims to develop high-level, specialized engineers and researchers who can identify and solve problems from local and global points of view based on their knowledge regarding chemistry and chemical engineering and who can underpin development of the manufacturing industry, including the chemical industry in the next generation.	The course aims to develop high-level, specialized engineers and researchers who can identify and solve problems from local and global points of view based on their high-level knowledge regarding chemistry and chemical engineering, who can demonstrate their ability in the global arena, and who can underpin development of the manufacturing industry, including the chemical industry in the next generation.
Electrical, Systems, and Control Engineering Program	The course strives to develop high-level, specialized engineers and researchers who can take a leading role in development of advanced technology based on a wide range of basic knowledge required for effectively operating actual systems that support society, such as a large and complicated system and a system organically integrated with humans, from the perspective of system engineering, as well as based on specialized knowledge of state-of-the-art technology and applications.	The course strives to develop high-level, specialized engineers, researchers and educators who can develop new methods for analysis, design, control and operation of actual systems that support society, such as a large and complicated system and a system organically integrated with humans, based on mathematical fundamentals from the perspective of system engineering; and who can make cross-disciplinary and cross-sectional responses and take a global perspective to address challenges that humans have never experienced before.
Mechanical Engineering Program	The course aims to develop researchers and high-level, specialized engineers who can work on research and development for next-generation machine design and manufacturing technology, as well as for optimization, functional enhancement and	The course aims to develop researchers and high-level, specialized engineers who can lead advanced, high-level research and development for next-generation machine design and manufacturing technology, as well as for optimization, functional

	intellectualization of next-generation machine systems, from a wide and global perspective based on specialized knowledge regarding mechanical engineering and a wide range of knowledge and intelligence required for its engineering application.	enhancement and intellectualization of next-generation machine systems, from a wide and global perspective based on high-level, specialized knowledge regarding mechanical engineering and a wide range of knowledge and intelligence required for its engineering application.
Transportation and Environmental Systems Program	The course aims to enable students to create and establish a system for coexistence in which artificial objects, such as transport equipment, and the natural environment exist together in harmony on the basis of a wide range of basic and applied knowledge regarding transportation system engineering and environmental system engineering; and to comprehensively solve social problems while realizing the integration of understanding with the other area of expertise. By doing so, the course strives to produce high-level, specialized engineers and researchers who can perform advance research.	The course aims to enable students to create and establish a system for coexistence in which artificial objects, such as transport equipment, and the natural environment exist together in harmony on the basis of a wide range of basic and applied knowledge regarding the transportation system engineering and environmental system engineering; and to comprehensively solve social problems while realizing the integration of understanding with the other area of expertise. By doing so, the course strives to produce high-level, specialized engineers and researchers who can perform advance research.
Architecture Program	The course aims to develop high-level, specialized engineers and researchers who are equipped with expertise regarding architecture planning, structures, design, the environment, materials and production/ urban planning and with practical ability to integrate such knowledge; and who can work on the development of technology that meets the needs of the users of architecture and society and other activities at home or abroad.	The course aims to develop high-level, specialized engineers, researchers and educators who are equipped with expertise regarding architecture planning, structures, design, the environment, materials and production /urban planning and with practical ability to integrate such knowledge; and who can lead the development of technology that meets the needs of the users of architecture and society and other activities at home or abroad.
Civil and Environmental Engineering Program	The course strives to foster high-level, specialized technocrats who are equipped with extensive knowledge in the field of civil and environmental engineering, high ethics and a lofty sense of their missions and who can lead domestic and overseas efforts to establish/maintain social infrastructure, prevent disasters and conserve the environment; high-level, specialized engineers who can solve problems regarding social infrastructure both at home and abroad based on their high-level management ability and global perspective; and researchers who can underpin the development of cutting-edge technologies that will contribute to establishing social infrastructure, preventing disasters, and conserving global and regional environments.	The course strives to foster leading technocrats who are equipped with extensive knowledge in the field of civil and environmental engineering and the ability to solve problems and who can lead national and regional efforts to establish/maintain social infrastructure and prevent disasters; construction engineers who can comprehensively address problems regarding social infrastructure both at home and abroad based on their high-level skills and management ability; high-level, specialized engineers and researchers, including environmental engineers, who can trailblaze new industrial fields in terms of the conservation of the natural environmental and the development of recycling technologies; and researchers and educators who work under a lofty

		sense of their missions in the field of civil and environmental engineering in order to create a new, promising specialty toward the conservation of the global environment, identify and solve individual, specific problems, and contribute to the development of globally advanced scientific technology.
Informatics and Data Science Program	The course aims to foster globally minded, high-level, specialized engineers and researchers who can implement high-level technology in the fields of advanced research and development based on their knowledge and skills of informatics and data science in order to address social and cross-disciplinary problems; and who are equipped with excellent qualities to promote research and development as a team member.	The course aims to foster globally minded, high-level, specialized engineers and researchers who can implement high-level technology in the fields of advanced research and development based on their knowledge and skills of informatics and data science in order to address social and cross-disciplinary problems; and who are equipped with excellent qualities to promote research and development by demonstrating leadership.
Quantum Matter Program	The course strives to develop researchers, educators, and high-level, specialized engineers who are equipped with expertise regarding materials science, condensed material physics, material science and engineering, and electronic engineering; and who are able to contribute to international and local societies by applying their expertise to creation, design, and realization of materials, devices, and systems that have new functions required by society.	The course strives to develop creative researchers, educators, and high-level, specialized engineers who are equipped with expertise regarding materials science, condensed material physics, material science and engineering, and electronic engineering; and who are able to contribute to international and local societies by applying their expertise to creation, design, and realization of materials, devices, and systems that have new functions required by society.
Transdisciplinary Science and Engineering Program	The course strives to develop researchers and educators who understand a nature-oriented point of view and a human-oriented point of view; who can demonstrate their ability not only in Japan but also in the global arena; and who are equipped with research abilities, expertise, specialized skills, and cross-disciplinary points of view in the areas of core expertise and related areas, such as the natural environment, natural disasters, integrated physics, information systems, media, and development technology. The course also aims to foster government officials and high-level, specialized professionals with a bird's eye view and problem-solving capability based on understanding of diverse cultures and global insight.	The course strives to develop researchers and educators who can trailblaze new academic fields by understanding a nature-oriented point of view and a human-oriented point of view, demonstrating their ability not only in Japan but also in the global arena, and obtaining research abilities, expertise, specialized skills, and cross-disciplinary points of view in the areas of core expertise and related areas, such as the natural environment, natural disasters, integrated physics, information systems, media, and development technology. The course also aims to foster world-class government officials and high-level specialized professionals with a bird's eye view and problem-solving capability based on understanding of diverse cultures and global insight.

2. Class Registration Procedure

Please complete the following procedure in line with the By-laws of the Graduate School of Advanced Science and Engineering, Hiroshima University (Article 8).

(1) Class Registration Procedure

① For your class registration, please complete the necessary procedure through My Momiji, using an on-campus or off-campus PC.

My Momiji is a personal online page which you can access via the Student Information Network Momiji, the online portal for Hiroshima University's students.

Student Information Network Momiji: https://momiji.hiroshima-u.ac.jp/momiji-top/index.shtml

② If you cannot register for classes through My Momiji due to some reason, please contact the support office in charge of your program (e.g. support office in charge of your master's/doctoral course).

(2) Class Registration Period

① In principle, you need to complete your class registration within one week from the first class-day of each semester or each term.

② For the specific schedule, please check the Student Information Network Momiji.

③ In principle, you cannot register for classes or change your registration after the class registration period.

④ There are cases where schools and graduate schools set their own class registration periods for intensive lectures and other programs. In these cases, please check relevant notices on My Momiji or contact the support office of the relevant school or graduate school (e.g. support office in charge of the relevant master's/doctoral course).

⑤ Other information related to class registration is provided through My Momiji or other means.

*** My Momiji**

Since information from the university to students is provided through My Momiji, please be sure to log in to My Momiji and check it at least once a day. If My Momiji does not work properly, however, necessary information is posted on your graduate school's bulletin board. In addition, important information is also posted on the bulletin board.

Please ensure that you are free from any disadvantage caused by your failure to check My Momiji or your graduate school's bulletin board.

3. Research Ethics Education

In August 2014, the Guidelines for Responding to Misconduct in Research were decided by the Minister of Education, Culture, Sports, Science and Technology. In AY 2015, Hiroshima University made it mandatory for faculty members engaged in research activities to receive research ethics education.

In addition, the Outline of the 3rd Graduate School Education Promotion Measures (decided by the Minister of Education, Culture, Sports, Science and Technology in March 2016) requires universities to make more efforts to ensure that students are fully aware of the norms regarding research ethics and to secure international credibility of doctoral degrees granted by the universities by providing research ethics education and improving their systems for supervising and screening doctoral theses. In line with this, Hiroshima University has introduced Research Ethics Education for Students.

At the Graduate School of Advanced Science and Engineering, we provide Research Ethics Education for Students as follows:

① Research Ethics Education: Graduate School Students - Basic

Timing: When a research ethics seminar is held as part of a freshman orientation session (April or October)
Participant unit: All freshmen

Style: In a lecture style (e.g. watching a DVD) with some handouts (in Japanese, English and Chinese) distributed

Attendance check: Attendance check is mandatory.

Other: (1) If you cannot take the lecture above due to unavoidable circumstances (e.g. students in full time employment), you need to take the relevant APRIN e-leaning course.

(Course)
Graduate School of Advanced Science and Engineering Graduate Students: Basic Course

(Unit)
Research Misconduct_RCR-S
Ethical Issues in the Management of Data in Engineering Research_RCR-S
Responsible Authorship_RCR-S

(2) If you had already received Research Ethics Education (Graduate School Students - Basic) at the time of enrollment in your master's courses, you are exempt from the requirement to receive Research Ethics Education (Graduate School Students – Basic) at the time of enrollment in your doctoral course.

② Research Ethics Education: Graduate School Students – Advanced (M) and Advanced (D)

Timing: Students in master's courses need to receive Research Ethics Education (Graduate School Students – Advanced [M]) before beginning to prepare their master's thesis, while students in doctoral courses need to receive Research Ethics Education (Graduate School Students – Advanced [D]) before beginning to prepare their doctoral thesis.
(Students expected to complete their courses in March and September need to receive the necessary education by October and April, respectively, in the academic year when they are expected to complete their courses.)

Participant unit: Laboratory unit, in principle (Two or more laboratories can jointly provide the education.)

Provider of the Research Ethics Education: Supervisor, in principle

Style: In a discussion style as part of Special Research, a research guidance subject of each diploma program, using Section IV (in Japanese and English) of the JSPS textbook *For the Sound Development of Science* and some handouts (in Japanese, English and Chinese). The relevant faculty member and students read the textbook closely, and then the students make a summary, based on which the faculty member asks them questions. By doing so, they discuss cases of misconduct referred to in the textbook, problems occurring in their specialized fields and general problems.

Attendance check: Completion Certificates (with the relevant faculty member's signature) are used to confirm students' attendance. After providing Research Ethics Education for Students, the relevant faculty member needs to submit the Completion Certificates promptly to the support office in charge of their diploma program (e.g. support office

in charge of the relevant master's/doctoral course).

Other: (1) If you cannot take the discussion-style Research Ethics Education above due to unavoidable circumstances (e.g. students in full time employment), you need to take the relevant APRIN e-leaning after obtaining approval from your supervisor/subadvisors.

(Course)

Graduate School of Advanced Science and Engineering Graduate Student: Advanced Course

(Unit)

Responsible Authorship_RCR-S

(2) Even if you had already received Research Ethics Education (Graduate School students - Advanced [M]) by the time of completing your master's course, you definitely need to receive Research Ethics Education (Graduate School Students – Advanced [D]) by the time of completing your doctoral course.

4. Graduate Skill Up Subjects

The following subjects are offered at Hiroshima University Graduate School as subjects that all graduate students can take to improve their skills.
In principle, check the syllabus and registration subjects by using "My Momiji".

<Courses opened in FY2020>

Subjects	No. of Credits	Establishment department
Pre Academic English II	2	Institute for Foreign Language Research and Education
Academic Writing I	2	
Academic Presentation I	2	
Advanced English II	2	
Advanced seminar on English Rhetoric & Writing for Scientific Papers	2	Writing Center
English Rhetoric & Writing Scientific Papers I	1	
Principles and Methods of Academic Writing for Prospective College Teachers	2	
Academic Writing for Research Papers	2	
Progress of Studies and Development of Society	2	Headquarters for Education

5. The HIRAKU Practical Training Program

Global Career Design Center ("GCDC") provides "the HIRAKU Practical Training Program" to doctorate students (D) and postdocs (PD) in early research career. It aims to nurture active researchers that will challenge new areas/disciplines. The HIRAKU Practical Training Program mainly consists of the subject classes/courses or seminars/events programmed by GCDC, to help you gain transferrable knowledge/skills to be maximized in the diversified opportunities in the society.
You can leverage our core IT system called "Young Researchers' Portfolio (or HIRAKU-PF)" as well, to keep track of your training/development record, to self-assess your competencies as a researcher, and to understand your strengths or selling points. You can also raise a counseling request via the system to receive relevant guidance and advice to develop your career. Please log in the system now to enjoy the multiple functions to assist you.

Subjects	Establishment department
Innovation Practice	GCDC
Pathway to becoming a Data Scientist	
Career Management for Highly Skilled Innovators	
Long-term internship	
Skills and Arts of Leadership	
Career Management for Engineer	
Career Management - Theory & Career Development	
Stress Management	
On-demand Workshops on Academic Papers in English	Writing Center
Principles and Methods of Academic Writing for Prospective College Teachers	
Preparing Future Faculty Course	Graduate School of Humanities and Social Sciences
Developing Designing Ability	Graduate School of Advanced Science and Engineering
Technology Transfer	
Technology Strategy for Management	
Intellectual Property, Finance and Accounting	
MOT and Venture Business	
Nano Bio Chemistry Symposium	
Lecture on Developing Communication Skills	Graduate School of Integrated Sciences for Life
Theory and experiment of proteomics	

Master’s Course

6. Class Subjects and Registration (Master's Courses)

Appended Table 2 (Article 4 and Article 5, 1)
Mathematics Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio-nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Mathematical Omnibus	1	2		14	25 or more
		Exercises in Mathematics	1～2	4			
		Exercises in Mathematics A	1	2			
		Exercises in Mathematics B	1	2			
		Seminar in Mathematics	1～2	4			
		Algebra Seminar I	1～2		4	4 or more	
		Algebra Seminar II	1～2		4		
		Topology Seminar	1～2		4		
		Differential Geometry Seminar	1～2		4		
		Seminar on Real Analysis and Functional Equations	1～2		4		
		Seminar on Complex Analysis and Functional Equations	1～2		4		
		Mathematical Statistics Seminar	1～2		4		
		Probability Seminar	1～2		4		
		Geometric and Algebraic Analysis Seminar	1～2		4		
		Algebra A	1・2		2		
		Algebra B	1・2		2		
		Topics in Algebra A	1・2		2		
		Topics in Algebra B	1・2		2		
		Topics in Algebra C	1・2		2		
		Topics in Algebra D	1・2		2		
		Geometry A	1・2		2		
		Geometry B	1・2		2		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	Topics in Geometry A	1・2		2		
	Topics in Geometry B	1・2		2		
	Topics in Geometry C	1・2		2		
	Topics in Geometry D	1・2		2		
	Mathematical Analysis A	1・2		2		
	Mathematical Analysis B	1・2		2		
	Topics in Mathematical Analysis A	1・2		2		
	Topics in Mathematical Analysis B	1・2		2		
	Topics in Mathematical Analysis C	1・2		2		
	Topics in Mathematical Analysis D	1・2		2		
	Probability and Mathematical Statistics A	1・2		2		
	Probability and Mathematical Statistics B	1・2		2		
	Probability and Mathematical Statistics C	1・2		2		
	Probability and Mathematical Statistics D	1・2		2		
	Topics in Probability and Mathematical Statistics A	1・2		2		
	Topics in Probability and Mathematical Statistics B	1・2		2		
	Topics in Probability and Mathematical Statistics C	1・2		2		
	Topics in Probability and Mathematical Statistics D	1・2		2		
	Geometric and Algebraic Analysis A	1・2		2		
	Geometric and Algebraic Analysis B	1・2		2		
	Geometric and Algebraic Analysis C	1・2		2		
	Special Lectures in Mathematics	1・2		1		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Mathematics Program: 18 or more credits (14 credits of compulsory subjects and 4 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Physics Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Introductory Course to Advanced Physics	1	2		10	25 or more
		Special Exsecise in Physics A	1	2			
		Special Exsecise in Physics B	1	2			
		Special Research in Physics	1～2	4			
		Quantum Field Theory	1		2	8 or more	
		Elementary Particle Physics	1		2		
		Lattice Quantum Chromodynamics	1		2		
		Cosmology and Astrophysics	1		2		
		Relativistic Cosmology	1		2		
		Quark Physics	1		2		
		High Energy Physics	1		2		
		X-ray and Gamma-ray Astrophysics	1		2		
		Observational Astronomy in Optical and Near-Infrared Region	1		2		
		Special Topics in Synchrotron Radiation Science A	1		1		
		Special Topics in Synchrotron Radiation Science B	1		1		
		Materials Structure Physics	1		2		
		Electronic Properties of Condensed Matter	1		2		
		Optical Properties of Solids	1		2		
		Surface Physics	1		2		
		Laboratory in Synchrotron Radiation Science	1		1		
		Special Lecture in Physics A	1・2		1		
		Special Lecture in Physics B	1・2		1		
		Special Lecture in Physics C	1・2		1		
		Special Lecture in Physics D	1・2		1		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	International Research Internship	1・2		2		
	Exercise in Physics I	1		2		
	Exercise in Physics II	1		2		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Physics Program: 18 or more credits (10 credits of compulsory subjects and 8 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Earth and Planetary Systems Science Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Integrated Seminar on Earth and Planetary Systems Science	1	2		11 or more	25 or more
		Midterm Exercise for Earth and Planetary Systems Science	2	1			
		Special Exercise for Earth and Planetary Systems Science A	1	2			
		Special Exercise for Earth and Planetary Systems Science B	1	2			
		Special Study for Earth and Planetary Systems Science	1～2	4			
		Survey of Earth and Planetary Systems Science	1		2	7 or more	
		Evolution of the Solar System	1		2		
		History of the Earth	1		2		
		Geodynamics	1		2		
		Fault and Earthquake	1		2		
		Rock Rheology	1・2		2		
		Deep Earth Materials Science	1・2		2		
		Analytical Techniques for Earth and Planetary Materials Science	1・2		2		
		Special Lecture on Earth and Planetary Systems Science A	1・2		2		
		Special Lecture on Earth and Planetary Systems Science B	1・2		2		
		Exercise for Globalization I	1・2		1		
		Exercise for Globalization II	1・2		1		
		Externship for Earth and Planetary Systems Science	1・2		1		
		Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Earth and Planetary Systems Science Program: 18 or more credits (11 credits of compulsory subjects and 7 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1･2: Register regardless of your year

Basic Chemistry Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Introduction to Physical Chemistry	1	2		14 or more	25 or more
		Introduction to Inorganic Chemistry	1	2			
		Introduction to Organic Chemistry	1	2			
		Exercises in Chemistry A	1	2			
		Exercises in Chemistry B	1	2			
		Master's Thesis in Chemistry	1～2	4			
		Structural Physical Chemistry	1・2		2	4 or more	
		Solid State Chemistry	1・2		2		
		Coordination Chemistry	1・2		2		
		Analytical Chemistry	1・2		2		
		Organic Stereochemistry	1・2		2		
		Photochemistry of Advanced Material	1・2		2		
		Radiation Chemistry	1・2		2		
		Quantum Chemistry	1・2		2		
		Chemical Kinetics and Dynamics	1・2		2		
		Organic Reaction Chemistry	1・2		2		
		Organic Main Group Chemistry	1・2		2		
		Special Lectures in Chemistry A	1・2		2		
		Special Lectures in Chemistry B	1・2		2		
		Special Lectures in Chemistry C	1・2		2		
		Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Basic Chemistry Program: 18 or more credits (14 credits of compulsory subjects and 4 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1･2: Register regardless of your year

Applied Chemistry Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits		
				Compulsory	Compulsory Elective			
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more		2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1			
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1			
		Academic approach to SDGs - A	1・2		1			
		Academic approach to SDGs - B	1・2		1			
		Practical Approach to SDGs	1・2		2			
		Understanding diversity and Inclusion	1・2		1			
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more		
		Data Literacy in Medicine	1・2		1			
		Career Management - Theory & Career Development	1・2		2			
		Career Management for Engineer	1・2		2			
		Stress Management	1・2		2			
		Information security	1・2		2			
		Introduction to MOT	1・2		1			
		Entrepreneurship	1・2		1			
Common Graduate School Subjects	Internatio-nalism	Academic Writing I	1		1	1 or more		3 or more
		Exercises in International Academic Studies A	1・2		1			
		Exercises in International Academic Studies B	1・2		2			
	Sociality	MOT and Venture Business	1・2		1	2 or more		
		Technology Strategy for Management	1・2		1			
		Intellectual Property, Finance and Accounting	1・2		1			
		Technology Transfer	1・2		1			
		PBL for Technology Transfer	1・2		1			
		Future Creation Thinking (Basic)	1・2		1			
		International Standardization for Rule Making	1・2		1			
		Management of Technology for Science and Engineering	2		1			
		Idea Mining Workshop	1・2		1			
		Business Creation Practicum	1・2		1			
		Introduction to Fieldwork Method and Practice	1・2		1			
		Internship	1・2		1			
		Data Visualization A	1・2		1			
		Data Visualization B	1・2		1			
		Principles of Environment A	1・2		1			
		Principles of Environment B	1・2		1			
Subjects Specialized for the Program	Core Subjects	Advanced Porous Material	1		2	8 or more	18 or more	25 or more
		Organic Material Chemistry	1		2			
		Advanced Inorganic Materials Chemistry	1		2			
		Advanced Synthetic Polymer Chemistry	1		2			
		Functional Dye Chemistry	1		2			
		Materials Analytical Chemistry	1		2			
		Supramolecular Chemistry	1		2			
		Advanced Synthetic Polymer Chemistry	1		2			
		Hybrid Materials Chemistry	1		2			
		Special Exercises on Applied Chemistry A	1	2		8		
		Special Exercises on Applied Chemistry B	1	2				
		Special Study on Applied Chemistry	1～2	4				
		Physical Properties of Organic Compounds	1・2		2			
		Advanced Organic Reactions	1・2		2			
		Environmental Polymer Chemistry	1・2		2			
		Advanced Magnetic Resonance in Chemistry	1・2		2			
		Developing Debating Skills	1・2		1			
		Special Lecture on Applied Chemistry A	1・2		1			
		Special Lecture on Applied Chemistry B	1・2		1			
		Special Lecture on Applied Chemistry C	1・2		1			
		Special Lecture on Applied Chemistry D	1・2		1			
		Subjects Specialized for Other Programs				2 or more		

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits
- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits
- Subject Specialized for the Applied Chemistry Program: 18 or more credits (8 credits of compulsory subjects and 8 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1･2: Register regardless of your year

Chemical Engineering Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits		
				Compulsory	Compulsory Elective			
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more		2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1			
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1			
		Academic approach to SDGs - A	1・2		1			
		Academic approach to SDGs - B	1・2		1			
		Practical Approach to SDGs	1・2		2			
		Understanding diversity and Inclusion	1・2		1			
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more		
		Data Literacy in Medicine	1・2		1			
		Career Management - Theory & Career Development	1・2		2			
		Career Management for Engineer	1・2		2			
		Stress Management	1・2		2			
		Information security	1・2		2			
		Introduction to MOT	1・2		1			
		Entrepreneurship	1・2		1			
Common Graduate School Subjects	Internationalism	Academic Writing I	1		1	1 or more		3 or more
		Exercises in International Academic Studies A	1・2		1			
		Exercises in International Academic Studies B	1・2		2			
	Sociality	MOT and Venture Business	1・2		1	2 or more		
		Technology Strategy for Management	1・2		1			
		Intellectual Property, Finance and Accounting	1・2		1			
		Technology Transfer	1・2		1			
		PBL for Technology Transfer	1・2		1			
		Future Creation Thinking (Basic)	1・2		1			
		International Standardization for Rule Making	1・2		1			
		Management of Technology for Science and Engineering	2		1			
		Idea Mining Workshop	1・2		1			
		Business Creation Practicum	1・2		1			
		Introduction to Fieldwork Method and Practice	1・2		1			
		Internship	1・2		1			
		Data Visualization A	1・2		1			
		Data Visualization B	1・2		1			
		Principles of Environment A	1・2		1			
		Principles of Environment B	1・2		1			
Subjects Specialized for the Program	Core Subjects	Advanced Equilibrium and Transport Properties	1		2	8 or more	18 or more	25 or more
		Fine Particle Technology	1		2			
		Advanced Mass Transfer	1		2			
		Advanced Heat Transfer Engineering	1		2			
		Fluid Dynamics Analysis	1		2			
		Advanced Environmental Chemistry Engineering	1		2			
		Special Exercises on Chemical Engineering A	1	2		8		
		Special Exercises on Chemical Engineering B	1	2				
		Special Study on Chemical Engineering	1～2	4				
		Advanced Soft Materials Processing	1・2		2			
		Thermal Fluid Process Engineering	1・2		2			
		Complex Fluid Dynamics	1・2		2			
		Advanced Surface Control Engineering	1・2		2			
		Special Lecture on Chemical Engineering A	1・2		1			
		Special Lecture on Chemical Engineering B	1・2		1			
		Subjects Specialized for Other Programs				2 or more		

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits
- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits
- Subject Specialized for the Chemical Engineering Program: 18 or more credits (8 credits of compulsory subjects and 8 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1･2: Register regardless of your year

Electrical, Systems, and Control Engineering Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Special Exercises on Electorical, Systems, and Control Engineering A	1	2		8 or more	25 or more
		Special Exercises on Electorical, Systems, and Control Engineering B	1	2			
		Special Study on Electorical, Systems, and Control Engineering	1～2	4			
		Mathematics A	1・2		2	10 or more	
		Mathematics B	1・2		2		
		Mathematics C	1・2		2		
		Mathematics D	1・2		2		
		Mathematics E	1・2		2		
		Advanced Systems Planning	1・2		2		
		Advanced System Control	1・2		2		
		Advanced Social Systems Engineering	1・2		2		
		Advanced Cybernetics Engineering	1・2		2		
		Hyper Human Engineering	1・2		2		
		Advanced Power System Engineering	1・2		2		
		Advanced Cybernetics Engineering	1・2		2		
		Advanced Scheduling	1・2		2		
		Advanced Applied Mathematical Sciences	1・2		2		
		Advanced Signal Processing	1・2		2		
		Electric Power System Operation	1・2		2		
		Advanced Robotics	1・2		2		
		Advanced Biosystems Engineering	1・2		2		
		Advanced Learning Systems	1・2		2		
		Advanced Power Electronics	1・2		2		
		Special Lecture on Electorical, Systems, and Control Engineering A	1・2		2		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	Special Lecture on Electorical, Systems, and Control Engineering B	1・2		2		
	Special Lecture on Electorical, Systems, and Control Engineering C	1・2		2		
	Special Lecture on Electorical, Systems, and Control Engineering D	1・2		2		
	Special Lecture on Electorical, Systems, and Control Engineering E	1・2		2		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Electrical, Systems, and Control Engineering Program: 18 or more credits (8 credits of compulsory subjects and 10 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Mechanical Engineering Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Special Exercises on Mechanical Engineering A	1	2		8	25 or more
		Special Exercises on Mechanical Engineering B	1	2			
		Special Study on Mechanical Engineering	1～2	4			
		Advanced Fluid Mechanics	1・2		2	10 or more	
		Advanced Machinery Dynamics	1・2		2		
		Advanced Reactive Gas Dynamics	1・2		2		
		Applied Fracture Mechanics	1・2		2		
		Mechanical Behavior and Strength of Engineering Materials	1・2		2		
		Advanced Solid Mechanics	1・2		2		
		Advanced Control Engineering	1・2		2		
		Control System Design	1・2		2		
		Mechanical Engineering Design	1・2		2		
		Advanced Autonomous Systems Engineering	1・2		2		
		Advanced Thermal Engineering	1・2		2		
		Advanced Plasma Engineering	1・2		2		
		Theory of Engineering Elasto-plasticity	1・2		2		
		Optimization of Structural and Process Design	1・2		2		
		Applied Materials Physics	1・2		2		
		Combustion	1・2		2		
		Advanced Microstructure of Materials	1・2		2		
		Advanced in Composite Science and Engineering	1・2		2		
		Advanced Energy Plant	1・2		2		
		Advanced Manufacturing Management Systems	1・2		2		
		Advanced Precision Machining	1・2		2		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	Nuclear Energy Applications	1・2		2		
	Advanced Biomass Resources	1・2		2		
	Advanced Biofuel Engineering	1・2		2		
	Advanced Quantum Materials Engineering	1・2		2		
	Exercise of radiation measurement	1・2		2		
	Japanese-style Business Management and Manufacturing	1・2		2		
	Japanese-style Manufacturing	1・2		2		
	Special Lecture on Mechanical Engineering A	1・2		2		
	Special Lecture on Mechanical Engineering B	1・2		2		
	Special Lecture on Mechanical Engineering C	1・2		2		
	Special Lecture on Mechanical Engineering D	1・2		2		
	Special Lecture on Mechanical Engineering E	1・2		2		
	Special Lecture on Mechanical Engineering F	1・2		2		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Mechanical Engineering Program: 18 or more credits (8 credits of compulsory subjects and 10 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Transportation and Environmental Systems Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Special Exercises on Transportation and Environmental Systems A	1	2		8	25 or more
		Special Exercises on Transportation and Environmental Systems B	1	2			
		Special Study on Transportation and Environmental Systems	1～2	4			
		Advanced Strength of Material	1・2		2	10 or more	
		Advanced Finite Element Method	1・2		2		
		Advanced Computational Fluid Dynamics	1・2		2		
		Initial Design of Marine Vehicles	1・2		2		
		Seakeeping and Airworthiness for Ships and Aircrafts	1・2		2		
		System Planning	1・2		2		
		Advanced Instrumentation and Control for Structures	1・2		2		
		Computational Fracture Mechanics	1・2		2		
		Advanced Optimal Design	1・2		2		
		Advanced Remote Sensing Engineering	1・2		2		
		Transportation and Environmental Systems Internship	1・2		1		
		Special Lecture on Transportation and Environmental Systems A	1・2		1		
		Special Lecture on Transportation and Environmental Systems B	1・2		1		
		Special Lecture on Transportation and Environmental Systems C	1・2		1		
		Special Lecture on Transportation and Environmental Systems D	1・2		1		
		Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Transportation and Environmental Systems Program: 18 or more credits (8 credits of compulsory subjects and 10 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1･2: Register regardless of your year

Architecture Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits		
				Compulsory	Compulsory Elective			
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more		2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1			
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1			
		Academic approach to SDGs - A	1・2		1			
		Academic approach to SDGs - B	1・2		1			
		Practical Approach to SDGs	1・2		2			
		Understanding diversity and Inclusion	1・2		1			
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more		
		Data Literacy in Medicine	1・2		1			
		Career Management - Theory & Career Development	1・2		2			
		Career Management for Engineer	1・2		2			
		Stress Management	1・2		2			
		Information security	1・2		2			
		Introduction to MOT	1・2		1			
		Entrepreneurship	1・2		1			
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more		3 or more
		Exercises in International Academic Studies A	1・2		1			
		Exercises in International Academic Studies B	1・2		2			
	Sociality	MOT and Venture Business	1・2		1	2 or more		
		Technology Strategy for Management	1・2		1			
		Intellectual Property, Finance and Accounting	1・2		1			
		Technology Transfer	1・2		1			
		PBL for Technology Transfer	1・2		1			
		Future Creation Thinking (Basic)	1・2		1			
		International Standardization for Rule Making	1・2		1			
		Management of Technology for Science and Engineering	2		1			
		Idea Mining Workshop	1・2		1			
		Business Creation Practicum	1・2		1			
		Introduction to Fieldwork Method and Practice	1・2		1			
		Internship	1・2		1			
		Data Visualization A	1・2		1			
		Data Visualization B	1・2		1			
		Principles of Environment A	1・2		1			
		Principles of Environment B	1・2		1			
Subjects Specialized for the Program	Core Subjects	Advanced Architectural Environment and Building Service	1		2	8 or more	18 or more	25 or more
		Advanced Architectural Project	1		2			
		Advanced Urban Environmental Planning	1		2			
		Advanced Design of Steel Structures	1		2			
		Advanced Reinforced Concrete Structures	1		2			
		Advanced Performance Design of Buildings	1		2			
		Structure and Construction Techniques of Building	1		2			
		Dynamics of Building-Structure	1		2			
		Advanced Architectural Planning and Programing	1		2			
		Advanced Timber Structures	1		2			
		Advanced Human Environmental Engineering	1		2			
		Special Exercises on Architecture A	1	2		8		
		Special Exercises on Architecture B	1	2				
		Special Study on Architecture	1～2	4				
		Environmental & Architectural Design I	1・2		2			
		Environmental & Architectural Design II	1・2		1			
		Advanced Theory of Earthquake Engineering	1・2		2			
		Exercises in Loads on Buildings	1・2		1			
		Practice of Structural Design for Reinforced Concrete Structure	1・2		1			
		Practice of Structural Design for Steel Structures	1・2		1			
		Architectural Design Internship	1・2		4			
		Special Lecture on Architecture A	1・2		1			
		Special Lecture on Architecture B	1・2		1			
		Special Lecture on Architecture C	1・2		1			
		Special Lecture on Architecture D	1・2		1			

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits		
			Compulsory	Compulsory Elective			
	Special Lecture on Architecture E	1・2		1			
	Subjects Specialized for Other Programs				2 or more		

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits
- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits
- Subject Specialized for the Architecture Program: 18 or more credits (8 credits of compulsory subjects and 8 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Civil and Environmental Engineering Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits		
				Compulsory	Compulsory Elective			
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more		2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1			
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1			
		Academic approach to SDGs - A	1・2		1			
		Academic approach to SDGs - B	1・2		1			
		Practical Approach to SDGs	1・2		2			
		Understanding diversity and Inclusion	1・2		1			
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more		
		Data Literacy in Medicine	1・2		1			
		Career Management - Theory & Career Development	1・2		2			
		Career Management for Engineer	1・2		2			
		Stress Management	1・2		2			
		Information security	1・2		2			
		Introduction to MOT	1・2		1			
		Entrepreneurship	1・2		1			
Common Graduate School Subjects	Internatio-nalism	Academic Writing I	1		1	1 or more		3 or more
		Exercises in International Academic Studies A	1・2		1			
		Exercises in International Academic Studies B	1・2		2			
	Sociality	MOT and Venture Business	1・2		1	2 or more		
		Technology Strategy for Management	1・2		1			
		Intellectual Property, Finance and Accounting	1・2		1			
		Technology Transfer	1・2		1			
		PBL for Technology Transfer	1・2		1			
		Future Creation Thinking (Basic)	1・2		1			
		International Standardization for Rule Making	1・2		1			
		Management of Technology for Science and Engineering	2		1			
		Idea Mining Workshop	1・2		1			
		Business Creation Practicum	1・2		1			
		Introduction to Fieldwork Method and Practice	1・2		1			
		Internship	1・2		1			
		Data Visualization A	1・2		1			
		Data Visualization B	1・2		1			
		Principles of Environment A	1・2		1			
		Principles of Environment B	1・2		1			
Subjects Specialized for the Program	Core Subjects	Geotechnical Engineering	1		2	8 or more	18 or more	25 or more
		Advanced Structural Engineering	1		2			
		Advanced Structural Concrete	1		2			
		Management of Natural Disasters	1		2			
		Environmental Fluid Mechanics	1		2			
		Advanced Environmental Coastal Engineering	1		2			
		Advanced Environmental Protection Engineering	1		2			
		Infrastructure and Regional Planning	1		2			
		Advanced Technical English Writing for Civil and Environmental Engineering	1		2			
		Special Exercises on Civil and Environmental Engineering A	1	2		8		
		Special Exercises on Civil and Environmental Engineering B	1	2				
		Special Study on Civil and Environmental Engineering	1～2	4				
		Advanced Structural Materials	1・2		2			
		Advanced River Engineering	1・2		2			
		Advanced Meteorology	1・2		2			
		Environmental risk management	1・2		2			
		Advanced Environmental Systems Engineering	1・2		2			
		Special Lecture on Civil and Environmental Engineering A	1・2		1			
		Special Lecture on Civil and Environmental Engineering B	1・2		1			
		Special Lecture on Civil and Environmental Engineering C	1・2		1			
		Special Lecture on Civil and Environmental Engineering D	1・2		1			
		Subjects Specialized for Other Programs				2 or more		

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits
- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits
- Subject Specialized for the Civil and Environmental Engineering Program: 18 or more credits (8 credits of compulsory subjects and 8 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

- If you have completed the double degree program with National Central University (NCU), Taiwan, and have earned credits of subjects provided by the NCU Graduate School of Engineering and designated by the HU Graduate School of Advanced Science and Engineering, you can include them in credits of Subject Specialized for the Program. The subjects designated by the HU Graduate School of Advanced Science and Engineering shall be indicated separately.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1･2: Register regardless of your year

Informatics and Data Science Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Special Exercises on Informatics and Data Science A	1	2		8	25 or more
		Special Exercises on Informatics and Data Science B	1	2			
		Special Study on Informatics and Data Science	1～2	4			
		Advanced Parallel Architectures and Algorithms	1・2		2	10 or more	
		Embedded System	1・2		2		
		Database Engineering	1・2		2		
		Cryptography	1・2		2		
		Computational Complexity Theory	1・2		2		
		Mobile Computing	1・2		2		
		Applied Mechano-informatics	1・2		2		
		Dependable Computing	1・2		2		
		Artificial and Natural Intelligence	1・2		2		
		Information retrieval	1・2		2		
		Advanced Visual Information Processing	1・2		2		
		Image Analysis and Synthesis Technology	1・2		2		
		Human Computer Interaction	1・2		2		
		Advanced Software Engineering	1・2		2		
		Information Systems	1・2		2		
		Computational Statistics	1・2		2		
		Advanced Information and Media Processing	1・2		2		
		Advanced Natural Language Processing	1・2		2		
		Analysis in Information Science	1・2		2		
		Data Management	1・2		2		
		Machine Learning	1・2		2		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	Information Security	1・2		2		
	Special Lecture on Informatics and Data Science A	1・2		1		
	Special Lecture on Informatics and Data Science B	1・2		1		
	Special Lecture on Informatics and Data Science C	1・2		1		
	Special Lecture on Informatics and Data Science D	1・2		1		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Informatics and Data Science Program: 18 or more credits (8 credits of compulsory subjects and 10 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Quantum Matter Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Advanced Study in Quantum Matter	1～2	4		4	25 or more
		Exercises in Basic Sciences of Matter A	1		2	Either 2	
		Exercises in Electronics A	1		2		
		Exercises in Basic Sciences of Matter B	1		2	Either 2	
		Exercises in Electronics B	1		2		
		Academic Presentation in Basic Sciences of Matter	1・2		2	Either 2	
		Academic Presentation in Electronics	1・2		2		
		Seminar on Basic Sciences of Matter A	1・2		2	8 or more	
		Seminar on Basic Sciences of Matter B	1・2		2		
		Seminar on Electronics A	1・2		2		
		Seminar on Electronics B	1・2		2		
		Internship	1・2		2		
		Electron Theory in Solids	1・2		2		
		Solid State Physics	1・2		2		
		Strongly Correlated Electron Physics A	1・2		2		
		Strongly Correlated Electron Physics B	1・2		2		
		Magnetism A	1・2		2		
		Magnetism B	1・2		2		
		Low Temperature Physics A	1・2		2		
		Low Temperature Physics B	1・2		2		
		Photon Physics	1・2		2		
		Beam Physics	1・2		2		
		Accelerator Physics	1・2		2		
		Quantum Physics	1・2		2		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	Optics and photonics	1・2		2		
	Nanoscience	1・2		2		
	Quantum Optics	1・2		2		
	Plasmonics	1・2		2		
	Functional Materials for Hydrogen	1・2		2		
	Physics of Semiconductor Devices	1・2		2		
	Physics of Electron Devices	1・2		2		
	LSI Devices and Process Engineering	1・2		2		
	System LSI Design Engineering	1・2		2		
	Analog Integrated Circuits A	1・2		2		
	Analog Integrated Circuits B	1・2		2		
	Electromagnetism for RF and High-speed Circuit Design	1・2		2		
	Biomagnetics	1・2		2		
	Molecular and Bio Devices Engineering	1・2		2		
	Current Topics in Basic Sciences of Matter A	1・2		1		
	Current Topics in Basic Sciences of Matter B	1・2		1		
	Current Topics in Electronics A	1・2		1		
	Current Topics in Electronics B	1・2		1		
	Introduction to Physics and Material Science	1・2		2		
	Introduction of the Electronics	1・2		2		
	Special Lectures of Professional Education	1・2		2		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master’s thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subjects Specialized for the Quantum Matter Program: 18 or more credits
- Compulsory subject: 4 credits
- Compulsory elective subject - Materials Science Special Seminar A or Electronic Engineering Special Seminar A: 2 credits
- Compulsory elective subject - Materials Science Special Seminar B or Electronic Engineering Special Seminar B: 2 credits
- Compulsory elective subject - Materials Science Presentation Seminar or Electronic Engineering Presentation Seminar: 2 credits
- Compulsory elective subjects other than the above: 8 or more credits
- For Materials Science Seminars A/B and Electronic Engineering Seminars A/B, you can include up to four credits of these subjects in the number of credits necessary for completing your course.
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

Transdisciplinary Science and Engineering Program Master's Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	World Peace and HIROSHIMA	1・2		1	1 or more	2 or more
		Japanese Experience of Social Development- Economy, Infrastructure, and Peace	1・2		1		
		Japanese Experience of Human Development-Culture, Education, and Health	1・2		1		
		Academic approach to SDGs - A	1・2		1		
		Academic approach to SDGs - B	1・2		1		
		Practical Approach to SDGs	1・2		2		
		Understanding diversity and Inclusion	1・2		1		
	Career Development and Data Literacy Subjects	Data Literacy	1・2		1	1 or more	
		Data Literacy in Medicine	1・2		1		
		Career Management - Theory & Career Development	1・2		2		
		Career Management for Engineer	1・2		2		
		Stress Management	1・2		2		
		Information security	1・2		2		
		Introduction to MOT	1・2		1		
		Entrepreneurship	1・2		1		
Common Graduate School Subjects	Internatio -nalism	Academic Writing I	1		1	1 or more	3 or more
		Exercises in International Academic Studies A	1・2		1		
		Exercises in International Academic Studies B	1・2		2		
	Sociality	MOT and Venture Business	1・2		1	2 or more	
		Technology Strategy for Management	1・2		1		
		Intellectual Property, Finance and Accounting	1・2		1		
		Technology Transfer	1・2		1		
		PBL for Technology Transfer	1・2		1		
		Future Creation Thinking (Basic)	1・2		1		
		International Standardization for Rule Making	1・2		1		
		Management of Technology for Science and Engineering	2		1		
		Idea Mining Workshop	1・2		1		
		Business Creation Practicum	1・2		1		
		Introduction to Fieldwork Method and Practice	1・2		1		
		Internship	1・2		1		
		Data Visualization A	1・2		1		
		Data Visualization B	1・2		1		
		Principles of Environment A	1・2		1		
		Principles of Environment B	1・2		1		
Subjects Specialized for the Program		Special Exercises of Advanced Science and Engineering Transdisciplinary Science and Engineering A	1	2		8	25 or more
		Special Exercises of Advanced Science and Engineering Transdisciplinary Science and Engineering B	1	2			
		Special Study of Advanced Science and Engineering Transdisciplinary Science and Engineering	1～2	4			
		Earth Materials	1・2		2	8 or more	
		Dynamics of Earth Surface Material Cycle	1・2		2		
		Risks and Sciences in Natural Environment	1・2		2		
		Global Fluid Dynamics and Natural Disaster Prevention	1・2		2		
		Fundamentals of Complex Matter	1・2		2		
		Complex Materials Science	1・2		2		
		Structure of Complex Matter	1・2		2		
		Quantum Theory of Correlated Matter	1・2		2		
		Correlated Materials Science	1・2		2		
		Spectroscopies of Correlated Matter	1・2		2		
		Information Systems	1・2		2		
		Information Security	1・2		2		
		Computational Science	1・2		2		
		Computational Statistics	1・2		2		
		Media Communication	1・2		2		
		Sustainability Materials Science	1・2		2		
		Seminar in Integrated Arts and Sciences	1・2		2		
		Environmental Management	1・2		2		

Subject Type	Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
			Compulsory	Compulsory Elective		
	Developing Designing Ability	1・2		2		
	International Environmental Cooperation Studies	1・2		2		
	Practical Seminar on International Cooperation Project	1・2		2		
	Development Technology	1・2		4		
	Transportation Engineering	1・2		2		
	Transportation Planning	1・2		2		
	Regional and Urban Engineering	1・2		2		
	Tourism Policy	1・2		2		
	Fundamentals of Survey Methodology	1・2		2		
	Risk Management Technology	1・2		2		
	Sustainable Architecture A	1・2		2		
	Sustainable Architecture B	1・2		2		
	Energy Science and Technology	1・2		2		
	Numerical Environmental Impact Assessment Ⅰ	1・2		2		
	Numerical Environmental Impact Assessment Ⅱ	1・2		2		
	Geographic Information System Technology	1・2		2		
	Botany Resources for the Future	1・2		2		
	Environmental Monitoring	1・2		2		
	Biomass Energy Technology	1・2		2		
	Ecosystem Conservation and Management Science	1・2		2		
	Management and Conservation of Ecosystems	1・2		2		
	Environmental Health Science	1・2		2		
	Urban Environmental Science	1・2		2		
	Special Seminar for Linkage Program Ⅰ	1・2		2		
	Special Seminar for Linkage Program Ⅱ	1・2		2		
	Joint Exercises in Advanced Science and Engineering Transdisciplinary Science and Engineering	1～2		2		
	Subjects Specialized for Other Programs				2 or more	

【Registration Method and Completion Requirements】

To complete your master's course, you need to earn 30 or more credits based on the following requirements, receive necessary research guidance, and pass the master's thesis screening and the final examination or the qualifying examination for research in the doctoral course.

Necessary No. of Credits for Completing Your Course: 30 or more credits

(1) Common Graduate Subjects : 2 or more credits

- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Graduate School Subjects : 3 or more credits

- Internationalism: 1 or more credits
- Sociality: 2 or more credits

(3) Subject Specialized for the Program: 25 or more credits

- Subject Specialized for the Transdisciplinary Science and Engineering Program : 16 or more credits (8 credits of compulsory subjects and 8 or more credits of compulsory elective subjects)
- Subjects Specialized for Other Programs: 2 or more credits

If you have earned credits of subjects specialized for other divisions or graduate schools after obtaining approval from your supervisor/subadvisor, you can include them in the credits of Subjects Specialized for Other Programs.

(Note) Eligible Class Year

1: Register in the first year; 2: Register in the second year; 1～2: Register in the first and second years; and 1・2: Register regardless of your year

7. Common Graduate Subjects（Master's Course）

Graduate Schools of Hiroshima University offer the graduate students the Common Graduate Subjects which are designed to develop their broad perspective and interest in society and awareness of problems and deepen their consideration of how each specialized field can contribute as "sciences leading to sustainable development".

Additionally, the courses help them grasp the latest developments in the social system and acquire the basic knowledge to play an active part in modern society.

All graduate students are required to take at least one (1) credit from each of subject types, "Sustainable Development Subjects" and "Career Development and Data Literacy Subjects".

〈Subject Type and Educational Goals〉

◆Sustainable Development Subjects

To understand the Sustainable Development Goals (SDGs), which are agreed internationally and to acquire the ability to create sciences which lead to sustainable development and to solve various challenges in society.

◆Career Development and Data Literacy Subjects

To learn about the development of current social systems and to gain knowledge necessary for the future era and to specifically tackle the challenges of modern society and to acquire the ability to use the knowledge and skills necessary in the future era.

<Courses opened in FY2020>

Subject Type	Subjects	No. of Credits
Sustainable Development Subjects	World Peace and HIROSHIMA	1
	Japanese Experience of Social Development - Economy, Infrastructure, and Peace	1
	Japanese Experience of Human Development - Culture, Education, and Health	1
	Academic approach to SDGs - A	1
	Academic approach to SDGs - B	1
	Understanding diversity and Inclusion	1
	Practical Approach to SDGs	2
Career Development and Data Literacy Subjects	Data Literacy	1
	Data Literacy in Medicine	1
	Career Management - Theory & Career Development	2
	Career Management for Engineers	2
	Stress Management	2
	Introduction to MOT	1
	Information security	2
	Entrepreneurship	1

※Some of the Common Graduate Courses are offered on demand in order to provide opportunities for students who have difficulty attending school to take the courses. For the details, please contact the support office of your program.

8. Common Subjects for the Graduate School (Master's Courses)

At the Graduate School of Advanced Science and Engineering, we strive to foster human resources who are equipped with understanding of and advanced, high-level specialty in an extensive field, covering both the basics and application, in science, engineering and information science, as well as in their related research areas; and who can contribute to solving social problems by cooperating flexibly with those from other fields to achieve integration of understanding with their own specialized area. To this end, we systematically provide not only specialized subjects for each diploma program but also the Common Subjects for the Graduate School, listed below, in order to create "science for sustainable development," stimulate students' motivation for making social contribution through such creation, and develop their cross-disciplinary ability, communication skills necessary for cooperation, and ability to apply their expertise to society.

Please check the class contents, requirements, evaluation, registration, and credits, including how to earn three or more credits (one or more credits of a subject in the category "Internationalism" and two or more credits of subjects in the category "Sociality").

Subject List

Subject Type	Subjects [Credits]	Class Contents and Class Requirements, etc.
Internationalism	Academic Writing I [1 credit]	- Class Contents - In this class, you will strive to obtain the basic academic writing skills necessary to write a summary for a presentation that you will give at an international conference and an English thesis. For the summary of a presentation at an international conference, you will learn about what to do to ensure that readers can understand your summary easily, for example, clarifying the purposes and results of your research. In addition, you will also learn the essentials regarding how to prepare a poster used for a poster presentation and how to compose an oral presentation. You will also learn about the typical structure of an English thesis and how to compose an English thesis, with the focus on how to develop your discussion and how to write your introduction, conclusion and experiment section. - Class Requirements, etc. - ① For an academic thesis to be contributed or presented, prepare a plan together with your supervisor and receive guidance regarding how to write an English thesis. You do not need to register through My Momiji for taking this class. ② A credit will be granted based on the report from your supervisor regarding the implementation of the class.
	Exercises in International Academic Studies A [1 credit]	- Class Contents- In this seminar, you will prepare for giving a presentation in a foreign language at an international symposium or conference (for example, by obtaining the basic skills and practicing giving a presentation in English). In addition, you will report on the contents and results of the presentation that you made in a foreign language at an international symposium or conference. The report will be objectively assessed by the faculty member in charge of this seminar, your supervisor and subadvisors, etc. If you have accomplished the level of being able to contribute to the global society, your performance will be evaluated based on the accomplishment level. - Class Requirements, etc. - ①Give a presentation at an international conference or other event in consultation with your supervisor. You do not need to register through My Momiji for taking this class. The standard time of your work for this class is set as 15 or more hours, but please engage in the work without interrupting your regular classes. ② After completing your activity, submit an Application for Recognition of Credits, a report stating your conference schedule, the conference organizer, the event details and other necessary information, and reference materials, such as a conference summary, to your supervisor. ③ Your performance will be evaluated based on the level of your accomplishment in terms of the purposes of your academic activities and research and on the results that you have generated before a credit is granted.

	Exercises in International Academic Studies B [2 credits]	- Class Contents- In this seminar, to enhance your global perspective and global communication skills, you will engage in an academic activity abroad or conduct research jointly with foreign researchers. You will participate in a short-term academic training program organized by an overseas academic agency or private company or conduct joint research in a foreign language with researchers from abroad, and then you will report such activity's details and results. The report will be objectively assessed by the faculty member in charge of this seminar, your supervisor and subadvisors, etc. If you have accomplished the level of being able to contribute to the global society, your performance will be evaluated based on the accomplishment level. - Class Requirements, etc. - ① Conduct international joint research or other activity in consultation with your supervisor. You do not need to register through My Momiji for taking this class. The standard time of your work for this class is set as 30 or more hours, but please engage in the work without interrupting your regular classes. ② After completing your activity, submit an Application for Recognition of Credits and a report stating your academic activity/research schedule, the relevant organization, the details of your work and other necessary information to your supervisor. ③Your performance will be evaluated based on the level of your accomplishment in terms of the purposes of your academic activities and research and on the results that you have generated before a credit is granted.
Sociality	MOT and Venture Business [1 credit]	- Class Contents- The target of this class is to systematically learn about technology management, which constitutes the basics of MOT and venture business. To help you understand the essentials of technology management, the faculty member in charge of the class will show you many examples and provide systematic and easy-to-understand explanations of not only the efficiency and effectiveness of technology management but also of the history of technology management, corporate structures, BEP analysis, ethics for engineers, quality control, inventory management, organizational structures, technology strategies, motivation, leadership, business plans, venture businesses, and other various core issues. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Technology Strategy for Management [1 credit]	- Class Contents- Technology strategies are divided into two categories: strategies for technology and IT strategies for using information technology. In this lecture, you will purse the essentials of strategies with a focus on the relevance of strategies for technology, namely those for developing and using technology. At the same time, you will see many successful cases of technology strategies and learn about not only the differences between general management strategies and technology strategies but also the relationship between technology and management, technology and ethics, how to establish technology strategies, business environment analysis, tools for establishing strategies, and how to use technology for new business plans and corporate management. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Intellectual Property, Finance and Accounting [1 credit]	- Class Contents- The target of this class is to systematically obtain knowledge of intellectual property, finance and accounting, which constitute the basics of technology management. For intellectual property, you will listen to explanations on intellectual property, which is associated with both engineering and corporate management, the Patent Act, patent application specifications, the Design Act, the Trademarks Act, the Copyright Act, patent lawsuit cases, etc., while working on a practical exercise and presentation. For finance and accounting, you will strive to obtain not only the basic knowledge of corporate accounting but also the knowledge of B/S, P/L and cashflow required of corporate top and senior management when representing their corporate management results. You will also aim to familiarize yourself with the funding flow in financial economics and how to operate and raise funding.

		- Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Technology Transfer [1 credit]	- Class Contents- The target of this class is to systematically learn about the basics of technology transfer, which underpins technology management. By exploring the reality of technology transfer seen from the perspectives of both those who transfer their technology and those who receive it, you will learn about what is actually done for technology transfer. You will also deepen your knowledge through explanations of basic issues, such as the fundamental theory of overseas direct investment, management resources, patents, entrepreneurship, and strategies for localization. The class will include case studies of Japanese companies in the fields of shipbuilding and printing. You will learn about factors behind successful technology transfer by listening to detailed explanations of, for example, the use of patents as a management resource, influence of exchange rates, a training system, and influence of technology marketing and organization design. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	PBL for Technology Transfer [1 credit] *For "Global *JINZAI*" Students	- Class Contents- On top of the conventional form of technology transfer to foreign countries, namely training local engineers by sending engineers to their countries or inviting local engineers, technology transfer in respective phases of development, design, manufacture and sale plays an important part in the launch of an overseas operation. In this lecture, to deepen your understanding of technology transfer in such different phases, you will explore the ideal vision of technology transfer based on joint research separately conducted in foreign countries, mainly in Asia, and reports from those participating in corporate training programs. Moreover, you will share with international students studying engineering in Japan the experience of working at Japanese companies, thereby striving to develop the skills necessary for communicating smoothly with engineers with different cultural backgrounds and to obtain the knowledge required of engineers working in an international environment. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Future Creation Thinking (Basic) [1 credit]	- Class Contents- To develop and implement a new business, you need to be equipped with the knowledge of and method for planning and implementing business operations, marketing, fund raising, business management, etc. Accordingly, this class will help you learn about the basics necessary for "future creation thinking" to establish a new business. "Future creation thinking" is a framework for thinking to create your future and is a skill that definitely needs to be obtained by professionals who strive to solve real problems and achieve their desired future. The skill is necessary not only for developing and launching new businesses but also for solving social problems and changing organizations. Consisting of lectures and seminars on future creation thinking, including those for the concept of future creation thinking, the definition of problems, future ideas, team building and strategical implementation, this class will strive to nurture your basic knowledge and skills to demonstrate your leadership in creating your future. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	International Standardiza-tion for Rule Making [1 credit]	- Class Contents- The economic and social activities today are carried out in a set environment established in compliance with rules (i.e. "voluntary" rules, such as standards, and "compulsory" rules, such as regulations). However, almost anyone can stand in a leading position in terms of the establishment of voluntary rules, such as standards, and this means that no private companies can survive in the competition if they do not work actively on establishing rules. In this class, you will learn about international standardization issues based on case studies and about how to address them. - Class Requirements, etc. - You need to register through My Momiji for taking this class.

	Management of Technology for Science and Engineering [1 credit] *For second-year students of master's courses	- Class Contents- In this class, you will receive an overview of the history and concept of manufacturing through a summary of a countless number of observation results and testimony from the past, thereby deepening your understanding about competition strategies and corporate strategies to be taken by Japanese manufacturers in the future. Today, it has become important to enhance manufacturing skills and develop innovation architecture while overviewing the history of the rise and fall of the world's manufacturing industry. In the class, you will explore the direction to take by companies based on cooperation between their manufacturing sections and their headquarters. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Idea Mining Workshop [1 credit]	- Class Contents- In this class, an idea mining workshop will be held jointly with the University of Münster, Germany, to enhance participants' creativity through a wide variety of methods and enable them to prepare specific action plans. The idea mining method was developed originally by the University of Münster. Under the guidance of the faculty member serving as the workshop moderator, participants will discuss, for example, aspects of the U.N. Sustainable Development Goals while experiencing an idea mining activity designed to enhance their skills for stimulating their creativity and producing ideas. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Business Creation Practicum [1 credit]	- Class Contents- The progress in the development of information technology (IT) is entailed by intensified global competition. Now that a wide variety of barriers to entry into the market have been removed, it has become common for small venture businesses to quickly drive large companies out of the market. In this environment, Japanese companies, despite their high-level technology development capability, have difficulty in pacing their technology potentials in practical use for business purposes, and this is a great problem. In this seminar, students, divided into groups, will conceive business ideas from the perspective of technology, select promising research themes that they can find from around themselves, consider how to create new value, and conduct an inspection through interviews with customers. By doing so, the students will learn about the differences between product development and customer development and obtain the basics of the business creation process. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Introduction to Fieldwork Method and Practice [1 credit]	- Class Contents- Have you ever felt "it's somewhat vague" during your "journey" of working on a new problem or trying to find some solution? Have you ever experienced uncertainty about the future? In such a case, you are in the "silo" and thinking about this and that in a "room without any windows showing outside views." In this case, you might be able to obtain some hint by shaking your own fixed ideas, fully using your five senses, and actually "strolling, watching, and listening" in your "field." This approach, called "fieldwork," is renowned as an effective research method. In this class, you will learn about and try the method of fieldwork, developed in the area of cultural anthropology and used in many academic disciplines. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Internship [1 credit]	- Class Contents- Today, when the global competition is intensifying, it is necessary for human resources who underpin the future of business society not only to be able to engage in logical discussions, have a full proficiency in English, and boast specialized knowledge but also to be equipped with the design skills in the fields of manufacturing and service development and to have a full command of the skills. In this class, you will actually work at a private company, an official agency, etc. in Japan or abroad, thereby striving to obtain skills which you can use for practical purposes and enhance your communication skills. After your internship program,

		you will deliver a report on the results of your internship at a reporting session, which will be also attended by other students. Your performance in this class will be comprehensively evaluated based on an evaluation of your report and an evaluation from your internship organization. - Class Requirements, etc. - ① Conduct an internship in consultation with your supervisor. You do not need to register through My Momiji for taking this class. The standard time of your work for this class is set as two or more weeks, but please engage in the work without interrupting your regular classes. ② After completing your activity, submit the following documents to your supervisor: an Application for Recognition of Credits; a report stating your internship schedule, place, organization, details and other necessary information; and an Internship Receiving and Completion Certificate prepared by your internship organization. ③Deliver a report at the reporting session organized for your diploma program. ④ Your performance will be evaluated based on the details of your presentation at the reporting session, your discussion details, the level of your accomplishment in terms of the purposes of your academic activities and research, and on the results that you have generated before a credit is granted.
	Data Visualization A [1 credit]	- Class Contents- This class will handle how to visualize social data, from the concept to an implementation method using computers. The class will begin by providing you with a lecture on the concept and construction method for basic statistics so that you are able to understand the features of data intuitively. At the same time, you will learn about the implementation method by actually using the free statistic software product R. With the growth of the amount of data to be handled, this method is extensively recognized as a truly effective means for visualizing the features of data that cannot be fully measured with conventional statistics, such as average and dispersion. The accomplishment targets are (1) to understand the construction method for describing data, along with the basic concept of statistics; and (2) to become able to actually make a construction using R. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Data Visualization B [1 credit]	- Class Contents- This class will handle how to visualize social data, from the concept to an implementation method using computers. The class will begin by providing you with a lecture on a prediction method using data and a method of causal inference, and then it will explore how to visualize the data. In addition, you will also learn about how to handle not only numerical data but also text data. At the same time, you will learn about the implementation method by actually using the free statistic software product R. The accomplishment targets are (1) to understand the basic concepts of prediction and causal inference; (2) to understand the method of visualizing results using R; and (3) to understand the method of visualizing text data. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Principles of Environment A [1 credit]	- Class Contents- By understanding what underlies the present environmental problems, you will strive to identify factors behind the environmental problems and analyze the relationships between such factors. While doing so, you will also aim to consolidate your own intellectual structure and obtain the ability to act from a bird's-eye view so that you can handle the environmental problems today, ranging from those that are already explicit and serious to those that are tacit but might become serious in the future. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Principles of Environment B [1 credit]	- Class Contents- The major environmental problems which are occurring today and which will affect the future are about a sustainable society. These problems are tacit but might become serious in the future. In this class, you will focus on methods for setting and

		accomplishing the necessary targets in the fields of individuals, policies, economics, society and technology in order to solve the problems mentioned above, and you will learn about the basics regarding how to ensure that such methods are applicable to any fields. - Class Requirements, etc.- You need to register through My Momiji for taking this class.

単位認定申請書
Application for Recognition of Credits

年　　月　　日
Date: (Year)　(Month)　(Day)

先進理工系科学研究科長　　殿
To: The Dean of the Graduate School of Advanced Science and Engineering

プログラム
Program
学生番号
Student Number
氏　　名
Name

認定科目の単位等の認定を受けたいので，報告書等を添付の上，申請します。
I hereby apply for the recognition of the credits for designated courses, with reports or other required documents attached hereto.

該当科目に○ Put a circle in the appropriate box.	認定科目 Course	備　　考 Remarks
	海外学術活動演習 A Exercises in International Academic Studies A	博士課程前期 Master's Course
	海外学術活動演習 B Exercises in International Academic Studies B	博士課程前期 Master's Course
	インターンシップ Internship	博士課程前期 Master's Course
	海外学術研究 Academic research overseas	博士課程後期 Doctoral Course
	自然科学系長期インターンシップ Long-term internship	博士課程後期 Doctoral Course

主指導教員氏名 Name of Academic Supervisor			
主指導教員評価 Evaluation by Academic Supervisor	秀　優　良　可 Excellent, Very Good, Good, Fair	学務委員会認定 Certification of Academic Affairs Committee	

海外学術活動演習 A 報告書
Report of Exercises in International Academic Studies A

提出日　　年　　月　　日
Date: Year　　Month　　day

学生番号 Student ID		氏名 Name	
プログラム Program			
学会/ジャナーナル名 Name of Conference/ Journal			
発表形式 Presentation style	・Oral presentation　・Poster presentation　・Journal paper		
タイトル Theme			
共著者名 study co-author			
開催場所/掲載誌 Place/ Name of Publication		主催者/巻・号・頁 Organizer/ Volume・No.・pp	
開催期間/発行年月日 Period/Date of issue	From _____/____ / ____ (yyyy / mm / dd)　To _____/____ /____ (yyyy / mm / dd)		
発表の概要 Summary			
今後の研究課題Future study			
主指導教員所見Comments by Academic Supervisor 主指導教員　氏名			

海外学術活動演習 B 報告書
Report of Exercises in International Academic Studies B

提出日　　年　　月　　日
Date: Year　　Month　　day

学生番号 Student ID		氏名 Name	
プログラム Program			
共同研究機関 Collaborative investigation organization			
共同研究期間 Period	From _____/____ / ____ (yyyy / mm / dd)　To _____/____ /____ (yyyy / mm / dd)		
研究テーマ Theme			

共同研究内容の概要 Summary

今後の研究課題Future study

主指導教員所見Comments by Academic Supervisor

主指導教員　氏名

インターンシップ報告書
Report of Internship

提出日　　年　　月　　日
Date: Year　　Month　　day

学生番号 Student ID		氏名 Name	
プログラム Program			
実習先企業等 Institution			
実習期間 Period	From ____/____ / ____ (yyyy / mm / dd)　To ____/____ /____ (yyyy / mm / dd)		
実習テーマ Theme			

テーマの達成度，得られた成果等
Achievement level of theme, results obtained, etc

今後の課題Future study

主指導教員所見Comments by Academic Supervisor

主指導教員　氏名

Date＿＿＿＿年＿＿＿月＿＿＿日
yyyy mm dd

広島大学大学院先進理工系科学研究科長　宛
To Dean of Graduate School of Advanced Science and Engineering, Hiroshima University

インターンシップ　受入・修了証明書
Certificate of Acceptance and Completion of Intership

下記のとおり受け入れ，修了したことを証明します。
We certify that we accepted the following person and he/she completed our international cooperative research.

記

受入学生氏名　　：　＿＿＿＿＿＿＿＿＿＿＿＿　男 Male ・ 女 Female
Name of Student

生 年 月 日：＿＿＿＿年＿＿＿＿月＿＿＿＿日　生まれ
Date of Birth　yyyy　mm　dd

受入条件等 Acceptance Conditions	実習期間 Term	＿＿＿年＿＿月＿＿日 ～ ＿＿＿年＿＿月＿＿日 From: yyyy mm dd To: yyyy mm dd
	実習テーマ Research Theme	
	交通費等 Transportation Expenses	大学（または学生）の自己負担 Own Expense
	傷害・賠償責任保険等 Insurances	「学生教育研究災害傷害保険」および「学研災付帯賠償責任保険」に加入。（日本国外で実施する場合は，「海外旅行傷害保険」にも加入。） To buy Personal Accident Insurance (PAS) for Students Pursuing Education and Research and Liability insurance coupled with PAS. In case of conducting outside Japan, students must buy “University contracted Travel Insurance” additionally.

住　　所　Address ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

所属機関　Institution ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

所 属 長　Head of Institution ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿印

9. Joint Seminars (Joint Exercises in Advanced Science and Engineering Transdisciplinary Science and Engineering) (Master's Courses)

At the Graduate School of Advanced Science and Engineering, the Graduate School of Integrated Sciences for Life and other HU STEM graduate schools, we ensure that various events organized by each diploma program, such as academic lecture meetings, international symposiums and seminars, are available extensively for researchers, whether they are HU members or not. Generally called "joint seminars," they are also available as an opportunity for HU graduate school students to nurture an extensive range of knowledge, skills, etc.

At the Graduate School of Advanced Science and Engineering, we grant credits of Joint Exercises in Advanced Science and Engineering Transdisciplinary Science and Engineering (Subject Specialized for the Transdisciplinary Science and Engineering Program: two credits) to students who have participated in a total of 15 of the joint seminars mentioned above during the enrollment in their course and completed the procedure below.

① Check information on joint seminars on the website of the Graduate School of Advanced Science and Engineering, relevant posters, or through other means.
② Download Joint Seminar Participation Slips (for a total of 15 seminars) from the website of the Graduate School of Advanced Science and Engineering.
③ Take the slip described in ② to the venue of the seminar or other event of your choice and have the faculty member in charge of the event affix a confirmation seal on the slip. You do not need to register through My Momiji.
④ After participating in a total of 15 seminars, have your supervisor affix an approval seal on the slips described in ② and submit them to the support office in charge of your program. You can apply for participation in Joint Seminars during the period from your enrollment in your master's course to your completion of the course.
⑤ You will earn the credits of Joint Exercises in Advanced Science and Engineering Transdisciplinary Science and Engineering at the end of the semester when you submit your slips. In the case of students of the Transdisciplinary Science and Engineering Program, the earned credits will be recognized as credits of a Subject Specialized for the Program. In the case of students of other programs, the credits will be treated as credits of a Specialized Subject for Other Programs.

10. Completion Schedule (Master's Courses)

Year	Enrollment in Apr.	Enrollment in Oct.	Student	Supervisor/ Subadvisor Group	Program Faculty Committee/ Faculty Council, etc.
First Year	Apr.	Oct.	Orientation guidance	Give advice for class registration planning	Inform students of education and research targets
			Receive Research Ethics Education (Graduate School Students - Basic)		
			Submit a Notification of the Research Title	Approve the notification	Approve the Notification of the Research Title
			Consider a class registration plan	Supervise class registration planning	
			Establish a research plan	Supervise research planning	
	Oct.	Apr.	Consider a class registration plan	Supervise class registration planning	
			Submit an Overview of Research Plan		Accept the Overview of Research Plan
	Nov. - Dec.	May to Jun.	Interim presentation	Supervise interim presentation	
			Review the research plan	Supervise research planning	
	Feb.	Jul.	Resubmit the Overview of Research Plan		Accept the Overview of Research Plan
Second Year	Apr.	Oct.	Consider a class registration plan	Supervise class registration planning	
			Establish a master's thesis writing plan	Give supervision & advice for the master's thesis writing plan	
	Sep.	Mar.	Receive Research Ethics Education (Graduate School Students – Advanced)	Issue a Research Ethics Education Completion Certificate	
			Submit an Overview of Master's Thesis		Approve the Overview of Master's Thesis
	Oct.	Apr.	Consider a class registration plan	Supervise class registration planning	
			Write the master's thesis	Supervise thesis writing	Organize the Screening Committee
	Jan.	Jul.	Submit the master's thesis	Screen the thesis	
			Submit a Summary of Master's Thesis		
	Feb.	Aug.	Given an oral presentation for the master's thesis (public screening)		
			Final examination		Screen by the Screening Committee
			Earn the required credits		Final screening
	Mar.	Sep.	Complete the master's course and earn the degree		

In case of completing a master's course by passing the qualifying examination for research in the doctoral course

Year	Enrollment in Apr.	Enrollment in Oct.	Student	Administration Meeting of the Organization of the Leading Graduate Education Program	Program Faculty Committee/ Faculty Council, etc.
Second Year	Oct.	Apr.	Submit an Application for the Qualifying Examination for Research in the Doctoral Course		
	Dec. - Feb.	Jun. - Aug.		Qualifying examination for research in the doctoral course	
	Feb.	Aug.		Screening	Final screening
	Mar.	Sep.	Complete the master's course and earn the degree		

11. Master's Thesis Screening and Final Examination

Implementation Guidelines of the Master's Thesis Screening and Final Examination of the Graduate School of Advanced Science and Engineering, Hiroshima University

(Established on April 1, 2020)

(Overview of Master's Thesis)

Article 1: Students who plan to submit a master's thesis shall submit an Overview of Master's Thesis to the Dean of the Graduate School (Dean of the Program) by the due date designated by their diploma program after obtaining approval from their supervisor. In principle, the due date for students who are expected to complete their course in March is set for September, while that for students who are expected to complete their course in September is set for March.

(Submission of Master's Thesis)

Article 2: In principle, the thesis submission due date designated by the relevant diploma program is set for January in the case of students who are expected to complete their course in March and for July in the case of students who are expected to complete their course in September.

2 Students shall submit one (1) copy of their thesis.

3 Students shall submit their thesis to the Dean of the Graduate School (Dean of the Program) after obtaining approval from their supervisor.

4 The Dean of the Graduate School shall refer the received thesis to the Thesis Screening Committee.

(Submission of Summary of Master's Thesis)

Article 3: In principle, the Summary of Master's Thesis submission due date designated by the relevant diploma program is set for January in the case of students who are expected to complete their course in March and for July in the case of students who are expected to complete their course in September.

2 Students shall submit one (1) copy of their Summary of Master's Thesis.

(Thesis Screening)

Article 4: Each Dean of the Program shall inform the Dean of the Graduate School of the names of the supervisors/subadvisors and other thesis-related faculty members as the members expected to constitute the Thesis Screening Committee. The Deans must do so by February 1 for students who are expected to complete their course in March and by July 1 for students who are expected to complete their course in September.

2 The Thesis Screening Committee shall consist of a chief referee and two (2) or more sub-referees under approval from the Faculty Council. At least one (1) of the sub-referees shall be selected from among the faculty members of other programs or other graduate schools of Hiroshima University. It is allowed to select a sub-referee(s) from among researchers of other universities, research institutes, companies, etc.

3 The Thesis Screening Committee shall decide whether to pass or fail the theses that they have screened.

(Master's Thesis Oral Presentation)

Article 5: A master's thesis oral presentation shall be given openly to faculty members and students of the Graduate School. If the presentation concerns intellectual property, however, the presentation can be given behind closed doors based on a request from the relevant supervisor/subadvisors.

(Final Examination)

Article 6: Each diploma program shall administer a final examination for students who have passed the thesis screening and decide whether to pass or fail them.

2 The final examination shall be completed by the end of February for students who are expected to complete their course in March and by the end of August for students who are expected to complete their course in September.

(Completion Decision)

Article 7: Each Dean of the Program shall submit a screening report, stating the results of the thesis screening and final examination, to the Dean of the Graduate School (support office in charge of each diploma program [support office in charge of the master's course]) by the end of February for students who are expected to complete their course in March and by the end of August for students who are expected to complete their course in September.

2 The Dean of the Graduate School shall bring the completion decision for discussion at the Faculty Council based on the screening report, and the Faculty Council shall engage in the discussion.

(Registration of Master's Theses in the Institutional Repository)

Article 8: Students can register their master's thesis in the Hiroshima University Institutional Repository (open to the public online free of charge) as long as they wish to do so and have approval from their supervisor.

2 To complete the registration procedure, students must submit their Summary of Master's Thesis, electronic files of their master's thesis and Summary of Master's Thesis, and one (1) copy of a Consent of Registration in the Institutional Repository.

(Other)

Article 9: If any matter occurs that cannot be handled based on the guidelines, the Faculty Council shall engage in a discussion and make the necessary decision each time.

12. Decision Criteria for Awarding Degrees and Evaluation Standards for Degree Theses (Master's Courses)

At the Graduate School of Advanced Science and Engineering of Hiroshima University, we shall award a master's degree to those who are deemed appropriate after the screening process for the master's degree based on the decision criteria below:

1. Those who will earn a master's degree shall be equipped with sufficient study skills and high-level, specialized capabilities in their specialized area based on the Diploma Policy and also boast wide intelligence and an ability to judge comprehensively.
2. Those who will earn a master's degree shall have their master's thesis evaluated based on the Evaluation Standards for Degree Theses below. In addition, they shall give a research presentation appropriate as academic research results at a presentation session or screening session in their specialized field and respond to inquiries logically and clearly.
3. The procedure for submitting a master's thesis shall be indicated separately.

(Evaluation Standards for Degree Theses)

I. Thesis Evaluation Points

(1) Whether or not the student has acquired sufficient knowledge as a master's degree holder in the relevant research field and has obtained the ability to identify problems clearly and solve them

(2) Whether or not the student's research theme is appropriate for the degree for which he/she has applied, and whether or not he/she was clearly aware of relevant problems when writing the thesis

(3) Whether or not the thesis descriptions (e.g. main text, charts, tables, quotations, etc.) are sufficient and appropriate, and whether or not the thesis has consistency in terms of logical composition from the beginning to the end

(4) Whether or not the student adopted an appropriate research method, survey/experimentation method, and demonstration method when researching his/her theme and included specific analysis/discussion based on them

(5) Whether or not the thesis has its own value from a logical or demonstrative perspective in the relevant research field

Specified Forms for Master's Course

研　究　題　目　届（M）

Notification of the Research Title

Year　Month　Date
年　月　日　提出

学生番号 Student ID Number	M	プログラム名 Program	
ふりがな 氏　　名 Katakana Name			
研究題目 （英語の場合は，和訳を付すこと。） Research Title (Japanese Title)			
取得済み教員免許状			
取得予定の教員免許状			

＜以下は主指導教員が記入＞ The followings are written by supervisor.

指　導　教　員　氏　名 主指導教員 氏　　名　　確認印又はサイン	
副指導教員氏名 プログラム（専門分野）	プログラム（　　）
副指導教員氏名 プログラム（専門分野）	プログラム（　　）
副指導教員氏名 プログラム（専門分野）	プログラム（　　）
副指導教員氏名 プログラム（専門分野）	プログラム（　　）

※副指導教員は 2 人以上とし，うち 1 人は主指導教員と異なる専門分野の教員とする。（他研究科又は他大学の教員も可能とする。）

研 究 計 画 概 要

Outline of Research Plan

学 生 番 号 Student ID Number	M	プログラム Program	
氏 名 Name			
研 究 題 目 Research Title			
研 究 計 画 概 要 Outline of Research Plan			

上記のとおり提出します。

I hereby submit as above.

広島大学大学院先進理工系科学研究科長 殿

To: The Dean of the Graduate School of Advanced Science and Engineering

年 / 月 / 日

Year / Month / Day

学生番号:M
Student ID Number

学生氏名:
Name

主指導教員氏名:

副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:
副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:

※学生氏名，主指導教員氏名，副指導教員氏名は，自署又は押印とする。なお，副指導教員が他キャンパス又は他大学の場合には，指導内容を記したメールを添付することで，自署又は押印を省略することができる。

修 士 論 文 概 要

Outline of the Master's Thesis

学 生 番 号 Student ID Number	M	プログラム Program	
氏 名 Name			
論 文 題 目 Thesis Title			
論 文 概 要 Thesis Outline	**＊字数は 800 字程度（日本語），300 語程度（英語）とし，研究目的・方法・結果・考察（結論）を記載してください。** Please describe your research purpose, method, results, and discussion (conclusion) in about 800 characters (Japanese) and about 300 words (English).		

上記のとおり提出します。

I hereby submit as above.

広島大学大学院先進理工系科学研究科長 殿

To: The Dean of the Graduate School of Advanced Science and Engineering

年 月 日

Year / Month / Day

学生番号：M　　学生氏名：

Student ID Number　　Name

主指導教員氏名：

副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：
副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：

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修 士 論 文 要 旨

Summary of the Master's Thesis

学 生 番 号 Student ID Number	M	プログラム Program	
氏 名 Name		主指導教員 Supervisor	
論 文 題 目 Thesis Title			

修士論文・卒業論文の学術情報リポジトリ登録許諾書

年　月　日

広島大学図書館長　殿

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年　月　日

修士の学位論文の提出に係る確認書

広島大学長　殿

研究科：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

専攻等：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

学年：＿＿＿＿　学生番号：＿＿＿＿＿＿＿＿

氏名（自署）：＿＿＿＿＿＿＿＿＿＿＿＿＿＿

修士の学位論文の提出に当たり，以下の全ての事項を確認しました。

論文題目：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

確認事項（チェックを入れる。）

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・引用を行う「必然性」があること

・カギ括弧などにより「引用部分」が明確になっていること

ウ　研究の引用の目的上「正当な範囲内」であること

・引用部分とそれ以外の部分の「主従関係」が明確であること

・引用される分量が必要最小限の範囲内であること

エ　「出所の明示」をすること

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上記記載事項を確認しました。

指導教員

職名：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

氏名（自署）：＿＿＿＿＿＿＿＿＿＿＿＿＿＿

確認年月日：＿＿＿＿　年　月　日

Doctoral Course

13. Class Subjects and Registration (Doctoral Courses)

Appended Table 2 (Article 4 and Article 5, 1)
Mathematics Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio -nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Seminar in Mathematics	1～3	12		12 or more	

【Registration Method and Completion Requirements】
To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Physics Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Research in Physics	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Earth and Planetary Systems Science Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study for Earth and Planetary Systems Science	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Basic Chemistry Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Doctoral Thesis in Chemistry	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Applied Chemistry Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio -nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Applied Chemistry	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Chemical Engineering Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio -nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Chemical Engineering	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Electrical, Systems, and Control Engineering Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Electorical, Systems, and Control Engineering	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Mechanical Engineering Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Mechanical Engineering	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Transportation and Environmental Systems Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Transportation and Environmental Systems	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Architecture Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Architecture	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Civil and Environmental Engineering Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Civil and Environmental Engineering	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Informatics and Data Science Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study on Informatics and Data Science	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Quantum Matter Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio-nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Advanced Study in Quantum Matter	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

Transdisciplinary Science and Engineering Program Doctoral Course

Subject Type		Subjects	Eligible Class Year	No. of Credits		No. of Required Credits	
				Compulsory	Compulsory Elective		
Common Graduate Subjects	Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1・2・3		1	1 or more	2 or more
		Regional development seminar from the viewpoint of the SDGs	1・2・3		1		
		Seeking Universal Peace	1・2・3		1		
	Career Development and Data Literacy Subjects	Data Science	1・2・3		2	1 or more	
		Pattern Recognition and Machine Learning	1・2・3		2		
		Pathway to becoming a Data Scientist	1・2・3		1		
		Utilization of data Literacy in Medicine	1・2・3		1		
		Skills and Arts of Leadership	1・2・3		1		
		Career Management for Highly Skilled Innovators	1・2・3		1		
		Introduction to business creation	1・2・3		1		
		Innovation Practice	1・2・3		2		
		Long-term internship	1・2・3		2		
Common Graduate School Subjects	Internatio -nalism	Academic Writing II	1・2・3		1	1 or more	2 or more
		Academic Research Overseas	1・2・3		2		
	Sociality	Management and Entrepreneurship	1・2・3		1	1 or more	
		Technology Strategy and R&D Management	1・2・3		1		
		Introduction to Advanced Technology Management	1・2・3		1		
		Future Creation Thinking (Advanced)	1・2・3		1		
		Long-term Internship	1・2・3		2		
Subjects Specialized for the		Special Study of Advanced Science and Engineering Transdisciplinary Science and Engineering	1～3	12		12 or more	

【Registration Method and Completion Requirements】

To complete your doctoral course, you need to earn 16 or more credits based on the following requirements, receive necessary research guidance, and pass the doctoral thesis screening and the final examination.

Necessary No. of Credits for Completing Your Course: 16 or more credits
(1) Common Subject for the HU Graduate Schools: 2 or more credits
- Sustainable Development Subject: 1 or more credits
- Career Development and Data Literacy Subject: 1 or more credits

(2) Common Subject for the Graduate School: 2 or more credits
- Internationalism: 1 or more credits
- Sociality: 1 or more credits

(3) Subject Specialized for the Program: 12 or more credits

(Note) Eligible Class Year
1～3: Register in the first, second, and third years; 1・2・3: Register regardless of your year

14. Common Graduate Subjects（Doctoral Course）

Graduate Schools of Hiroshima University offer the graduate students the Common Graduate Subjects which are designed to develop their broad perspective and interest in society and awareness of problems and deepen their consideration of how each specialized field can contribute as "sciences leading to sustainable development".

Additionally, the courses help them grasp the latest developments in the social system and acquire the basic knowledge to play an active part in modern society.

All graduate students are required to take at least one (1) credit from each of subject types, “Sustainable Development Subjects” and “Career Development and Data Literacy Subjects”.

〈Subject Type and Educational Goals〉

◆Sustainable Development Subjects

To understand the Sustainable Development Goals (SDGs), which are agreed internationally and to acquire the ability to create sciences which lead to sustainable development and to solve various challenges in society.

◆Career Development and Data Literacy Subjects

To learn about the development of current social systems and to gain knowledge necessary for the future era and to specifically tackle the challenges of modern society and to acquire the ability to use the knowledge and skills necessary in the future era.

<Courses opened in FY2020>

Subject Type	Subjects	Credits
Sustainable Development Subjects	SDGs Ideas Mining Seminar for Specialists	1
	Regional development seminar from the viewpoint of the SDGs	1
	Seeking Universal Peace	1
Career Development and Data Literacy Subjects	Data Science	2
	Pattern Recognition and Machine Learning	2
	Pathway to becoming a Data Scientist	1
	Utilization of Data Literacy in Medicine	1
	Skills and Arts of Leadership	1
	Career Management for Highly Skilled Innovators	1
	Innovation Practice	2
	Long-term internship	2
	Introduction to business creation	1

※Some of the Common Graduate Courses are offered on demand in order to provide opportunities for students who have difficulty attending school to take the courses. For the details, please contact the support office of your program.

15. Common Subjects for the Graduate School (Doctoral Courses)

At the Graduate School of Advanced Science and Engineering, we strive to foster human resources who are equipped with understanding of and advanced, high-level specialty in an extensive field, covering both the basics and application, in science, engineering and information science, as well as in their related research areas; and who can contribute to solving social problems by cooperating flexibly with those from other fields to achieve integration of understanding with their own specialized area. To this end, we systematically provide not only specialized subjects for each diploma program but also the Common Subjects for the Graduate School, listed below, in order to create "science for sustainable development," stimulate students' motivation for making social contribution through such creation, and develop their cross-disciplinary ability, communication skills necessary for cooperation, and ability to apply their expertise to society.

Please check the class contents, requirements, evaluation, registration, and credits, including how to earn two or more credits (one or more credits of a subject in the category "Internationalism" and one or more credits of subjects in the category "Sociality").

Subject List

Subject Type	Subjects [Credits]	Class Contents and Class Requirements, etc.
Internationalism	Academic Writing II [1 credit]	- Class Contents - In this class, you will actually write a thesis in English and contribute it to a journal, thereby striving to obtain practical and specific writing skills, including how to evaluate your research, how to select a journal to which you will contribute your thesis, and how to collect research data. While learning about an easy-to-understand, logical thesis composition by looking at specific examples, you will strive to obtain English writing techniques. - Class Requirements, etc. - ① For an academic English thesis which you will contribute to a journal or release to the public, prepare a plan together with your supervisor and receive guidance regarding how to write an English thesis. You do not need to register through My Momiji for taking this class. ② A credit will be granted based on the report from your supervisor regarding the implementation of the class.
	Academic Research Overseas [2 credits]	- Class Contents - At the graduate school, we send students to overseas laboratories with a view to fostering human resources who can serve as international leaders and perform advanced, integrated research in the field of natural science. While actually engaging in research in cooperation, you will also experience discussions with overseas faculty members and students and oral presentations in seminars, thereby striving to enhance the English communication skills necessary for research activities in the specialized field of natural science and deepen your understanding of the importance of an international network for promoting your research from a broad perspective. After returning to Japan, you will give a presentation in English regarding your overseas education and research activities at a reporting session attended by evaluation members (optional request) and other students. Your performance will be evaluated based on the presentation. - Class Requirements, etc. - ① Give a presentation at an international conference or engage in international joint research in consultation with your supervisor. You do not need to register through My Momiji for taking this class. The standard time of your work for this class is set as 30 or more hours, but please engage in the work without interrupting your regular classes. ②After completing your activity, submit an Application for Recognition of Credits, a report stating your conference or other activity schedule, the relevant organization, the activity details and other necessary information, and reference materials, such as a conference summary, to your supervisor. ③Deliver a report in English at the reporting session organized for your diploma program.

		④Your performance will be evaluated based on the details of your presentation at the reporting session, your discussion details, the level of your accomplishment in terms of the purposes of your academic activities and research, and the results that you have generated before credits are granted.
Sociality	Management and Entrepreneurship [1 credit]	- Class Contents - If traditional management is described as a style for "right-handers," entrepreneurship is a management style for "left-handers." While the focus of the former is on "exploitation" of value from the existing businesses, the purpose of the latter lies in "exploration" to create new value. If a company or organization wishes to thrive forever, it needs to be "both-handed." In this class, you will learn about the differences between management and entrepreneurship, using English videos and other materials. The basic elements for the "both-handed" style of management can be applied to research activities. The accomplishment target is to build up specific images of management and entrepreneurship by reviewing your own research activities through insights from the perspective of economics. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Technology Strategy and R&D Management [1 credit]	- Class Contents - The target of this class is to systematically learn about technology strategies and research development management, which constitute the main issues of technology management. If a company or organization strives to achieve its business purpose by using its technology resources, it needs to understand multiple aspects of its technologies and the features of its technology strategies. It also needs to establish a policy for reinforcing its technologies, set and implement research and development (R&D) themes, evaluate the results, and reflect the results in the next strategies. In this class, you will learn about how to do these things. In addition, you will also deepen your knowledge about intellectual property strategies and possible future developments. Moreover, you will also familiarize yourself with the methods for process management and resource management, which are needed for R&D management, the stimulation of human resources' creativity and imagination and other ways to develop human resources, career path support and other ways to manage human resources, and organization design and operations. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Introduction to Advanced Technology Management [1 credit]	- Class Contents - The target of this class is to systematically learn about technology application management. In the class, working professional students will strive to be equipped with the basic functions of technology strategies and technology application through case studies. They will select cases on which they can report, analyze such themes as research development, productization (service creation), manufacture/production, sales/marketing, and intellectual property/patent strategies, and then identify problems which they can work on. Such problems will be discussed by the students, their supervisors, and the faculty member in charge of MOT. In line with such discussions, the students will write a report on the results each time, and they will establish a business launch plan for a training purpose, thereby learning about how to apply technologies. - Class Requirements, etc. - You need to register through My Momiji for taking this class.
	Future Creation Thinking (Advanced) [1 credit]	- Class Contents - This class will be provided in the project- based-learning (PBL) style. Striving to foster human resources who can demonstrate their ability in society, the class will provide an opportunity for students, divided into teams consisting of a few members, to complete a project similar to a real one. This process will enable the students to obtain know-how that they can use in society. Since it requires teamwork to complete such a project, students will be evaluated not only in terms of their results but also in their activities carried out during the process. - Class Requirements, etc. - You need to register through My Momiji for taking this class.

	Long-term Internship [2 credit]	- Class Contents - To be aware of the relationships between your specialized research and society and to develop into a researcher or high-level professional who can establish a sustainable society, you need to understand how specialized research is conducted in society and how development is conducted toward social implementation. Accordingly, the graduate school provides an opportunity to engage in a long-term internship at an academic agency or company in Japan or abroad so that you can learn about how to conduct research as a job, enhance your communication skills through discussion with working professionals and corporate employees, and increase your sociality as a working professional. After completing your internship, you will deliver a report regarding your activities at an internship reporting session attended by evaluation members (optional request) and other students. Your performance will be evaluated based on the report. - Class Requirements, etc. - ①Engage in an internship in consultation with your supervisor. You do not need to register through My Momiji for taking this class. The standard time of your work for this class is set as two or more weeks, but please engage in the work without interrupting your regular classes. ② After completing your activity, submit the following documents to your supervisor: an Application for Recognition of Credits; a report stating your internship schedule, place, organization, details and other necessary information; and an Internship Receiving and Completion Certificate prepared by your internship organization. ③Deliver a report at the reporting session organized for your diploma program. ④Your performance will be evaluated based on the details of your presentation at the reporting session, your discussion details, the level of your accomplishment in terms of the purposes of your academic activities and research, and the results that you have generated before credits are granted.

単位認定申請書
Application for Recognition of Credits

年　　月　　日
Date: (Year)　(Month)　(Day)

先進理工系科学研究科長　　殿
To: The Dean of the Graduate School of Advanced Science and Engineering

プログラム
Program
学生番号
Student Number
氏　　名
Name

認定科目の単位等の認定を受けたいので，報告書等を添付の上，申請します。
I hereby apply for the recognition of the credits for designated courses, with reports or other required documents attached hereto.

該当科目に○ Put a circle in the appropriate box.	認定科目 Course	備　　考 Remarks
	海外学術活動演習 A Exercises in International Academic Studies A	博士課程前期 Master's Course
	海外学術活動演習 B Exercises in International Academic Studies B	博士課程前期 Master's Course
	インターンシップ Internship	博士課程前期 Master's Course
	海外学術研究 Academic research overseas	博士課程後期 Doctoral Course
	自然科学系長期インターンシップ Long-term internship	博士課程後期 Doctoral Course

主指導教員氏名 Name of Academic Supervisor			
主指導教員評価 Evaluation by Academic Supervisor	秀　優　良　可 Excellent, Very Good, Good, Fair	学務委員会認定 Certification of Academic Affairs Committee	

海外学術活動研究報告書
Report of Academic research overseas

提出日　　年　　月　　日
Date: Year　　Month　　day

学生番号 Student ID		氏名 Name	
プログラム Program			
共同研究機関 Collaborative investigation organization			
共同研究期間 Period	From ____/____/____ To ____/____/____ yyyy/mm/dd　　yyyy/mm/dd		
研究テーマ Theme			

共同研究内容の概要 Summary

今後の研究課題Future study

主指導教員所見Comments by Academic Supervisor

主指導教員　氏名

自然科学系長期インターンシップ報告書
Report of Long-term internship

提出日　　年　　月　　日
Date: Year　　Month　　day

学生番号 Student ID		氏名 Name	
プログラム Program			
実習先企業等 Institution			
実習期間 Period	From ____/____ / ____ (yyyy / mm / dd)　To ____/____ /____ (yyyy / mm / dd)		
実習テーマ Theme			

テーマの達成度，得られた成果等
Achievement level of theme, results obtained, etc

今後の課題Future study

主指導教員所見Comments by Academic Supervisor

主指導教員　氏名

Date＿＿＿＿年＿＿＿月＿＿＿日
yyyy mm dd

広島大学大学院先進理工系科学研究科長　宛
To Dean of Graduate School of Advanced Science and Engineering, Hiroshima University

インターンシップ　受入・修了証明書
Certificate of Acceptance and Completion of Intership

下記のとおり受け入れ，修了したことを証明します。
We certify that we accepted the following person and he/she completed our international cooperative research.

記

受入学生氏名　　：＿＿＿＿＿＿＿＿＿＿　男 Male ・ 女 Female
Name of Student

生 年 月 日：＿＿＿＿年＿＿＿＿月＿＿＿＿日　生まれ
Date of Birth　yyyy　mm　dd

受入条件等 Acceptance Conditions	実習期間 Term	＿＿＿年＿＿月＿＿日 ～ ＿＿＿年＿＿月＿＿日 From: yyyy mm dd To: yyyy mm dd
	実習テーマ Research Theme	
	交通費等 Transportation Expenses	大学（または学生）の自己負担 Own Expense
	傷害・賠償責任保険等 Insurances	「学生教育研究災害傷害保険」および「学研災付帯賠償責任保険」に加入。（日本国外で実施する場合は，「海外旅行傷害保険」にも加入。） To buy Personal Accident Insurance (PAS) for Students Pursuing Education and Research and Liability insurance coupled with PAS. In case of conducting outside Japan, students must buy “University contracted Travel Insurance” additionally.

住　　所　Address ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

所属機関　Institution ＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

所 属 長　Head of Institution ＿＿＿＿＿＿＿＿＿＿＿＿＿＿印

16. Completion Schedule (Doctoral Courses)

Year	Enrollment in Apr.	Enrollment in Oct.	Student	Supervisor/Subadvisor Group	Program Faculty Committee/ Faculty Council, etc.
First Year	Apr.	Oct.	Orientation guidance	Give advice for class registration planning	Inform students of education and research targets
			Receive Research Ethics Education (Graduate School Students - Basic)		
			Submit a Notification of the Research Title	Approve the notification	Approve the Notification of the Research Title
			Consider a class registration plan	Supervise class registration planning	
			Establish a research plan	Supervise research planning	
	Oct.	Apr.	Consider a class registration plan	Supervise class registration planning	
	Nov. - Dec.	May - Jun.	Interim presentation	Supervise interim presentation	
	Mar.	Aug.	Submit an Overview of Research Plan	Supervise research planning	Accept the Overview of Research Plan
Second Year	Apr.	Oct.	Consider a class registration plan	Supervise class registration planning	
			Establish a research plan	Supervise research planning	
	Oct.	Apr.	Consider a class registration plan	Supervise class registration planning	
	Nov. - Dec.	May - Jun.	Interim presentation	Supervise interim presentation	
	Mar.	Aug.	Receive Research Ethics Education (Graduate School Students – Advanced) (until around half a year before submitting a doctoral thesis)	Issue a Research Ethics Education Completion Certificate	
			Submit an Overview of Doctoral Thesis	Supervise research planning	Accept the Overview of Doctoral Thesis
Third Year	Oct.	Apr.	Submit an Application for Preliminary Screening of Doctoral Thesis		Accept the Application for Preliminary Screening of Doctoral Thesis Organize the Preliminary Screening Committee
	Nov.	May	Submit an Overview of Doctoral Thesis and a draft		
	Dec.	Jun.	Preliminary screening	Preliminary screening Announce the screening results	Screen by the Preliminary Screening Committee
	Jan.	Jul.	Submit the doctoral thesis and other necessary documents		Accept the doctoral thesis Organize the Screening Committee
	Jan. - Feb.	Jul. - Aug.	Thesis screening (Open screening) (Submit the bound version of the doctoral thesis)	Screen the thesis Announce the screening results	Screen by the Screening Committee Final screening
	Mar.	Sep.	Complete the doctoral course and earn the degree		

17. Internal Regulations of the Graduate School of Advanced Science and Engineering Based on the Hiroshima University Degree Regulations

(Approved by the Dean of the Graduate School on April 1, 2020)

Internal Regulations of the Graduate School of Advanced Science and Engineering Based on the Hiroshima University Degree Regulations

Table of Contents

Chapter 1: General Provisions

(Purpose)

Article 1: The Internal Regulations prescribe the necessary articles regarding the conferment of academic degrees at the Graduate School of Advanced Science and Engineering of Hiroshima University (the "Graduate School") based on Article 17 of the Hiroshima University Degree Regulations (the "Regulations") (Regulations No. 8 of April 1, 2004.).

(Names of the Majors Affixed when Conferring Degrees)

Article 2: The names of the majors affixed when the Graduate School confers degrees based on Article 3 (2) of the Regulations shall be as provided in the list below.

Diploma Program	Major	
	Master's	Doctoral
Mathematics Program	Science	Science
Physics Program	Science	Science
Earth and Planetary Systems Science Program	Science	Science
Basic Chemistry Program	Science	Science
Applied Chemistry Program	Engineering	Engineering
Chemical Engineering Program	Engineering	Engineering
Electrical, Systems, and Control Engineering Program	Engineering	Engineering
Mechanical Engineering Program	Engineering	Engineering
Transportation and Environmental Systems Program	Engineering	Engineering
Architecture Program	Engineering	Engineering
Civil and Environmental Engineering Program	Engineering	Engineering
Informatics and Data Science Program	Informatics and Data Science	Informatics and Data Science
Quantum Matter Program	Science Engineering Philosophy	Science Engineering Philosophy
Transdisciplinary Science and Engineering Program	Engineering Philosophy International Cooperation Studies	Engineering Philosophy International Cooperation Studies

Chapter 2: Degree Screening to Recognize the Completion of the Doctoral Courses of the Graduate School of Advanced Science and Engineering

(Qualification for Submitting Theses and Timing)

Article 3: Those who can submit a degree dissertation (the "Dissertation") based on Article 2 (2) of the Regulations are those who have earned the credits prescribed in Article 15 of the By-laws of the Graduate

School of Advanced Science and Engineering, Hiroshima University (approved by the Dean of the Graduate School on April 1, 2020) (the "designated Credits"), or those who will surely have earned the designated Credits by the end of the term when they submit the Dissertation and who have received guidance for the Dissertation preparation and others (the "Research Guidance").

2 Students shall submit the Dissertation by the due date designated by their diploma program. In principle, the due date for students who are expected to complete their course at the end of March is set for January of the academic year when they are expected to complete their course, while the due date for students who are expected to complete their course at the end of September is set for July of the academic year when they are expected to complete their course. However, those who have been enrolled in their course for three years or longer can carry out the degree application procedure as needed.

3 Notwithstanding the prescriptions of the preceding paragraph, if the Dissertation due date falls on either of the following items, the due date shall be replaced with the weekday immediately before that date.

(1) Sunday or Saturday

(2) National holiday prescribed by the Act on National Holidays (Act No. 178, 1948)

(Procedure for Submitting Degree Dissertation)

Article 4: If those applicable to Article 3-1 submit their Dissertation, they shall submit the following documents to the Dean of the Graduate School under approval from their supervisor.

(1) Application for Review of Dissertation – one (1) copy
(2) Dissertation (bound in a file) - one (1) copy
(3) List of Publications - one (1) copy
(4) Summary of Dissertation - one (1) copy
(5) Resume - one (1) copy
(6) Reference Papers, if any - two (2) copies
(7) Dissertation Submission and Publication Confirmation (application) - one (1) copy
(8) Electronic data of (2) and (4) - one (1) set
(9) Letter of Consent (not necessary in the case of single authorship) -one (1) copy

(Acceptance of the Dissertation)

Article 5: When the Dissertation is submitted based on the preceding article, the Dean of the Graduate School shall consult the Faculty Meeting of the Graduate School of Advanced Science and Engineering of Hiroshima University (the "Faculty Meeting") regarding whether to accept it or not.

(Screening Committee)

Article 6: If it has been decided to accept the Dissertation based on the prescription of the preceding article, the Dean of the Graduate School shall refer the Dissertation to the Faculty Meeting.

2 The Faculty Meeting shall immediately establish a Screening Committee based on the reference described in the preceding paragraph.

3 The Screening Committee shall consist of the chief referee and two (2) or more sub-referees.

4 The chief referee shall be selected from among the faculty members of the Graduate School.

5 At least one (1) of the sub-referees shall be selected from among the faculty members of other programs or other graduate schools of Hiroshima University. It is allowed to select a sub-referee(s) from among researchers of other universities, research institutes, companies, etc.

(Dissertation Screening Session)

Article 7: The Screening Committee shall organize an open dissertation screening session.

(Date of the Conferment of Academic Degree)

Article 8: Doctoral degrees shall be conferred on the following date to those who have passed the dissertation screening and the final examination.

(1) In the case of those who have passed within the standard completion period: Date of the diploma awarding ceremony (However, this can be replaced with the date of passing if there are any special circumstances deemed as legitimate by the Dean of the Graduate School after discussion with the Faculty Meeting.)

(2) In the case of those other than the above: Date of passing

Chapter 3: Degree Screening through the Submitted Dissertation

(Qualification for Applying for Degree Conferment)

Article 9: Those who apply to any of the following can apply for the conferment of a doctoral degree by submitting the Dissertation based on Article 2 (3) of the Regulations.

(1) Those who were enrolled in their doctoral course of the Graduate School for three (3) years or longer, had earned the designated Credits, and had received the Research Guidance before withdrawing from the university
(2) Those who have completed their master's course and are equipped with research experience of three (3) years or longer
(3) Those who have graduated from the university and are equipped with research experience of five (5) years or longer
(4) Those who do not apply to the preceding three items and who are equipped with research experience of nine (9) years

(Procedure for Submitting the Dissertation)

Article 10: If those who apply to any of the items in the preceding article submit the Dissertation, they shall submit the following documents to the President of Hiroshima University through the Dean of the Graduate School.
(1) Degree Application - one (1) copy
(2) Dissertation (bound in a file) - one (1) copy
(3) List of Publications - one (1) copy
(4) Summary of the Dissertation - one (1) copy
(5) Resume - one (1) copy
(6) Reference Papers, if any - two (2) copies
(7) Certificate of graduation from the last school (Certificate of completion of a graduate school program or a copy of the diploma) one (1) copy
(8) Certificate issued by the supervisor or an equivalent person who can verify the research period - one (1) copy
(9) Doctoral Dissertation Submission and Publication Confirmation (application) - one (1) copy
(10) Electronic data of (2) and (4) - one (1) set
(11) Letter of Consent (not necessary in the case of single authorship) - one (1) copy

2 Notwithstanding the prescriptions of the preceding paragraph, those who have graduated from Hiroshima University and those who have completed the Graduate School do not have to submit the documents prescribed in (7) and (8) if their research experience is limited only to Hiroshima University.

(Acceptance of the Dissertation)

Article 11: The prescriptions regarding the acceptance of the Dissertation shall be in line with the prescriptions of Article 5.

(Screening Committee and Interview Committee)

Article 12: The prescriptions regarding the Screening Committee shall be in line with the prescriptions of Article 6.

2 The Interview Committee shall consist of three or more faculty members of Hiroshima University selected from a field closely related to the theme of the Dissertation. However, it is allowed to include faculty members and others from other graduate schools, research institutes, etc. if it is deemed as necessary by the Faculty Meeting.

3 The Interview Committee shall include a chief referee selected from the faculty members of the Graduate School.

4 The members of the Screening Committee are allowed to serve as members of the Interview Committee.

(Contents of the Examination or Interview and Eligible Period)

Article 13: The number of foreign languages used for the interview based on Article 6 (3) of the Regulations is one (1) at the Graduate School.

2 The number of eligible years based on Article 6 (4) of the Regulations is three (3) at the Graduate School.

Article 14: For those who have passed the dissertation screening and the interview or examination, doctoral degrees shall be conferred on the date of their passing.

(Dissertation Screening Committee)

Article 15: The Screening Committee shall organize an open dissertation screening session.

Chapter 4: Miscellaneous Provisions

(Document Formats)

Article 16: The formats of the documents concerned shall be from Appended Format No. 1 to Appended Format No. 9.

(Other)

Article 17: Any necessary matters relevant to the conferment of academic degrees not stipulated in the present internal regulations shall be determined following deliberations by the Faculty Meeting.

Supplementary Provisions

The present internal regulations shall come into force on April 1, 2020.

別記様式第１号
Attached Form 1

年　　月　　日
Date: (Year)　(Month)　(Day)

広島大学大学院先進理工系科学研究科長　殿
To: Dean of Graduate School of Advanced Science and Engineering,
Hiroshima University

年　　月　　日入学・進学
Enrollment Date: (Year)　(Month)　(Day)
広島大学大学院先進理工系科学研究科
Graduate School of Advanced Science and Engineering, Hiroshima University
博士課程後期　先進理工系科学専攻
Doctoral Program
Division of Advanced Science and Engineering
プログラム
Program

氏名　　㊞
Name　　Seal

学位論文審査願
Application for Review of Dissertation

広島大学大学院先進理工系科学研究科博士課程後期修了の認定を受けるため，広島大学学位規則第 4 条第 1 項の規定に基づき，下記関係書類を提出いたしますから，審査くださるようお願いします。

In order to receive approval for completion of the doctoral program of the Graduate School of Advanced Science and Engineering, Hiroshima University, I submit the related documents listed below for review based on the provisions of Article 4 (1) of the Hiroshima University Degree Regulations.

記

論文	1 通
Dissertation	1 copy
論文目録	1 通
List of Publications	1copy
論文の要旨	1 通
Summary of Dissertation	1copy
履歴書	1 通
Resume	1 copy
参考論文	2 通
Reference Papers	2 copies

別記様式第３号
Attached Form 3

論文目録
List of Publications

氏名 Name	印 Seal

学位論文
Dissertation

参考論文
Reference Papers

備考
Remarks:

１　学位論文及び参考論文については，論文題目，公表の方法，公表年月日及び冊数を記載すること。
For dissertations and reference papers, state the title of the dissertation, the method of publication, the date of publication, and the number of volumes.

２　論文題目が外国語の場合は，和訳を付けて，外国語，日本語の順序で列記し，日本語は(　)内に記載すること。
Write the title of the dissertation in the order of the foreign language (Japanese translation).

３　参考論文が２編以上ある場合は，列記すること。
If there are two or more reference papers, list them.

４　参考論文については，著者名，掲載誌名，巻，号，頁，年を付すこと。
For reference papers, write the author's name, publication name, volume, issue, page, and year.

５　論文をまだ公表していないときは，公表の方法及び時期の予定を記載すること。
If the paper has not been published yet, write the method and time of publication.

６　引用している特許及び特許出願が公表されているものは，参考論文に記載することができる。
Patents and patent applications cited that have been published can be described in reference papers.

７　論文の要旨は，4,000 字以内とすること。なお，英文の場合は，1,500 ワード以内とする。
Summary of the dissertation should be written in English and within 1,500 words.

８　用紙の規格は A4 とし，縦にして左横書きとすること。
Set the paper size to A4, write vertically and write horizontally on the left.

別記様式第 4 号
Attached Form 4

履歴書 Resume		
ふりがな Name in *katakana* 氏　　名 Name		男 ・ 女 Male/Female
生年月日 Date of birth		
本籍（都道府県名） Legal domicile (prefecture / country)		
現 住 所 Current address		

学　　歴
Academic history

職　　歴
Job history

研 究 歴
Research history

賞　　罰
Award and punishment

上記のとおり相違ありません。
I attest that the above information is true.

年　　月　　日
Date

氏　名　　印
Name　　Seal

備考
Remarks:
1　履歴事項は，高等学校卒業後の履歴について年次を追って記載すること。
For your academic history, give a chronological account beginning after your graduation from high school.
2　用紙の規格は A4 とし，縦にして左横書きとすること。
Set the paper size to A4, write vertically and write horizontally on the left.

別記様式第５号

論文審査の要旨

博士の専攻分野の名称	博 士 （　　）	氏名	
学位授与の要件	学位規則第４条第１・２項該当		
論　文　題　目			
論文審査担当者 主　　査　　印 審査委員　　印 審査委員　　印 審査委員　　印			
〔論文審査の要旨〕			

備考

審査の要旨は，1,500 字以内とする。

別記様式第６号

試験の結果の要旨

博士の専攻分野の名称	博 士 （　　）	氏　　名	
学位授与の要件	学位規則第４条第１・２項該当		
学位プログラム名		学生番号	
論　文　題　目			
試 験 担 当 者 主　　査 審査委員 審査委員 審査委員			印 印 印 印
〔試験の結果の要旨〕			

備考

要旨は，400 字程度とし，試験の方法も記載すること。

別記第７号様式

試問の結果の要旨

博士の専攻分野の名称	博 士 （　　）	氏　　名	
学位授与の要件	学位規則第４条第１・２項該当		
主査の担当学位プログラム名			
論　文　題　目			
試 問 担 当 者 主　　査 試問委員 試問委員 試問委員			印 印 印 印
〔試問の結果の要旨〕			

備考

要旨は，400 字程度とし，試問の方法も記載すること。

別記様式第８号

博士の学位論文の提出及び公表に係る確認書（申請書）

広島大学が博士の学位を授与したときは，学位規則(昭和二十八年四月一日文部省令第九号)の第八条，第九条及び広島大学学位規則（平成 16 年 4 月 1 日規則第 8 号）の第 13 条及び第 14 条に基づき，広島大学学術情報リポジトリにおいて「学位論文の内容の要旨」，「学位論文審査の結果の要旨」及び「学位論文の全文」を公表します。

博士の学位論文を提出するにあたり，学位の申請及び広島大学学術情報リポジトリにおける公表について以下の項目を確認のうえ，必要事項を記入してください。

【広島大学学位規則（平成 16 年 4 月 1 日規則第 8 号）抜粋】

（学位論文要旨の公表）

第 13 条　本学が博士の学位を授与したときは，当該博士の学位を授与した日から 3 月以内に，当該博士の学位の授与に係る論文の内容の要旨及び論文審査の結果の要旨をインターネットの利用により公表するものとする。

（学位論文の公表）

第 14 条　本学において博士の学位を授与された者は，当該博士の学位を授与された日から 1 年以内に，当該博士の学位の授与に係る論文の全文を公表しなければならない。ただし，当該博士の学位を授与される前に既に公表したときは，この限りでない。

2　前項の規定にかかわらず，博士の学位を授与された者は，やむを得ない事由がある場合には，学長の承認を受けて，当該博士の学位の授与に係る論文の全文に代えてその内容を要約したものを公表することができる。この場合において，学長は，その学位論文の全文を求めに応じて閲覧に供するものとする。

3　博士の学位を授与された者が行う前 2 項の規定による公表は，本学の協力を得て，インターネットの利用により行うものとする。

4　前 3 項の規定により当該博士の学位の授与に係る論文を公表するときは，「広島大学審査学位論文」と明記しなければならない。

学位申請者氏名	
論文提出先研究科	
論文題目	

問い合わせ先：

①　リポジトリ・著作権に関すること

広島大学図書館　図書学術情報企画グループ　学術情報企画主担当
Tel ： 082-424-6228（内線　東広島 6228）　Fax：082-424-6211（内線 東広島 6211）
E-Mail ： tosho-kikaku-jyoho @office.hiroshima-u.ac.jp
広島大学学術情報リポジトリ（HiR）トップページ　http://ir.lib.hiroshima-u.ac.jp/

②　確認書（申請書）・電子ファイル・学位論文審査に関すること

各研究科支援室（学生支援グループ）

③　特許等に関すること

指導教員 または 広島大学学術・社会連携室知的財産部
Tel：　082-424-5597　Fax：082-424-6133
E-Mail：chizai@hiroshima-u.ac.jp

※以下の項目は，事務で記入します。

学位記番号	甲 乙　第　　号	学位授与年月日	年　　月　　日

（裏面に必要事項を記入してください。）

１．学位論文執筆に係る確認事項

□	研究上の不正行為（捏造，改ざん，盗用等）を行っていないこと。
□	著作権の侵害行為を行っていないこと。（以下のア～キを満たす，適切な方法で引用を行っている。または，学位論文執筆に関して著作権者の許諾を得ている。） ア　既に公表されている著作物であること イ　「公正な慣行」に合致すること ウ　研究の引用の目的上「正当な範囲内」であること エ　引用部分とそれ以外の部分の「主従関係」が明確であること オ　カギ括弧などにより「引用部分」が明確になっていること カ　引用を行う「必然性」があること キ　「出所の明示」をすること
□	プライバシーを保護すべき研究対象者が存在しないこと。または，研究対象者のプライバシーが保護されていること。（対象者が研究対象となることを了解しており，公表方法等にも合意している。）

２．学位論文申請に係る確認事項

□	共著者がいる場合，共著者が同じ内容で学位論文申請を行うことが無いよう，「あなたの学位論文とすることに同意する。」旨の書面を提出していること。または，単著論文であること。
□	「学位論文の全文」，「学位論文の要旨」の電子データを提出すること。また，広島大学学位規則第 14 条第 2 項における「やむを得ない事由」がある場合には，併せて「学位論文全文の要約」の電子データを提出すること。博士論文の電子データ形式は，PDF（PDF/A(ISO 19005)推奨）とする。

３．広島大学学術情報リポジトリで公表することに係る確認事項

＜注意事項＞

1　本学では広島大学学術情報リポジトリ(以下「リポジトリ」という。)で論文の全文及び論文の要旨をインターネット公開することとしているため，本確認書(申請書)提出の際に，著作権のうち複製権・公衆送信権について許諾したこととなります。

2　リポジトリではデータの公開にあたり，データの複製(印刷・ダウンロード等)は，調査研究・教育または学習を目的としている場合に限定されることを明示します。

3　「学位論文の要旨」及び「論文審査の要旨」は学位授与日から 3 月以内に，「学位論文の全文」又は「学位論文全文の要約」は学位授与日から 1 年以内にリポジトリにおいて公表し，リポジトリトップページに「お知らせ」を掲載しますので，確認してください。

□	学位論文全文の公表に際し，学位申請者自身が著作権等の権利関係を確認済みであること。
□	広島大学学位規則第 14 条第 2 項における「やむを得ない事由」（以下Ａ～Ｈ）に該当しないこと。（該当がある場合はこの欄を空欄とし，以下の項目にチェックを入れること。）

【広島大学学位規則第 14 条第 2 項における「やむを得ない事由」に該当する項目】（ない場合はチェック不要）

A□	立体形状による表現を含むなど事実上インターネットでの公表が不可能なものである。
B□	学位論文における文章や図表・写真等について，著作権法第 32 条に定める引用ではなく，同法第 63 条に定める許諾によって利用した場合において，リポジトリでの公表が許諾に係る利用方法及び条件の範囲内に含まれていない。また，リポジトリでの公表について許諾が得られていない。
C□	共著者のある場合で，リポジトリで公表することについて許諾が得られていない。
D□	著作権を譲渡している場合で，著作権者（出版社や学会）に許諾が得られていない。
E□	投稿・出版した（またはその予定がある）ものであって，掲載誌・出版社の許諾が得られていない。
F□	公表してはいけないような，対象者のプライバシーに関わる情報や秘匿の情報を含んでいる。
G□	投稿・出版の予定があって，全文の公表により申請者自身に明らかな不利益が生じる。
H□	特許・実用新案等の出願の予定があって，全文の公表により申請者自身に明らかな不利益が生じる。

広島大学長　殿

上記の理由（詳細：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿）により，学位の授与に係る論文の全文に代えてその内容を要約したものを公表したいので，申請します。

なお，上記の理由が解消された場合には，速やかに＿＿＿＿＿＿研究科学生支援グループへ改めて本紙を提出し，論文の全文を公表します。

【公開予定日：20　　年　　月　　日】　（ □　公開予定日は定まらない。）

（事務で記入） やむを得ない事由の審議結果	20　　年　　月　　日　研究科教授会・代議員会　承認　　□

４．申請者署名及び指導教員署名

学位申請者署名（自署）		20　　年　　月　　日
主指導教員署名（自署） （論文博士の場合，主査等署名）		20　　年　　月　　日

記載いただく氏名等の情報は，学位関係業務にのみ使用します。

別記様式第 9 号(共著者の代表者からの承諾書様式)

承　　諾　　書
Letter of Consent

下記の論文を，　　氏の学位請求論文の公表論文とすることを共著者一同を代表して承諾いたします。
なお，この論文を，他の著者の博士学位請求の公表論文に再度使うことはいたしません。
I consent to assume the following article as the published article by which the author requests a doctoral degree.
In addition, I do not use this article again for a published article by which other author requests a doctoral degree.

記

1　著者名　Authors' names

2　題目　Paper Title

3　発表誌名　Name of Publication

4　巻（号）・頁・年　Volume,No.,pp

以上

年　　月　　日

共著者代表
（所属）
（氏名）　　印

備考
用紙の規格は，A4 とする。

別記様式第 9 号(共著者全員からの承諾書様式)

承　　諾　　書
Letter of Consent

下記の論文を，　　氏の学位請求論文の公表論文とすることを承諾いたします。
なお，この論文を，博士学位請求の公表論文に再度使うことはいたしません。
I consent to assume the following article as the published article by which the author requests a doctoral degree.
In addition, I do not use this article again for a published article for my doctoral degree.

記

1　著者名　Authors' names

2　題目　Paper Title

3　発表誌名　Name of Publication

4　巻（号）・頁・年　Volume,No.,pp

以上

年　　月　　日

共著者
（所属）
（氏名）　　印

備考
用紙の規格は，A4 とする。

18. Decision Criteria for Awarding Degrees and Evaluation Standards for Degree Theses (Doctoral Courses)

At the Graduate School of Advanced Science and Engineering of Hiroshima University, we shall award a doctoral degree to those who are deemed appropriate after the screening process for the doctoral degree based on the decision criteria below:

1. Those who will earn a doctoral degree shall be equipped with cross-disciplinary learning from an international point of view based on the Diploma Policy and also boast high-level, specialized capability with which they can perform research independently in their specialized area.
2. Those who will earn a doctoral degree shall have their doctoral thesis evaluated based on the Evaluation Standards for Degree Theses below. In addition, they shall give a research presentation that appropriately demonstrates their academic research results at a presentation or screening session in their specialized field and respond to inquiries logically and clearly.
3. The procedure for submitting a doctoral thesis shall be indicated separately.

(Evaluation Standards for Degree Theses)

I. Thesis Evaluation Points

(1) Whether or not the student has acquired sufficient knowledge as a doctoral degree holder in the relevant research field, and whether or not he/she has obtained the ability to identify problems clearly and solve them

(2) Whether or not the student's research theme is appropriate for the degree for which he/she has applied, and whether or not he/she was clearly aware of relevant problems when writing the thesis

(3) Whether or not the thesis descriptions (e.g. main text, charts, tables, quotations, etc.) are sufficient and appropriate, whether or not the thesis has consistency in terms of logical composition from the beginning to the end, and whether or not the thesis leads to a logically, clear conclusion

(4) Whether or not the student adopted an appropriate research method, survey/experimentation method, and demonstration method when researching his/her theme, and whether or not he/she formulated specific analysis/discussion based on them

(5) Whether or not the thesis has its own value when seen from a logical or demonstrative perspective in the relevant research field and when seen from international academic standards and a cross-disciplinary perspective

19. Requirements for Awarding Degrees and Criteria for Applying for Degrees (Doctoral Courses)

1. Requirements for Awarding Degrees
   (1) Must satisfy the Decision Criteria for Awarding Degrees and Evaluation Standards for Degree Theses of the Graduate School of Advanced Science and Engineering of Hiroshima University
   (2) For doctoral degrees earned by completing courses, must be enrolled for at least the period designated for the completion of the courses, earn the required credits, receive research guidance, submit a doctoral thesis, and pass the thesis screening and the final examination
   (3) For doctoral degrees earned mainly by writing a thesis, must submit a doctoral thesis and pass the thesis screening and the final examination
   (4) A degree applicant must submit a doctoral thesis of single authorship newly written to apply for an academic degree, and the main part of the thesis needs to have been published as a peer-reviewed thesis or to have been decided to be published as such. The criteria of such publication shall be set by each diploma program.

2. Criteria for Applying for Degrees
   For (i) and (ii) below, must satisfy the criteria set by each diploma program.
   (i) Peer-reviewed academic theses published in journals of related academic associations, etc. (including those that have been decided to be published)
   (ii) International conference theses (including those that have been decided to be published)

Diploma program	Doctoral Degree by Completing Course	Doctoral Degree Mainly by Writing Thesis
Mathematics	In principle, at least one (i) of single authorship, or at least two (i) of joint authorship	In principle, at least two (i) (including at least one (i) of single authorship), or at least three (i) of joint authorship
Physics	In principle, at least one (i) (of first authorship or equivalent)	In principle, at least one (i) (of first authorship or equivalent)
Earth and Planetary Systems Science	At least one (i) (of first authorship). In principle, the thesis shall be an SCI thesis.	At least two (i) (both of which need to be theses of first authorship). In principle, they shall be an SCI thesis.
Basic Chemistry	In principle, at least two (i). In the case of those who have joined the program without taking the master's course, at least one (i)	In principle, at least five (i)
Applied Chemistry	In principle, at least three (i) (including at least one (i) of first authorship)	In principle, at least five (i) (including one (i) of first authorship)
Chemical Engineering	At least three (i), or two (i) and at least one (ii). In either case, at least one (i) of first authorship	At least five (i) (including at least two (i) of first authorship)
Electrical, Systems, and Control Engineering	In principle, at least two (i) and at least one (ii)	In principle, at least five (i) and at least one (ii)
Mechanical Engineering	At least three (i), or two (i) and at least one (ii). In either case, at least one (i) of first authorship	At least five (i) (including at least two (i) of first authorship)
Transportation and Environmental Systems	At least two (i) (including at least one (i) of first authorship), or one (i) of first authorship and at least one (ii) of first authorship	At least three (i) (including at least one (i) of first authorship)
Architecture	At least two (i) (including at least one (i) of first authorship)	At least three (i) (including at least one (i) of first authorship)
Civil and Environmental Engineering	At least two (i) (both of which need to be theses of first authorship), including at least one SCI thesis	At least three (i) (all of which need to be theses of first authorship), including at least one SCI thesis

Informatics and Data Science		In principle, at least two (i) (including one (i) of first authorship) and at least one (ii) of first authorship	In principle, at least four (i) (including at least one (i) of first authorship) and at least one (ii) of first authorship
Quantum Matter		At least one (i)	At least one (i)
Transdisciplinary Science and Engineering	Environmental natural science	In principle, at least one (i) of first authorship or a writing work equivalent to that	In principle, at least three (i) of first authorship or writing works equivalent to them
	Development science	At least two (i) (both of which need to be theses of first authorship), including at least one thesis with impact factors	At least three (i) (all of which need to be theses of first authorship or corresponding authorship), including at least one thesis with impact factors

(Note) In the case of the Applied Chemistry Program, the Chemical Engineering Program, the Electrical, Systems, and Control Engineering Program, the Mechanical Engineering Program, the Transportation and Environmental Systems Program, the Architecture Program, the Civil and Environmental Engineering Program, and the Informatics and Data Science Program, degree application is available not only based on the above criteria but also on the criteria designed to foster generalists. For details, please contact the support office in charge of the relevant program.

20. Overview of the Screening Procedure for Doctoral Degrees Earned by Completing Courses

Item	Overview
Preliminary Screening	(Documents Submitted for Preliminary Screening) 1. Those who wish to apply for a doctoral degree shall submit to their supervisor an Application for Preliminary Screening of Doctoral Dissertation (designated format) and the documents designated by their diploma program. (Preliminary Screening Committee) 2. Based on a recommendation from the supervisor, the Program Faculty Committee shall nominate the members of a Preliminary Screening Committee and establish the committee through deliberations. (Preliminary Screening) 3. The Preliminary Screening Committee shall screen the submitted documents to decide whether or not to accept the degree application and allow the relevant individual who wishes to apply for the doctoral degree to complete the degree application procedure if deemed as appropriate.
Application Procedure	Degree applicants shall submit a set of the following documents to the support office by the date designated by their diploma program. Documents to Be Submitted (Article 4, Internal Regulations of the Graduate School of Advanced Science and Engineering based on the Hiroshima University Degree Regulations) ① Application for Review of Dissertation (Attached Form No. 1) - one (1) copy ② Dissertation (bound in a file) - one (1) copy ③ List of Publications (Attached Form No. 3) - one (1) copy (Give a Japanese translation in parentheses if the original title is in a language other than Japanese, and an English translation if in Japanese) ④ Summary of Dissertation - one (1) copy (The title of the dissertation, whether in Japanese or English, shall be the same as the one provided on the dissertation list [Attached Form No. 3].) ⑤ Resume (Attached Form No. 4) - one (1) copy ⑥ Reference Papers, if any - two (2) copies ⑦ Doctoral Dissertation Submission and Publication Confirmation (application) - one (1) copy ⑧ Electronic data of ③ and ⑤ - one (1) set ⑨ Letter of Consent (not necessary in case of single authorship) - one (1) copy ⑩ Other documents designated by the relevant diploma program ※ No need to pay a degree screening fee.
Acceptance Screening	Of the documents submitted for degree application, the Summary of Dissertation and Resume shall be distributed by the Faculty Meeting to all the professors at least seven days prior to the acceptance screening session.– An objection shall be filed in writing to the Dean of the Graduate School within seven days from the distribution. If there is no objection, the explanation of the theses overview at the Faculty Meeting shall be omitted. The Faculty Meeting shall select the members of the Screening Committee.
Dissertation Presentation	Immediately after receiving the documents above, the Screening Committee shall set a date of the dissertation presentation and submit the designated notification request form to the support office. (Notification spot: bulletin boards of the support office and the relevant program)

Screening Committee	1. If it has been decided to accept the Dissertation, the Dean of the Graduate School shall refer the Dissertation to the Faculty Meeting. 2. The Faculty Meeting shall immediately establish a Screening Committee based on the reference described in the preceding paragraph. 3. The Screening Committee shall consist of a chief referee and two (2) or more sub-referees. 4. The chief referee shall be selected from among the faculty members of the Graduate School. 5. At least one (1) of the sub-referees shall be selected from among the faculty members of other programs or other graduate schools of Hiroshima University. It is allowed to select a sub-referee(s) from among researchers of other universities, research institutes, companies, etc. (Article 6, Internal Regulations of the Graduate School of Advanced Science and Engineering based on the Hiroshima University Degree Regulations)
Examination	An examination shall focus on the degree dissertation and cover subjects related thereto. (Article 6 (1), Hiroshima University Degree Regulations)
Screening Period	1. The degree dissertation screening, examination and interview shall be completed within one year from the date of accepting the dissertation. 2. If there are any special circumstances, the period can be extended up to one year based on the deliberations by the Faculty Meeting.
Report from the Screening Committee	When the dissertation screening and examination have been concluded, the Screening Committee shall immediately provide to the Faculty Meeting a summary of the dissertation content, a summary of the dissertation screening, and a summary of the examination results through the following documents: - Summary of Dissertation Screening (Attached Form No. 5) - Summary of Examination Results (Attached Form No. 6) (Article 8 (1), Hiroshima University Degree Regulations)
Dissertation Availability	The degree application dissertation shall be made available for inspection upon request.
Conferment Screening	1. The Faculty Meeting shall distribute the submitted degree dissertation screening report to all the professors at least seven days prior to the session of the Faculty Meeting of the Graduate School. 2. If there is no objection, the explanation of the degree dissertation screening report shall be omitted. 3. The decision on the degree conferment requires the attendance of at least two-thirds of all the members (excluding those on an overseas assignment or long-term sick leave) of the Faculty Meeting and a consensus of least two-thirds of the members in attendance. (Article 9 (2), Hiroshima University Degree Regulations)
Report to the President of the University	The Dean of the Graduate School shall report to the President of the University through the following documents. (1) Degree conferment report - one (1) copy (2) Resume - one (1) copy (3) List of Publications one (1) copy (4) Summary of Dissertation - one (1) copy (5) Summary of Dissertation Screening - one (1) copy (6) Summary of Examination Results - one (1) copy (7) Degree dissertation - one (1) copy
Date of Degree Conferment	1. In the case of those who have passed within the standard completion period (within three years [excluding the case of early program completion]): Date of the diploma awarding ceremony in September or March 2. In the case of those who have passed exceeding the standard completion period: Date of passing 3. In the case of those who have passed under the early completion system (those enrolled in their program for one year or more but less than three years): Date of passing or the date of diploma awarding ceremony in September or March

21. Application Procedure for Doctoral Degrees Earned by Completing Courses

1. Documents to Be Submitted and No. of Necessary Copies
   ① Application for Review of Dissertation (designated form) ····· one (1) copy
   ② Dissertation ····· one (1) copy
   ③ List of Publications (designated form)····· one (1) copy
   ④ Summary of Dissertation ····· one (1) copy
   ⑤ Resume (designated form)····· one (1) copy
   ⑥ Reference Papers, if any ····· two (2) copies
   ⑦ Doctoral Dissertation Submission and Publication Confirmation (application) ····· one (1) copy
   ⑧ Electronic data of Dissertation and Summary of Dissertation (PDF file)····· one (1) set
   ⑨ Letter of Consent (designated form) ····· one (1) copy
   ⑩ Other documents designated by the relevant diploma program

2. Points to Note When Filling Out the Necessary Documents
   (1) Entries may be handwritten (fountain or ball-point pen), typed, or electronically copied.
   (2) A single identical personal seal must be used for all the documents.

3. Application for Review of Dissertation
   Use Attached Form No. 1.

4. Dissertation
   Dissertation needs to be bound in file form (paper) with the title and the author's name inscribed on the front cover.

5. List of Publications
   (1) Format
      Use Attached Form No. 3.
   (2) Dissertation
      (A) Title
         i. Give the title (and the subtitle if applicable) as it appears on the submitted dissertation.
         ii. Give a Japanese translation in parentheses if the original title is in a language other than Japanese, and an English translation if in Japanese.
         iii. If the dissertation is composed of several papers each with a different title, give a collective title without specifying the individual titles.
      (B) Publication and Timing
         i. Theses for which Hiroshima University confers doctorates are published in the Hiroshima University Institutional Repository.
         ii. For publication, theses are usually published in their entirety. Regarding theses which have been published in their entirety but with minor modifications or omissions in such a manner as not to directly alter the research content when such publication was permitted, the dates of publication and the names of the journals in which the theses were published (as well as the volumes, numbers and pages of the journals) or places of publication must be indicated.
         iii. Components of a dissertation may be separately published in units of division (volumes, chapters, etc.) or in sub-themes of the research content; in this case, the mode and the date of each publication must be indicated.
         iv. Theses may be considered as published when other papers with identical content are published by the same authors; in this case, the mode and the date of each publication must be indicated. For unpublished papers, the scheduled mode and date of publication must be indicated.
   (3) Reference Papers
         i. Indicate the title, author(s), and mode and date of publication of a paper single- or co-authored by the degree applicant that deals with a subject that is different from that of the degree dissertation and is particularly important as reference, if any.
         ii. Make a list of reference theses, if there are two or more of them.
         iii. Enter "none" if there are no reference theses.

6. Summary of Dissertation

Summary of Dissertation should be written in English and within 1,500 words.

7. Resume

(1) Format

Use Attached Form 4.

(2) Registry Address

Degree applicants of Japanese nationality must enter their prefecture's name only; those of other nationalities must enter their country's name.

(3) Current Address

(A) Enter the address as it appears on your residence certificate.

(B) Enter also the building name, apartment name, number, etc. for assured communication.

(C) Degree applicants who plan to stay overseas for an extended period of time following the submission of Dissertation must also enter their overseas address.

(4) Name

If your name is written in Chinese ideograms (kanji), indicate its reading in kana.

(5) Academic Background

(A) Enter chronologically the educational institutions attended, starting with graduation from secondary school.

(B) If you withdrew from a doctoral program after completing the coursework, attach a certificate of acquisition of credits in a postgraduate program.

(C) Indicate the change of name of a school during your enrollment, if any.

(D) Enter only the educational programs you pursued at institutions of formal education; years spent at an educational institution as a research fellow, etc. must be entered under "Research background."

(6) Professional Career

List chronologically all the posts of full-time employment you assumed, with each employer's name and job title. It is desirable that part-time posts are also listed if they are related to education and research.

(7) Research Background

(A) List the research activities undertaken that are noteworthy in connection with the envisaged academic degree, and do so chronologically and according to items.

(B) Information on noteworthy academic research activities expected in this column includes the following (examples):

i. Research projects (including joint projects) related to your doctoral research theme
ii. Training programs (including those pursued as a research fellow at a university)
iii. Academic surveys and investigations
iv. Publications and presentations (books, papers, etc.)
v. Activities involving scholarships and grants
vi. Activities involving academic societies
vii. Others that may be of significance in connection with the envisaged academic degree

(C) Entries entered under "Academic background" or "Professional career" should not be double-entered under "Research background."

8. Reference Papers

Reference Papers need to be bound together with Dissertation.

9. Doctoral Dissertation Submission and Publication Confirmation (application)

Use the designated format.

10. Electronic data of Dissertation and Summary of Dissertation

Submit Dissertation and summary in the form of a PDF file. (PDF/A [ISO19005] is recommended.)

11. Letter of Consent

Use the designated form. A letter of consent must be signed by all the co-authors or by the representative of the co-authors.

12. Other Documents Designated by the Relevant Diploma Program

If there are any other documents designated by the relevant diploma program, submit them.

【記載例 Sample】

第３号様式

ここに記載してある氏名表記を学位記の氏名欄に使用する。
The name written here is used for the name on your diploma.

押印してください。
印鑑がない場合は，サイン（署名）。
Seal here.
If you don't have a seal, sign here.

論　　文　　目　　録

Applicant Name　氏　名　広大　学　印

論　文

Title of your Doctoral

題　目　A Study on the Flow Field and Combustion Characteristics in a Swirl Type Combustor
（旋回流燃焼器内の流動と燃焼特性に関する研究）

外国語の場合は和訳，日本語の場合は英訳を付記する。
An English title should have a Japanese translation. A Japanese title should have an English translation.

Method and Term of Publication

公表の方法及び時期

１．第２章　旋回流の流動予測
日本〇〇学会誌第２巻１０号１０頁～１５頁　20XX 年 9 月 23 日　発行

２．第３章　旋回流燃焼機内の燃焼特性
〇〇学会論文集５巻６号　20XX 年 12 月発行予定

３．Chapter 4　Analysis of Combustion Characteristics
Journal of 〇〇〇〇 Vol.5, No.3, pp.666-670　20XX 年 7 月 11 日　発行

４．Chapter 5　Analysis of Flow Filed in a Swirl Type Combustor
International Journal of 〇〇〇 Vol.2　20XX 年 12 月発行予定

学位請求論文の目次の題目を記入する。公表した論文の題目は記入しない。
Write the chapter's title of your Doctoral Dissertation. Don't write the title of your published paper.

Number of your Doctoral

冊数　１　冊

Reference

参考論文

な　し

ない場合は，「なし」と記入する。
学位論文の内容以外の公表論文のうち，特に参考になる自著及び共著の論文があれば，次のことを記載する。
・題目　・著者名　・公表の方法及び時期
If you don't submit a Reference Dissertation, write "なし" (nothing) here.
If you have some special papers written by yourself or joint papers among your published papers whose contents differ from your Doctoral Dissertation, write the following items:
*Title *Author's Name *Method of publication and Date of Publication

論　文　の　要　旨

Title of your Doctoral

題　目　　A Study on the Flow Field and Combustion Characteristics in a Swirl Type Combustor

（旋回流燃焼器内の流動と燃焼特性に関する研究）

論文目録（第 3 号様式）に記載した題目と全く同じ題目を記載する。
You must write the same title of your Doctoral Dissertation as the title on the Dissertation List (Form

Applicant Name

氏　名　　広　大　　学

A4 版，横書きとし，4,000 字以内で作成し，片面印刷する。（複数ページになっても構わない。）
One-sided printing less than 4000 Japanese characters on A4 size paper. (More than 2 pages is no problem.)

第４号様式

履　　歴　　書

氏名は，論文目録（第３号様式）に記載したものと全く同じ表記で記載する。
氏名にはふりがなを付ける。You must write your entire name as it appears on the Dissertation List (Form No.3) with *Furigana*.

該当の性別を〇で囲む。
Choose appropriate sex and encircle it.

氏　名 Applicant Name	ひろ　だい　まなぶ 広　大　　学　　（男）・女
生年月日 Date of Birth	平成〇〇年１１月　６日
本　　籍 Nationality	広島県
現　住　所 Present Address	〒７３９－８５２４ 広島県東広島市鏡山一丁目４－１ 〇〇〇ハイツ　Ｂ棟 201 号室 TEL　〇〇

日本籍の者は，元号で記入。
外国籍の者は，西暦で記入。
If you are Japanese, write in the Japanese era name.
If you aren't Japanese, write in the dominical year.

日本籍の者は，本籍の県名を記入。
外国籍の者は，出身国名を記入。
If you are Japanese, write your prefecture of registry.
If you aren't Japanese, write you home country.

学　　歴　Academic Background	
平成〇〇年３月	広島県立ひろしま高等学校　卒業　（High School Level）
平成〇〇年４月 平成〇〇年３月	広島大学〇〇学部第〇類　入学 同上　卒業　（Undergraduate Level）
平成〇〇年４月１日 平成〇〇年３月〇日	〇〇大学大学院〇〇研究科博士課程前期〇〇専攻　入学 同上　修了　（Master's Course）
令和〇〇年４月１日	広島大学大学院先進理工系科学研究科博士課程後期先進理工系科学専攻　入学（進学） 現在に至る　（Doctoral Course）
職　　歴　Professional Career	
平成〇〇年４月〇日	日本工業（株）　採用
令和〇〇年９月〇日	同上　設計課に配置換　　現在に至る
研究歴　Research Background	
平成〇〇年〇月〇日	〇〇〇〇の研究に従事し現在に至る。
賞　罰　Prize and Penalty	
なし	

旧制の卒業生は，中等学校卒業から記載。
If you are an old-education-system middle school graduate, include education from middle school (only for Japanese).

常勤の職について，年次を追って勤務先，職名等を付し，退職等についても記載する。現職の場合，「現在に至る」と明示する。
Write your places of employment and job titles year by year, including resignation if any. If you are in employment, write also "現在に至る" (Hitherto).

先進理工系科学研究科での研究は記載しない
Include your research background except the research at the Graduate School of Advanced Science and Engineering, Hiroshima University.

ない場合は「なし」と記入する。
If you have not received a prize or penalty, write "なし"(Nothing)　here.

上記のとおり違いありません。

令和〇〇年〇月〇〇日

氏　　名　　広　大　　学　　印
Applicant Name

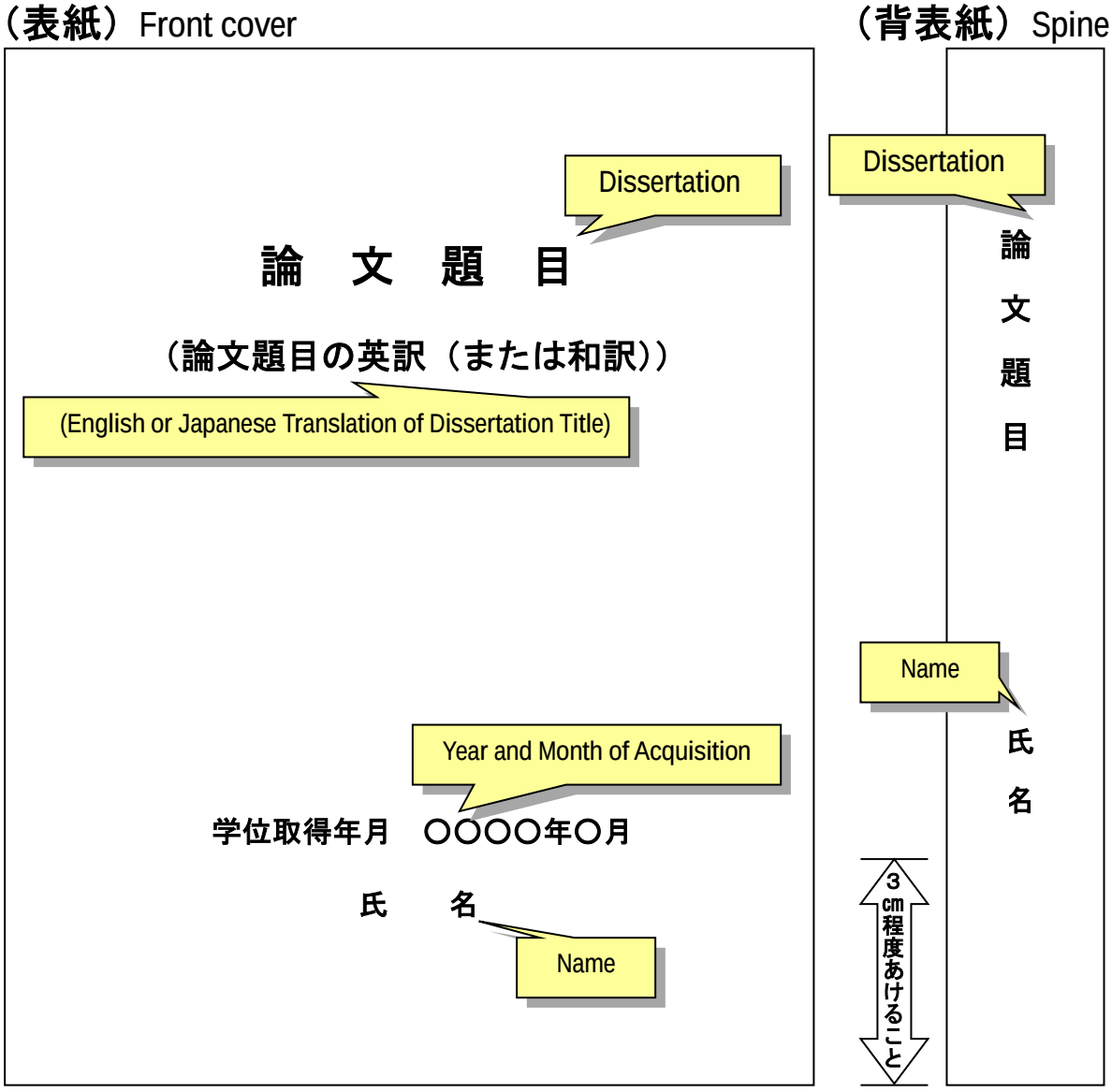
押印してください。
印鑑がない場合は，サイン（署名）。
Seal here.
If you don't have a seal, sign here.

学位論文の表紙
Front Cover of Your Doctoral Dissertation

※　最終的に提出する学位論文の表紙は，次のことに留意して作成すること。
Pay attention to the following when preparing your final doctoral Dissertation.

（1）表紙には学位論文題目，学位取得年月及び氏名を記載し，背表紙には学位論文題目及び氏名を記載すること。
The front cover must have the Dissertation title, the year and month of acquisition, and your name. The spine must have the Dissertation title and your name.

（2）学位論文題目は，学位申請時に届け出たものと全く同一の表記を記載すること。
（和題・英題ともに記載し，英題の大文字小文字の別も学位申請時の届け出と同一にすること。）
The Dissertation title on the front cover and spine must be the same as the title which you applied under.
(The English and Japanese titles must be printed on the cover. The titles must be exactly the same as the titles which you applied under, including the exact same lowercase letters and uppercase letters of the English title.)



Specified Forms for Doctoral Course

研　究　題　目　届（D）

Notification of the Research Title

Year　Month　Date
年　月　日　提出

学生番号 Student ID Number	D	プログラム名 Program	
ふりがな 氏　　名 Katakana Name			
研究題目 （英語の場合は，和訳を付すこと。） Research Title (Japanese Title)			

＜以下は主指導教員が記入＞ The followings are written by supervisor.

指　導　教　員　氏　名	
主指導教員 氏　　名　　確認印又はサイン	
副指導教員氏名 プログラム（専門分野）	プログラム（　　）
副指導教員氏名 プログラム（専門分野）	プログラム（　　）
副指導教員氏名 プログラム（専門分野）	プログラム（　　）
副指導教員氏名 プログラム（専門分野）	プログラム（　　）

※副指導教員は 2 人以上とし，うち 1 人は主指導教員と異なる専門分野の教員とする。（他研究科又は他大学の教員も可能とする。）

研 究 計 画 概 要

Outline of Research Plan

学 生 番 号 Student ID Number	D	プログラム Program	
氏 名 Name			
研 究 題 目 Research Title			
研 究 計 画 概 要 Outline of Research Plan			

上記のとおり提出します。

I hereby submit as above.

広島大学大学院先進理工系科学研究科長 殿

To: The Dean of the Graduate School of Advanced Science and Engineering

年 / 月 / 日

Year / Month / Day

学生番号:D
Student ID Number

学生氏名:
Name

主指導教員氏名:

副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:
副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名: 氏名:

※学生氏名，主指導教員氏名，副指導教員氏名は，自署又は押印とする。なお，副指導教員が他キャンパス又は他大学の場合には，指導内容を記したメールを添付することで，自署又は押印を省略することができる。

博 士 論 文 概 要
Outline of the Doctoral Thesis

学 生 番 号 Student ID Number	D	プログラム Program	
氏 名 Name			
論 文 題 目 Thesis Title			
論 文 概 要 Thesis Outline	**＊字数は 800 字程度（日本語），300 語程度（英語）とし，研究目的・方法・結果・考察（結論）を記載してください。** Please describe your research purpose, method, results, and discussion (conclusion) in about 800 characters (Japanese) and about 300 words (English).		

上記のとおり提出します。
I hereby submit as above.

広島大学大学院先進理工系科学研究科長 殿
To: The Dean of the Graduate School of Advanced Science and Engineering

年 月 日
Year / Month / Day

学生番号：D
Student ID Number

学生氏名：
Name

主指導教員氏名：

副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：
副 指 導 教 員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：	副指導教員	ﾌﾟﾛｸﾞﾗﾑ名： 氏名：

※学生氏名，主指導教員氏名，副指導教員氏名は，自署又は押印とする。なお，副指導教員が他キャンパス又は他大学の場合には，指導内容を記したメールを添付することで，自署又は押印を省略することができる。

提出日：　　年　　月　　日
Submission Date:　yy,　mm,　dd

博士論文予備審査願
Application for Preliminary Screening of Doctoral Thesis

学生番号 Student ID No.		プログラム Program	
氏名 Name			
論文題目 Dissertation Title			
学位の種類 Degree Type	博士（　　） Doctor of (　　)	※裏面「取得できる学位」参照 Refer to “Degrees That Can Be Earned” on the backside.	

論文数
No. of Dissertation

分類 Category	博士論文と関係があるもの Relevant to the Doctoral Dissertation	関係ないもの Irrelevant
論文（査読あり） Dissertations (peer-reviewed)	（　　）	（　　）
論文（査読なし） Dissertations (not peer-reviewed)	（　　）	（　　）
書籍 Books	（　　）	（　　）
その他 Others	（　　）	（　　）

（　）内は，筆頭著者の論文数を内数で示す。
In the parentheses, indicate the number of works of first authorship.

予備審査会（主査（主指導教員）において記入すること）
Preliminary Screening Session (To Be Entered by the Chief Referee [Supervisor])

予備審査委員 主査（主指導教員） Preliminary Screening Committee Chief Referee (Supervisor)			
予備審査委員 副査 Preliminary Screening Committee Sub-referees	ﾌﾟﾛｸﾞﾗﾑ名： Program 氏名： Name		ﾌﾟﾛｸﾞﾗﾑ名： Program 氏名： Name
	ﾌﾟﾛｸﾞﾗﾑ名： Program 氏名： Name		ﾌﾟﾛｸﾞﾗﾑ名： Program 氏名： Name
予備審査会 Preliminary Screening Session	日時 Date	年　月　日（　）　AM/PM　～ yy,　mm,　dd	
	場所 Venue		

（備考）取得できる学位

Remark; Degrees That Can Be Earned

プログラム Program	学位 Degree
数学プログラム Mathematics Program	博士（理学） Doctor of Philosophy in Science
物理学プログラム Physics Program	博士（理学） Doctor of Philosophy in Science
地球惑星システム学プログラム Earth and Planetary Systems Science Program	博士（理学） Doctor of Philosophy in Science
基礎化学プログラム Basic Chemistry Program	博士（理学） Doctor of Philosophy in Science
応用化学プログラム Applied Chemistry Program	博士（工学） Doctor of Philosophy in Engineering
化学工学プログラム Chemical Engineering Program	博士（工学） Doctor of Philosophy in Engineering
電気システム制御プログラム Electrical, Systems, and Control Engineering Program	博士（工学） Doctor of Philosophy in Engineering
機械工学プログラム Mechanical Engineering Program	博士（工学） Doctor of Philosophy in Engineering
輸送・環境システムプログラム Transportation and Environmental Systems Program	博士（工学） Doctor of Philosophy in Engineering
建築学プログラム Architecture Program	博士（工学） Doctor of Philosophy in Engineering
社会基盤環境工学プログラム Civil and Environmental Engineering Program	博士（工学） Doctor of Philosophy in Engineering
情報科学プログラム Informatics and Data Science Program	博士（情報科学） Doctor of Philosophy in Informatics and Data Science
量子物質科学プログラム Quantum Matter Program	博士（理学） Doctor of Philosophy in Science 博士（工学） Doctor of Philosophy in Engineering 博士（学術） Doctor of Philosophy
理工学融合プログラム Transdisciplinary Science and Engineering Program	博士（工学） Doctor of Philosophy in Engineering 博士（学術） Doctor of Philosophy 博士（国際協力学） Doctor of Philosophy in International Cooperation Studies