Graduate Program Guide

Academic Year 2026

長岡技術科学大学

Nagaoka University of Technology

The English translation is solely for reference purpose and not a legally definitive translation of the original Japanese text. Shoud any differences arise between two versions, the Japanese version will prevail as an official authoritative version.

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Aim of Establishment and Philosophy

I. Aim of Establishment

The remarkable strides made in Japanese science and technology over the last few decades have been accompanied by no less outstanding achievements in Japanese industry. At the same time, the accelerating pace of innovation has raised new issues concerning the state of science and technology and its social role, and there is demand for training leading engineers equipped with practical and creative abilities who can contribute to the prosperity of humankind.

To meet such social demand, Nagaoka University of Technology (hereinafter referred to as "NUT") has been established under a new concept as an engineering university **with an emphasis on its graduate school** that conducts education and research directed at the development of practical technology.

II. Philosophy

NUT's most important mission is to create new knowledge and technologies, and to cultivate individuals with the ability to produce original ideas. To fulfill this mission, NUT will continue to be a "university of ideas", taking the fundamental philosophy of its education and research to be the cultivation of practical and creative abilities relating to *GIGAKU* (the "science of technologies"), heightening creative power. Under this approach with *GIGAKU*, NUT will serve as a world center of education and research and aims to become an indispensable university for both local and global communities, developing leading engineers equipped with the practical and creative abilities to undertake innovative creation and the ambition to help achieve a sustainable society.

About *GIGAKU* (the "Science of Technologies")

GIGAKU is "a form of science, concerned with technology, which refines and further develops technological systems by reinterpreting the diverse technical aspects of reality from a scientific perspective." Through "constant feedback between theory and practice, in which theories are drawn from practice and then tested again in practice," it aims to integrate the two. As such, it requires "understanding and application of a wide range of disciplines, from science and engineering to practical technology and management science."

Relationship between NUT's Philosophy and its Motto "VOS"

NUT's fundamental philosophy of education and research is symbolized by the acronym "**VOS**," which is its motto. Here, **V** stands for **Vitality,** which refers to the energy to carry out the never-ending feedback between theory and practice; **O** stands for **Originality**, which signifies the cultivation of creative abilities in *GIGAKU*; and **S** stands for **Services**, which means to contribute to the happiness and sustainable development of humanity by the use of *GIGAKU*.

5-year Integrated Doctoral Program - Policy for Degree Conferment (Diploma Policy: DP)

Science of Technology Innovation

The human resources that Nagaoka University of Technology's 5-year Integrated Doctoral Program aims to develop are leading engineers and researchers who possess in-depth and abundant knowledge in specialized fields, creativity to pioneer unexplored areas, and practical skills to independently implement their own research projects and guide innovation. To achieve this aim, we have set the following four attributes as targets for students to attain by taking various subjects and engaging in research activities.

1. Research implementation abilities
Advanced research implementation abilities to independently set one's own research topics and systematically carry out research that can produce beneficial outcomes, as well as in-depth and abundant knowledge in specialized fields that serve as the foundation for research.

2. Ability to pioneer unexplored areas
Willingness and ability to take on the challenges of pioneering unexplored areas based on the integration of scientific principles from multiple specialized fields.

3. Social implementation of research findings
Willingness and practical ability to link research findings to social implementation from a technology management viewpoint while gaining deep insight into the impact on society.

4. Global innovation leader
Leadership skills that can guide innovation through research and development while collaborating with diverse entities based on insightful international perspectives and advanced conversational skills.

A doctoral degree will be conferred on students who have earned the number of credits needed for completion through subjects that facilitate the acquisition of the above targets, and have passed the doctoral dissertation screening based on the criteria stipulated by the department.

Correspondence between the DP and CP

DP / CP	1. Research implementation abilities	2. Ability to pioneer unexplored areas	3. Social implementation of research findings	4. Global innovation leader
1	○	○	○	○
2	○	○		
3	○	○	○	○
4	○		○	○
5	○	○	○	○
6			○	○
7	○	○	○	○
8			○	○
9			○	○

5-year Integrated Doctoral Program - Policy for Curriculum Organization and Implementation (Curriculum Policy: CP)

Science of Technology Innovation

Nagaoka University of Technology, in accordance with its Diploma Policy, offers subjects required by the Department of Science of Technology Innovation, and assigns faculty members to supervise doctoral research. In this way, the program develops leading engineers and researchers who possess in-depth and abundant knowledge in specialized fields, creativity to pioneer unexplored areas, and practical skills to independently implement their own research projects and guide innovation. To this end, the university offers a systematic curriculum based on the following policies.

1. To cultivate the research implementation abilities that facilitate the formation of novel theories and development of new technologies, students are required to take Advanced Experiment of Science of Technology I and II, and students will receive research guidance for the preparation of their doctoral dissertation.
2. To cultivate the ability to learn and effectively apply advanced specialized knowledge, students are required to participate in seminars and journal clubs conducted by their academic supervisors.
3. To cultivate the ability to guide innovation through research and development while collaborating with diverse entities based on insightful international perspectives and advanced conversational skills, students are required to participate in the International Research Internship.
4. To cultivate the ability to advance academic research based on high ethical standards, students are required to take Researcher Ethics.
5. To cultivate the ability to pioneer unexplored areas based on the integration of scientific principles from multiple specialized fields and to develop the various abilities required of global innovation leaders, the university offers elective-compulsory subjects and Science of Technology Innovation subjects (elective). In principle, these subjects are conducted in English.
6. Common subjects are offered to students to support the development of expertise from a broad perspective and increase their abilities to implement technology in society.
7. To cultivate the ability to engage in discussions and debates about research and to develop an international perspective, students are encouraged to actively participate in academic conferences both in Japan and abroad.
8. The program offers a course to enable students to gain the skills and abilities to adopt a scientific approach to corporate management, and to acquire a Master of Business Administration (MBA) degree.
9. Various courses are offered to enable advanced and systematic studies to address the challenges of modern society. Students will be certified as completing a course if they take and pass the designated subjects.

[Policy for Academic Achievement Evaluation]
Grading is conducted in a fair, rigorous, and objective evaluation of performance, and credits will be awarded to students who pass the subjects. For the doctoral dissertation, the screening criteria and methods are clearly stated, and pass/fail decisions are made through screening and examination by multiple faculty members.

Master's Program - Policy for Degree Conferment (Diploma Policy: DP)

Master's Program in Engineering

The human resources that Nagaoka University of Technology's Master's Program aims to develop are leading engineers and researchers who are adept at using information technology, have acquired a safety mindset, and possess advanced practical and creative abilities that can facilitate the global expansion of technology. To achieve this aim, we have set the following four attributes as targets for students to attain through a broad education comprising major subjects, common subjects, and research guidance conducted both inside and outside the university.

1. Advanced expertise
Acquisition of advanced specialized knowledge and skills in one's field of science and technology, the ability to effectively utilize information technology, as well as a safety mindset.

2. Flexible conceptualization abilities in science and technology
Acquisition of cross-sectoral knowledge and the ability to focus on different interdisciplinary fields, as well as multifaceted and flexible conceptualization abilities in science and technology.

3. Strategic technological development and research abilities
Acquisition of the abilities to ascertain global trends in society and industry, and to strategically advance technological development and research.

4. Global leader in science and technology
Acquisition of the abilities to work collaboratively in a team and compete fairly on the global stage as leading engineers and researchers.

A master's degree will be conferred on students who have earned the number of credits needed for completion through lecture subjects, exercise (seminar) subjects, and experiment/practical training (or skills practice) subjects that facilitate the acquisition of the above targets, and have passed the master's thesis screening.

Correspondence between the DP and CP

DP / CP	1. Advanced expertise	2. Flexible conceptualization abilities in science and technology	3. Strategic technological development and research abilities	4. Global leader in science and technology
1	○	○	○	○
2	○	○		
3	○			○
4		○	○	○
5	○	○	○	○
6	○	○	○	○
7	○	○	○	○

Master's Program - Policy for Curriculum Organization and Implementation (Curriculum Policy: CP)

Master's Program in Engineering

Nagaoka University of Technology, in accordance with its Diploma Policy, offers subjects required by each specialized field of science and technology under an educational philosophy that integrates the undergraduate and master's programs. Through these subjects, the Master's Program develops leading engineers and researchers who possess advanced practical and creative abilities that can facilitate the global expansion of technology. To this end, the university offers a systematic curriculum based on the following policies.

1. Specialized education is provided through the lecture subjects, exercise subjects and experiment/practical training (or skills practice) subjects. In addition, students will receive research guidance for the preparation of their master's thesis.
2. Through the systematic organization of subjects according to the areas of specialization in each major, the Master's Program provides an education that enhances specialized expertise while also addressing interdisciplinary areas. Furthermore, students may take subjects in other majors, thereby enabling them to understand integrated technologies that cover multiple specialized disciplines.
3. Research Integrity is a compulsory subject in all majors. In addition, students will take specialized engineering subjects to form a safety mindset and develop proficiency in information technology that is closely related to each major.
4. Common subjects are offered to students in all majors to support the development of expertise from a broad perspective and increase their abilities to implement technology in society. Common subjects are systematically organized to be consistent with undergraduate-level general studies subjects with the aim of achieving each of the targets described in the Diploma Policy.
5. Students will be provided with opportunities to experience overseas practical research and development activities related to their master's research topics. By engaging in research and development in other countries, students will gain the experience needed to become engineers and researchers who can perform at the global level.
6. Various courses are offered to enable more advanced and systematic studies. These courses are offered to students from all majors. While enrolled in their majors, students will be certified as completing a course if they take and pass the designated subjects.
7. Each major provides a curriculum organizational diagram to support the students' self-directed and independent study.

[Policy for Academic Achievement Evaluation]
The syllabus of each subject clearly states its purpose and objective goals, as well as its associations with the Diploma Policy. Grading is conducted in a fair, rigorous, and objective evaluation of performance, and credits will be awarded to students who pass the subjects. For the master's thesis, the screening criteria and methods are clearly stated, and pass/fail decisions are made through screening and examination by multiple faculty members.

Doctoral Program - Policy for Degree Conferment (Diploma Policy: DP)

Doctoral Program in Engineering

The human resources that Nagaoka University of Technology's Doctoral Program aims to develop are leading engineers and researchers who possess in-depth and abundant knowledge in specialized fields, creativity to pioneer unexplored areas, and practical skills to independently implement their own research projects and contribute to society's development. To achieve this aim, we have set the following four attributes as targets for students to attain by taking various major subjects and engaging in research activities.

1. **Research implementation abilities**
   Advanced research implementation abilities to independently set one's own research topics and systematically carry out research that can produce beneficial outcomes, as well as in-depth and abundant knowledge in specialized fields that serve as the foundation for research.
2. **Ability to pioneer unexplored areas**
   Willingness and ability to take on the challenges of pioneering unexplored areas based on the integration of scientific principles from multiple specialized fields.
3. **Giving back to society through research findings**
   Willingness and practical ability to link research findings to social development while gaining deep insight into the impact on society.
4. **Leadership to guide research and development**
   Leadership skills that can contribute to society's progress through research and development while collaborating with diverse entities based on insightful international perspectives and advanced conversational skills.

A doctoral degree will be conferred on students who have earned the number of credits needed for completion through subjects that facilitate the acquisition of the above targets, and have passed the doctoral dissertation screening based on the criteria stipulated by each major.

Correspondence between the DP and CP

DP / CP	1. Research implementation abilities	2. Ability to pioneer unexplored areas	3. Giving back to society through research findings	4. Leadership to guide research and development
1	○	○	○	○
2	○	○		
3	○		○	○
4	○	○		
5	○	○	○	○
6			○	○

Doctoral Program - Policy for Curriculum Organization and Implementation (Curriculum Policy: CP)

Doctoral Program in Engineering

Nagaoka University of Technology, in accordance with its Diploma Policy, offers subjects required by each major in the Doctoral Program in Engineering, and assigns faculty members to supervise doctoral research. In this way, the program develops leading engineers and researchers who possess in-depth and abundant knowledge in specialized fields, creativity to pioneer unexplored areas, and practical skills to independently implement their own research projects and contribute to society's development. To this end, the university offers a systematic curriculum based on the following policies.

1. To cultivate the research implementation abilities that facilitate the formation of novel theories and development of new technologies in each major, students will receive research guidance for the preparation of their doctoral dissertation.
2. To cultivate the ability to learn and effectively apply advanced specialized knowledge in each major, students are required to participate in journal clubs conducted by their academic supervisors.
3. To cultivate the ability to advance academic research based on high ethical standards, students are required to take Researcher Ethics.
4. To cultivate the ability to pioneer unexplored areas based on the integration of scientific principles from multiple specialized fields, the university offers lecture subjects with leading-edge content. Students may select from these subjects with consideration to their future goals.
5. To cultivate the ability to engage in discussions and debates about research and to develop an international perspective, students are encouraged to actively participate in academic conferences both in Japan and abroad.
6. Various courses are offered to enable advanced and systematic studies to address the challenges of modern society. These courses are offered to students from all majors. While enrolled in their majors, students will be certified as completing a course if they take and pass the designated subjects.

[Policy for Academic Achievement Evaluation]
Grading is conducted in a fair, rigorous, and objective evaluation of performance, and credits will be awarded to students who pass the subjects. For the doctoral dissertation, the screening criteria and methods are clearly stated, and pass/fail decisions are made through screening and examination by multiple faculty members.

Program Guide

Graduate School of Engineering

5-year Integrated Doctoral Program

Science of Technology Innovation

1. Overview

This Program Guide addresses the required curricula, subject requirements is based on Article 64 of the Rules of NUT, and program completion criteria for students of Nagaoka University of Technology (hereafter referred to as "NUT") is based on Article 69 of the same rules. The guide was prepared by the Academic Affairs Committee on January 20, 2026.

The criteria described here are applicable to students enrolling in 2025.

If there are revisions to the curricula, subject requirements, and graduation criteria, Revisions to the Curriculum Table and other necessary documents will be distributed to enrolled students at the guidance sessions for each academic year conducted at the start of April.

NUT was established as a New Concept University for engineering, with an emphasis on a graduate school that conducts education and research centered on the development of practical technologies.

As such, the mission of NUT is to create new knowledge and technologies, as well as to cultivate human resources with a high level of expertise and creativity. The principle that underlies education and research at NUT is the development of creative abilities associated with *Gigaku* — the science of technologies.

The personnel to be trained in the 5-year integrated doctoral program and the associated education objectives are outlined in the guide to the Department of Science of Technology Innovation.

2. Subjects, Credits and Period of Classes

The subjects and credits offered in the 5-year integrated doctoral program are detailed in the Department of Science of Technology Innovation subject list.

The standard amount of time required to earn 1 academic credit involves content for 45 hours of studying, and is calculated using the following criteria:

① Lectures: 15 hours of classes and 30 hours of preparation/review = 1 credit.

② Exercises (Seminars; Reading and Discussion/Seminar): 30 hours of classes and 15 hours of preparation/review = 1 credit

③ Experiments and Practical Training: 45 hours of classes = 1 credit

To ensure the quality and international applicability of the education provided at NUT, there will be 15 classes conducted for each subject, with classes conducted on holidays if required.

For details on each subject, please refer to the online version of the Syllabus. (URL: https://www.nagaokaut.ac.jp/student/class/syllabus/index.html)

The period of classes is set by the academic year. The academic year is divided into three terms; 1st term, 2nd term and 3rd term.

[Terms]

1st term: April 1 to August 31, 2nd term: September 1 to December 31, 3rd term: January 1 to March 31

Class Timetable will be posted at the beginning of the academic year and uploaded on our official website. Students are required to develop a study plan based on the Class Timetable.
(URL：https://www.nagaokaut.ac.jp/student/e/class/time-table/index.html)

3. Subject Registration

(1) The subjects will, in principle, be conducted strictly according to the curriculum for the program.

(2) Students must register for all subjects that they intend to take during the subject registration period at the start of the first term and second term in which each subject (including intensive lecture subjects) begins.

(3) At the start of each academic year, the Division of Academic Affairs will post Class Timetable on the university's official website.

(4) At the start of each school term, the Division of Academic Affairs will distribute a *Guide to Subject Registration* and *Subject Registration Forms*.

(5) Students must carefully refer to this Program Guide and the Class Timetable, develop a study plan with guidance from their academic supervisors, and register online for subjects based on the posted guides during the subject registration period for each term.

(6) For subjects scheduled for the third year or higher, students must submit the *Subject Registration Form* to the lecturer-in-charge of the intended subject during the subject registration period in order to obtain approval for attending classes.

(7) Students must check the results of their subject registration application online during the subject registration period. After checking the subject registration results, students may (under guidance from their academic supervisors) make modifications, additions, or cancellations to the registered subjects if necessary. These changes must be recorded online during the registration revision period after subject registration.

(8) If a student must cancel registration for a subject due to an unavoidable reason after the registration revision period, the student must submit a *Subject Cancellation Form* to the Division of Academic Affairs.

(9) Although some intensive lecture subjects may have undecided class schedules during the subject registration period, students are still required to register for these subjects (as described in item [2] above) if they wish to take them. In these cases, a registration cancellation period will be provided, and students must follow the cancellation procedure if they no longer wish to take a subject. Students should take note of the registration cancellation procedure and period for intensive lecture subjects, which will be posted on notice boards, etc.

(10) Students are not allowed to take intensive lecture subjects with schedules that completely or partially overlap with other subjects. In such cases, students must cancel their registration for one of the overlapping subjects during the registration cancellation period. If students are found to

have taken two subjects with overlapping schedules without cancelling their registration for one, they may be given a failing grade for both subjects.

(11) Please note that if a student has not cancelled registration for a subject and fails to attend classes or sit for an examination, the student will receive an automatic failure for that subject.

4. Examinations and Performance Evaluation

(1) In principle, examinations will be conducted at the end of the school term to conclude the subject. However, examinations may also be conducted at other times at the discretion of the lecturer-in-charge, with these interim examinations taking the place of the final examination. In addition, some subjects may utilize daily evaluations or reports in place of the final examination.

(2) Students are evaluated using the following grades: S, A, B, C, and D, which are detailed below.

Grade	Achievement Level	Points	GP
S	Student has thoroughly fulfilled the academic objectives of the subject and has achieved outstanding results	90–100	4
A	Student has thoroughly fulfilled the academic objectives of the subject	80–89	3
B	Student has fulfilled the academic objectives of the subject	70–79	2
C	Student has fulfilled the minimal academic objectives of the subject	60–69	1
D	Student has not fulfilled the academic objectives of the subject	0–59	0

GP (Grade Point) refers to the points obtained for each grade.

S, A, B, and C are considered passing grades.

(3) Students who pass the final examination of a subject will receive the prescribed credits for that subject. Credits that have already been acquired cannot be cancelled or modified by repeating the subject.

(4) The Grade Point Average (GPA) system has been implemented to provide an indicator that allows the comprehensive evaluation of academic achievement, as well as to conform to international grading evaluation schemes.

(5) The GPA is calculated using a credit-weighted average of the GP from all subjects taken by a student, regardless of pass/fail status. However, subjects that are unrelated to program completion are excluded from calculation. In cases where a student has prematurely dropped a subject or failed to sit for an examination, the student will receive a GP score of “zero” for that subject, but its credits shall still be included in the denominator for GPA calculation. GPAs are calculated to 2 decimal places.

(6) Students are to check their subject results online during the following periods: Middle of August for the first term, beginning of February of the subsequent year for the second term, and beginning

of March for the third term. Students are to check the bulletin board for details along with the notice indicated in (7).

(7) The University has a grade appeal system for students when they have any concerns regarding evaluations/grades. Check the bulletin board for details, as students will need to fulfil conditions for application of grade appeal.

5. Subject Requirements and Program Completion

The subject requirements and program completion criteria are described in the guide to the Science of Technology Innovation.

6. On-Demand Classes

Students who are unable to attend classes (lecture subjects) due to off-campus dispatch or other assignments may complete all or part of the coursework through on-demand (asynchronous) classes.

The required conditions and procedure for on-demand classes are outlined below. Students who meet these conditions and wish to take on-demand classes are requested to apply using the stipulated procedure.

(1) Conditions for On-Demand Classes

On-demand classes will be permitted under the following conditions:

① Cases in which students are engaged in off-campus practical training as part of a regular subject (teaching practice, research internships, etc.)

② Cases in which students are conducting research activities at another institution under an "external research guidance" arrangement

③ Other cases in which on-demand classes are deemed necessary (limited to cases with truly compelling circumstances, excluding job hunting and extracurricular internships.)

(2) Subjects Available for On-Demand Classes

Subjects that offer on-demand classes are indicated with "□" in the Notes column of the curriculum tables.

(3) Application Procedure for On-Demand Classes

Students who wish to take on-demand classes must obtain permission from their academic supervisors and also submit an *Application for On-Demand Classes* to the Division of Academic Affairs when applying for overseas dispatch subjects or external research guidance.

(4) Instructions for On-Demand Classes

Students taking on-demand classes should follow the instructions provided by the lecturer-in-charge.

*The *Application for On-Demand Classes* can be downloaded by accessing the LiveCampusU "Menu" → "Campus Info" → "School Shared Files".

7. Application for Thesis Screening and Degree Conferral

Applications for thesis screening and degree conferral are to be conducted based on NUT's School Regulations and the Rules for the Administration of Degree Thesis Screening in Nagaoka University of Technology.

8. Other Points to Note

For undergraduate-level subjects (limited to subjects where credits have yet to be acquired), the credits acquired will be recognized but will not count toward the credits required for completion of the 5-year integrated doctoral program.

Science of Technology Innovation

1. Fostering Human Resources

This program offers a 5-year integrated doctoral program that combines the conventional master's program and doctoral program. In this program, students may acquire a doctoral degree in as little as 3 years without having to undergo master's thesis screening, as well as participate in long-term overseas study programs and earn an MBA.

With a foundation in advanced research capabilities and an education that incorporates different disciplines and cultures, we aim to cultivate outstanding leaders (global innovation leaders) that are globally competitive, have the power to innovate, and the ability to drive Japanese and global industries. The following exemplify the types of personnel that we aim to foster in this program.

◇ Startup Company/Business-Oriented Personnel ◇

Here, we cultivate engineers with the ability to adopt a managerial perspective by integrating front-line research experience in specialist fields with an MBA earned from the University of Japan, which is a collaborative partner of Nagaoka University of Technology.

◇ Project Manager-Oriented Personnel ◇

By providing experience in multidisciplinary research projects, we train project managers who are able to implement a cross-disciplinary approach.

2. Education Objectives

With a focus on the target personnel described above, this program aims to facilitate the acquisition of the following abilities in students to cultivate global innovation leaders who can play an active role at the international level.

1. A strong interest in the courses and research conducted at Science of Technology Innovation, the ability to innovate at the global level, and fulfill a leading role in the advancement and development of the world's industries
2. Advanced research capabilities in various fields (such as mechanical engineering, electrical engineering, materials science, civil engineering, and bioengineering), a multifaceted perspective, as well as practical and interdisciplinary integrated capabilities in science and technology
3. English language ability, communication capability, facilitation capability, research proposal development capability, and the fundamental capabilities for business development that can aid in research, project promotion, and information transmission
4. Ability to recognize the core essence of a research topic through scientific methods, and to deduce truly innovative solutions
5. Farsighted perspective, business-mindedness, strong ethical values, and the ability to practically utilize these abilities

3. Subject Organization

The first to fifth years of the 5-year integrated doctoral program are referred to as GD1 to GD5.

The specialized education subjects, credits, course periods, and lecturers-in-charge are described in the attached table. In the table, a designation of "1・2 (①～②)" for a subject indicates that the subject can be taken in either GD1 or GD2, in the 1st to 2nd terms.

3.1 Compulsory Subjects

"Science of Technology Innovation Seminar I and II" and "Advanced Experiment of Science of Technology I and II" correspond to subjects offered at the master's level, while "Science of Technology Innovation I and II" correspond to subjects offered at the doctoral level. In principle, these subjects will be conducted under each student's academic supervisor in their assigned research laboratory. However, there may be cases where the seminars are jointly conducted by two or more laboratories.

The "International Research Internship" provides students with the opportunity to experience research activities overseas (or a similar environment) for a minimum of 4 weeks at the universities, companies or research institutions overseas.

The "Research Ethics I" and "Research Ethics II" provides students with the opportunity to understand the research ethics, social responsibility and roles necessary to conduct research.

3.2 Elective-Compulsory Subjects and Science of Technology Innovation Subjects (Elective)

These subjects are specially offered by our program to cultivate global innovation leaders. In addition to Japanese academic staff with active international roles, our faculty includes world-class foreign staff and accomplished staff with industrial backgrounds and extensive experience as project leaders.

An example of these subjects is "Practical Work on Product Development", where students from different fields form research and development teams with companies to conduct project-based research and development. In "Practical Work for Project Leader Education", students will gain practical experience in research planning conducted with local SMEs (small and medium-sized enterprises). In principle, this subject will be conducted in English, and students will gain innovative abilities, English language abilities, communication abilities, facilitation skills, research plan proposal abilities, and business development abilities.

3.3 Specialized Engineering Subjects (Elective)

Students enrolled in this program are free to take subjects according to their personal specialties and interests from among the wide variety of classes offered at NUT's Graduate School of Engineering. Through these subjects, students will cultivate advanced research abilities in fields such as mechanical engineering, electrical engineering, materials science, civil engineering, and bioengineering. In addition, they will also acquire practical multi-interdisciplinary integrated abilities in the science of technology.

Furthermore, students enrolled in this program can take elective subjects offered by the master's and doctoral programs of other majors, and have these credits recognized as major subject credits for this program. However, this only applies to subjects that can be taken in English. Specifically, these refer to master's program subjects that are marked with the following symbols in each major's

attached table in the Program Guide: ◎, ●, ☆, ★, and A. Note that subjects with the ◎ and ● symbols can only be taken in the years that they are offered in English. For doctoral program subjects, all elective subjects from any majors are eligible for credit recognition in this program. In principle, students should take the master's-level subjects during the 2-year period from GD1 to GD2 and the doctoral-level subjects during the 3-year period from GD3 to GD5.

Students are encouraged to seek guidance from their academic supervisor when selecting their elective subjects.

3.4 Common Subjects (Elective)

Based on NUT's principles regarding common subjects, in principle, students must acquire a minimum of 6 credits from common subjects during the 2-year period from GD1 to GD2.

3.5 Regarding the Acquisition of an MBA

The Master of Business Administration (MBA) is a degree awarded to individuals who have acquired the skills and abilities to implement a scientific approach in business administration. Our program has established an agreement with the International University of Japan (Minami-Uonuma City, Niigata Prefecture), and we plan to jointly offer a course that allows our students to also acquire an MBA from that university.

4. Completion Requirements

4.1 Requirements for Program Completion

In order to complete this program, students must earn a total of 42 credits or more (18 credits from compulsory subjects, a minimum of 6 credits from the elective-compulsory subjects outlined in the attached figure, a minimum of 12 credits from the elective subjects, and a minimum of 6 credits from the common subjects), undertake the necessary research work, and pass the doctoral thesis screening and final examination. However, in cases where permission has been granted by the student's academic supervisor, a portion or all of the 12 credits for the elective subjects may be replaced by credits earned from major subjects in the master's or doctoral programs of other majors (See Section 3.3). In these cases, students must fill in the *Registration Form for Taking Subjects in Other majors* after receiving approval from their academic supervisors, and submit the completed form to the Division of Academic Affairs.

The doctoral thesis will be based on the consolidated results of research conducted under the guidance of the academic supervisor. Students are encouraged to present their doctoral research content at scientific meetings and journals in their field of study while they are enrolled at NUT.

Students intending to complete the program quickly should aim to acquire a minimum of 37 or 38 credits (a minimum of 13 or 14 credits from the compulsory subjects, a minimum of 6 credits from the elective-compulsory subjects, a minimum of 12 credits from the elective subjects, and a minimum of 6 credits from the common subjects) during the 2-year period from GD1 to GD2.

Table. Credits for Program Completion

Compulsory Subjects	18 (13–14)
Elective-Compulsory Subjects	6 (6)
Elective Subjects	12 (12)
Common Subjects	6 (6)
Total	42 (37–38)

* Numbers in parentheses refer to the estimated credits that should be taken in the 2-year period from GD1 to GD2 for early completion.

4.2 Research Guidance Plan

The standard schedule for the progression and completion procedures of this program is described below. Research laboratory assignments are decided at the time of tentative acceptance after passing the entrance examination. In this program, research guidance is provided for 3 to 5 years (including cases of early completion). Three model cases are provided as examples. (Refer to model study case examples)

(1) For Students Enrolling in April → Completing in March

April: GD1 students decide on their academic supervisors.

April: GD1 students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

During GD1, students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

From GD2 onwards, the student will review the Research Plan with the academic supervisor every year. After reviewing the plan, each student will outline the proposal in a “Research Plan”, and submit it to the academic supervisor. Based on the student’s research plan, the academic supervisor will prepare a “Research Guidance Plan” and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Guidance Plan” will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

During GD1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods.

Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

From GD2 onwards, students will proceed with data collection and analysis using the established research methods.
In addition to research guidance, students will receive research instruction from their academic supervisors on other aspects, such as how to prepare figures and tables for external presentations, organize and cite references, draft scientific papers, and presentation methods approximately 1 to 4 times per month.

March to April in the following year: Progress report sessions (For GD1–GD4)
During progress report sessions, students present on the progress of their research and other activities. Discussions and opinions received during these sessions will be reflected in future activity plans.

Degree application year
End of November to Early December: Submission of the *Application Form for Dissertation Screening for Doctoral Degree* and other documents
End of January to March: Submission of the doctoral dissertation and dissertation abstract (approximately 2,000 Japanese characters or 500 English words)
Doctoral dissertation presentation
Doctoral dissertation screening and final examination
March: Graduation ceremony

(2) For Students Enrolling in September → Completing in August
September: GD1 students decide on their academic supervisors.
September: GD1 students consult with their academic supervisors to determine their research topics.

September to October: Development of the research plan
During GD1, students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.
At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.
From GD2 onwards, the student will review the Research Plan with the academic supervisor every year. At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

From September onwards: Conduct research
Students will carry out research in accordance with the research plan.
During GD1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods.
Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.
The students will undergo periodic checks on their research progress by their academic supervisors. Based

on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.
From GD2 onwards, students will proceed with data collection and analysis using the established research methods.
In addition to research guidance, students will receive research instruction from their academic supervisors on other aspects, such as how to prepare figures and tables for external presentations, organize and cite references, draft scientific papers, and presentation methods approximately 1 to 4 times per month.

August to September in the following year: Progress report sessions (For GD1–GD4)
During progress report sessions, students present on the progress of their research and other activities. Discussions and opinions received during these sessions will be reflected in future activity plans.

Degree application year
End of April to Early May: Submission of the *Application Form for Dissertation Screening for Doctoral Degree* and other documents
End of June to August: Submission of the doctoral dissertation and dissertation abstract (approximately 2,000 Japanese characters or 500 English words)
Doctoral dissertation presentation
Doctoral dissertation screening and final examination
August: Graduation ceremony

4.3 Requirements for Early Completion
Students may complete the doctoral program within a minimum of 3 years if they fulfill all the program completion requirements (including all research achievements such as scientific papers related to the doctoral thesis research) as determined by a program faculty meeting.

5. Third-Year Transfer Students
Students who pass the **third-year entrance examination and selection for working adults** may transfer into the third year of the 5-year integrated doctoral program in NUT's Graduate School of Engineering. These students shall be considered to have obtained the following credits during GD1 to GD2: 6 credits from compulsory subjects (Science of Technology Innovation Seminar I, Science of Technology Innovation Seminar II, Advanced Experiment of Science of Technology I, and Advanced Experiment of Science of Technology II), 12 credits from elective subjects, and 6 credits from common study subjects. In addition, third-year transfer students who enroll in the WISE Program's "WISE Global Pro-Active Root Technology Program" should refer to "Section 6. WISE Program" below.

Model A Entrepreneurial-type Individuals

Model B Innovative Leader-type Individuals

Example of a Different Type of Enrollee

Undergraduate

Prize winner in a business competition as an undergraduate

Work experience in a Southeast Asian company through an overseas Jitsumu-Kunren internship

Obtained 8 advanced credits for graduate school-level courses (Reduced burden for earning credits in graduate school)

GD1

[Production Factor and Industrial Management Engineering]

[English Business Communication]

[Practical work on venture flotation training I]

[English Business Communication]

[Design for GIGAKU Innovation]

[Tacit Knowledge Based Innovation]

[Facilitation Engineering on Science and Technology]

International Conference Presentation

GD2

Practical work experience at an overseas startup company during [International Research Internship]

[Leadership Development]

[Regional Industries in Foreign Countries]

Collaborative research and scientific paper authorship with a European corporation or advanced research laboratory during [International Research Internship]

Collaborative research with a European university during [International Research Internship]

[Innovation Case Study]

[Global Research Strategy]

GD3

[Advanced Entrepreneurship]

Patent Application

[Global Research Strategy]

Practical work experience in research planning at a regional SME during [Practical Work for Project Leader Education]

Supervising technical college students during [Practical Work on Research Guidance]

Patent Application

GD4

Startup company established during [Product Development Project Training]

Earn MBA credits from the International University of Japan

Awarded Doctorate

Awarded Doctorate

Employment as a researcher and research planner in an overseas corporation after skipping 2 grades

Practical work experience as a researcher planner at an SME during [Practical Work for Project Leader Education]

GD5

MBA from the International University of Japan

Studying at an overseas university as part of a double degree program

After graduation

CTO of a globally expanding startup company

*Subjects offered every other year are also included.

Employment as top-level academic staff at a university or technical college with a global perspective and expertise in science of technology innovation

Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Science of Technology Innovation

	Diploma Policy			
	1. Research implementation abilities	**2. Ability to pioneer unexplored areas**	**3. Social implementation of research findings**	**4. Global innovation leader**
5-year Integrated Doctoral Program **1st-5th Grade**	Doctoral Dissertation Advanced experiment of Science of technology I & II Science of technology innovation seminar I & II Science of technology innovation I & II Elective-Compulsory Subjects Subjects of Science of Technology Innovation International research internship Researcher Ethics I & II	Doctoral Dissertation Advanced experiment of Science of technology I & II Science of technology innovation seminar I & II Science of technology innovation I & II Elective-Compulsory Subjects Subjects of Science of Technology Innovation International research internship	Doctoral Dissertation Elective-Compulsory Subjects Subjects of Science of Technology Innovation International research internship Researcher Ethics I & II	Doctoral Dissertation Elective-Compulsory Subjects Subjects of Science of Technology Innovation International research internship Researcher Ethics I & II
	Advanced science of technology innovation engineering Practical work for project leader education Practical work on product development Plan drafting method for science of technology Innovation case study Practical work on research guidance Practice of Idea Development Industrial planning and management Global research strategy Tacit knowledge based innovation Design Thinking Technology Management	Advanced science of technology innovation engineering Practical work for project leader education Practical work on product development Plan drafting method for science of technology Innovation case study Practice of Idea Development Design for GIGAKU innovation Global research strategy Tacit knowledge based innovation Advanced entrepreneurship Design Thinking Technology Management	Advanced science of technology innovation engineering Practical work on venture flotation training I Practical work on venture flotation training II Practical work for project leader education English business communication Facilitation engineering on science of technology Innovation case study Practice of Idea Development Design for GIGAKU innovation Industrial planning and management Advanced industrial structure Leadership development Production factor and industrial management engineering Regional industries in foreign countries Advanced entrepreneurship	Advanced science of technology innovation engineering Practical work on venture flotation training I Practical work on venture flotation training II Practical work for project leader education English business communication Facilitation engineering on science of technology Innovation case study Global research strategy Advanced industrial structure Leadership development Production factor and industrial management engineering Regional industries in foreign countries Advanced entrepreneurship Creative Leadership
		(Common Subjects) Modern Mathematics Theory of Mathematical Analysis Sports Bio-mechanics Social Welfare Introduction of Cognitive Science Language and Thought Advanced Psychology	(Common Subjects) Advanced Safety Engineering Advanced Safety and Information Security I & II Science and technology in modern society Decarbonization System Advanced Business Management Practice of Idea Development Japanese Industrial Development and SDGs Gigaku Innovation and Creativity An outline of Intellectual Property Introduction to the SDG Practice	(Common Subjects) Technological English English for Science and Technology English For Academic Purposes Analytical Reasoning and Presentation Professional Discourse and Presentation Fundamental English for Graduate Students English Presentation Skills Language and Understanding of Other Cultures Characters in Modern Japanese Literature Chinese Thought and Society Social Skills Considering from Diversity International Relations Introduction to the SDG Practice

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory/Elective		Subject Name	Credits	Year (Term)	Lecturer-in-Charge	Notes
Compulsory		Science of Technology Innovation Seminar I	1	1･2①	Staff	☆
		Science of Technology Innovation Seminar II	1	1･2②～③	Staff	☆
		Advanced Experiment of Science of Technology I	2	1･2①	Staff	☆
		Advanced Experiment of Science of Technology II	2	1･2②～③	Staff	☆
		International Research Internship	4	1～5①～③	Staff	☆
		Science of Technology Innovation I	3	2～5①	Staff	☆
		Science of Technology Innovation II	3	2～5①	Staff	☆
		Researcher Ethics I	1	1･2②	Nakayama, Tanaka(S), Sasaki(Toru) & Maki	☆ ☐
		Researcher Ethics II	1	1～5①～⑤	Staff	☆
		Total	18			
Elective Compulsory		Advanced Science of Technology Innovation Engineering	2	1･2①～②	Nakayama, ※Ninomiya & ※Hanada	☆ ☐
		Practical Work on Venture Flotation Training 1	2	1･2①～③	Yamaguchi, ※Katagawa & ※( )	☆ (GD3~5 may register)
		Practical Work on Venture Flotation Training 2	1	1~5①～③	Yamaguchi & ※Katagawa	☆
		Practical Work for Project Leader Education	3	1･2①～③	Staff	☆
		Practical Work on Product Development	2	1～5①	Staff	☆
		English Business Communication	1	1～5①	Yamaguchi, Maki & ( )	E ☆
		Facilitation Engineering on Science of Technology	2	1～5②	Yamaguchi, Maki, ※( ) & ※( )	O ☆ ☐
		Plan Drafting Method for Science of Technology	1	1～5①～③	Staff	☆ ☐
		Innovation Case Study	2	1～5①～③	Staff	☆
		Practical Work on Research Guidance	2	1～5①～③	Staff	☆
		Practice of Idea Development	3	1～5①～③	※Kaida,Yamazaki & Adlin	☆
		Total	21			
Elective	Science of Technology Innovation	Design for GIGAKU Innovation	2	1～5①～③	※Kaida	O ☆
		Industrial Planning and Management	2	1～5①	Maki	E ☆ ☐
		Global Research Strategy	2	1～5①	Yukawa, Yamaguchi & ※ Tamune	E ☆ ☐
		Advanced Industrial Structure	2	1～5①	Yamaguchi & ※( )	E ☆ ☐
		Tacit Knowledge Based Innovation	2	1～5②	Nakayama	E ☆ ☐
		Leadership Development	2	1～5①～②	※Kaida	E Classes can also be conducted in English if international students are enrolled.
		Production Factor and Industrial Management Engineering	2	1～5②	Yamaguchi & ※ Nakamura (H)	O ☆ ☐
		Regional Industries in Foreign Countries	2	1～5②	Yamada (N) , Yamaguchi & Others	E ☆ ☐
		Advanced Entrepreneurship	2	1～5①～③	Yamaguchi & ※( )	O ☆ ☐
		Creative Leadership	2	1～5②	Sasaki (Toru), ※Ohishi & ※ Tajiri	☆ ☐

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory/Elective		Subject Name	Credits	Year (Term)	Lecturer-in-Charge	Notes
Elective	Science of Technology Innovation	Design Thinking	2	1～5①	Sasaki (Toru), ※Cristian & ※ Ohishi	☆ □
		Technology Management	2	1～5①	Sasaki (Toru), ※Ohishi ＆※ Sugiyama	☆ □
		Total	24			
	Common Subjects	Modern Mathematics	2	1･2②	Kumagai	
		Theory of Mathematical Analysis	2	1･2①	Yamamoto (Ke)	□
		Sports Bio-mechanics	2	1･2①	Okushima	□
		Social Welfare	2	1･2②	※ Yoneyama	
		Introduction of Cognitive Science	2	1･2①	※Kitajima	□
		Language and Thought	2	1･2②	Kano & Shigeta	□
		Advanced Psychology	2	1･2①	※Yamakawa	□
		Advanced Safety Engineering	2	1･2②	※Kadowaki	
		Science and technology in modern society	2	1･2①	※ Kurihara	□
		Advanced Safety and Information Security I	1	1･2②	Miyoshi ※Ogino & Itoh(Kosuke)	
		Advanced Safety and Information Security II	1	1･2②	Miyoshi & ※Sakurai(Tsu)	
		Decarbonization System	2	1･2①	Li	
		Advanced Business Management	2	1･2①	※ Takeda(A)	
		Japanese Industrial Development and SDGs	2	1･2②	Katsumi(T)	☆ A
		Gigaku Innovation and Creativity	2	1･2①	Manada	☆ □
		An outline of Intellectual Property	2	1･2①	※ Yoshii	
		Practice of Idea Development	2	1･2①･②	※Kaida,Yamazaki & Adlin	Same content both 1st term & 2nd term
		Technological English	2	1･2②	Ikarashi	★ □
		English for Science and Technology	2	1･2①	Takahashi(M)	★
		English for Academic Purposes	2	1･2①	※Takahashi (A)	★
		Fundamental English for Graduate Students	2	1･2②	Fujii	★ □

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory/Elective		Subject Name	Credits	Year (Term)	Lecturer-in-Charge	Notes
Elective	Common Subjects	English Presentation Skills	2	1･2①	Nobuhara	★
		Analytical Reasoning and Presentation	2	1･2①	※ Moulinos	☆
		Professional Discourse and Presentation	2	1･2②	※ Moulinos	☆
		Language and Understanding of Other Cultures	2	1･2①	Kano	□
		Characters in Modern Japanese Literature	2	1･2①	※Wakabayashi	
		Chinese Thought and Society	2	1･2①	Hasegawa	
		International Relations	2	1･2①	※Kuroda	
		Introduction to the SDG Practice	2	1･2①	※Katsumi（M）	★
		Social Skills Considering from Diversity	2	1･2①	※Koguchi, ※Yamamoto(M), & Nanko	□

1) In the "lecturer-in-charge" column, ※ indicates an adjunct lecturer and ( ) indicates that the lecturer is undecided

2) In the "Year/Term" column, the numbers indicate the designated years and terms, respectively, for each subject (Terms are encircled)

【Symbols in the Notes Column】

E: Conducted during even-numbered years according to the Reiwa Calendar

O: Conducted during odd-numbered years according to the Reiwa Calendar

◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar

●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the Reiwa Calendar

☆: Conducted in English

★: Conducted in both Japanese and English

A: Can be conducted in English for SDG Professional Course students

I: Subject is offered only to international students

□: Subject Available for On-Demand Classes

Program Guide

Graduate School of Engineering

Master's Program in Engineering

1. Overview

This Program Guide addresses the required curricula, subject requirements is based on Article 64 of the Rules of NUT, and program completion criteria for students of Nagaoka University of Technology (hereafter referred to as "NUT") is based on Article 69 of the same rules. The guide was prepared by the Academic Affairs Committee on January 20, 2026.

The criteria described here are applicable to students enrolling in 2025.

If there are revisions to the curricula, subject requirements, and graduation criteria, Revisions to the Curriculum Table and other necessary documents will be distributed to enrolled students at the guidance sessions for each academic year conducted at the start of April.

NUT was established as a New Concept University for engineering, with an emphasis on a graduate school that conducts education and research centered on the development of practical technologies. As such, the mission of NUT is to create new knowledge and technologies, as well as to cultivate human resources with a high level of expertise and creativity. The principle that underlies education and research at NUT is the development of creative abilities associated with *Gigaku* — the science of technologies.

NUT's master's program aims to develop practical and creative abilities in students, and to train highly qualified leading engineers to fulfill society's needs.

The curricula are designed according to the objectives of each individual major, and are effectively organized to provide a seamless and consistent education between the undergraduate and graduate levels. The education methods are described below.

(1) Major Subjects

These subjects systematically facilitate the understanding of fundamental engineering knowledge and support the acquisition of advanced specialized and interdisciplinary knowledge.

(2) Common Subjects

These subjects foster the management abilities needed to maximize the value of technology in enterprises and industrial activities, as well as the capabilities to comprehend various technological matters from social and international perspectives. In addition, these subjects provide a foundation of diverse and advanced intellectual qualities to increase practical technological skills and support enhanced specialization from a wide scope.

(3) Research Work (Fundamental Research and Development Research)

Preparation of the master's thesis will require students to conduct fundamental research together with production application research with the central aim of gaining advanced and comprehensive technical expertise.

2. Subjects, Credits and Period of Classes

The subjects and credits offered by each major in the master's program are detailed in the provided curricula tables (Attached Tables).

The standard amount of time required to earn 1 academic credit involves content for 45 hours of studying. This is calculated using the following criteria while taking into account the differences in education

effectiveness and the required studying time outside of lectures, which are dependent on class methods.

① Lectures: 15 hours of classes and 30 hours of preparation/review = 1 credit.

② Exercises (Seminars): 30 hours of classes and 15 hours of preparation/review = 1 credit

③ Experiments and Practical Training: 45 hours of classes = 1 credit

To ensure the quality and international applicability of the education provided at NUT, there will be 15 classes conducted for each subject, with classes conducted on holidays if required.

For details on each subject, please refer to the online version of the Syllabus (URL: https://www.nagaokaut.ac.jp/student/class/syllabus/index.html)

The period of classes is set by academic year. The academic year is divided into three terms; 1st term, 2nd term and 3rd term.

[Terms]

1st term: April 1 to August 31, 2nd term: September 1 to December 31, 3rd term: January 1 to March 31

Class Timetable will be posted at the beginning of the academic year and uploaded on our official website. Students are required to develop a study plan based on the Class Timetable.

(URL: https://www.nagaokaut.ac.jp/e/student/class/time-table/index.html)

3. Subject Registration

(1) The subjects will, in principle, be conducted strictly according to the curriculum for each academic year and major.

(2) Students must register for all subjects that they intend to take during the subject registration period at the start of the first term and second term in which each subject (including intensive lecture subjects) begins.

(3) At the start of each academic year, the Division of Academic Affairs will post Class Timetable on the university's official website.

(4) At the start of each school term, the Division of Academic Affairs will post a *Guide to Subject Registration*.

(5) Students must carefully refer to this Program Guide and the Class Timetable, develop a study plan with guidance from their academic supervisors, and register online for subjects based on the posted guides during the subject registration period for each term.

(6) Students must check the results of their subject registration application online during the subject registration period. After checking the subject registration results, students may (under guidance from their academic supervisors) make modifications, additions, or cancellations to the registered subjects if necessary. These changes must be recorded online during the registration revision period after subject registration.

(7) If a student must cancel registration for a subject due to an unavoidable reason after the registration revision period, the student must submit a *Subject Cancellation Form* to the Division of Academic Affairs.

(8) Although some intensive lecture subjects may have undecided class schedules during the subject registration period, students are still required to register for these subjects (as described in item [2] above) if they wish to take them. In these cases, a registration cancellation period will be provided, and students must follow the cancellation procedure if they no longer wish to take a subject. Students should take note of the registration cancellation procedure and period for intensive lecture subjects, which will be posted on notice boards, etc.

(9) Students are not allowed to take intensive lecture subjects with schedules that completely or partially overlap with other subjects. In such cases, students must cancel their registration for one of the overlapping subjects during the registration cancellation period. If students are found to have taken two subjects with overlapping schedules without cancelling their registration for one, they may be given a failing grade for both subjects.

(10) Please note that if a student has not cancelled registration for a subject and fails to attend classes or sit for an examination, the student will receive an automatic failure for that subject.

4. Examinations and Performance Evaluation

(1) In principle, final examinations will be conducted at the end of the school term to conclude the subject. However, examinations may also be conducted at other times at the discretion of the lecturer-in-charge, with these interim examinations taking the place of the final examination. In addition, some subjects may utilize daily evaluations or reports in place of the final examination.

(2) Students are evaluated using the following grades: S, A, B, C, and D, which are detailed below.

Grade	Achievement Level	Points	GP
S	Student has thoroughly fulfilled the academic objectives of the subject and has achieved outstanding results	90–100	4
A	Student has thoroughly fulfilled the academic objectives of the subject	80–89	3
B	Student has fulfilled the academic objectives of the subject	70–79	2
C	Student has fulfilled the minimal academic objectives of the subject	60–69	1
D	Student has not fulfilled the academic objectives of the subject	0–59	0

*GP (Grade Point) refers to the points obtained for each grade.

S, A, B, and C are considered passing grades.

(3) Students who pass the final examination of a subject will receive the prescribed credits for that subject. Credits that have already been acquired cannot be cancelled or modified by repeating the subject.

(4) The Grade Point Average (GPA) system has been implemented to provide an indicator that allows the comprehensive evaluation of academic achievement, as well as to conform to international grading evaluation schemes.

(5) The GPA is calculated using a credit-weighted average of the GP from all subjects taken by a student, regardless of pass/fail status. However, subjects that are unrelated to program completion are excluded from calculation. In cases where a student has prematurely dropped a subject or failed to sit for an examination, the student will receive a GP score of “zero” for that subject, but its credits shall still be included in the denominator for GPA calculation. GPAs are calculated to 2 decimal places.

(6) Students are to check their subject results online during the following periods: Middle of August for the first term, beginning of February of the subsequent year for the second term, and beginning of March for the third term. Students are to check the bulletin board for details along with the notice indicated in (7).

(7) The University has a grade appeal system for students when they have any concerns regarding evaluations/grades. Check the bulletin board for details, as students will need to fulfil conditions for application of grade appeal.

5. Subject Requirements

(1) Students must earn 30 credits or more to complete the master's program. Of these, a minimum of 24 credits shall be from the graduate-level subject offered in the relevant academic major. However, in special cases where permission has been granted by the academic supervisor, a portion of these 24 credits may be replaced by credits earned from graduate-level subjects in other majors. In these cases, students must consult with their academic supervisor and register graduate-level subject offered in other majors. Then the students must obtain approval from their academic supervisor. However, if the reason for taking subjects offered in other majors is just for interest and etc., registration of this subject is not approved. Subjects offered in System Safety Engineering are offered only for students in its major and students in other majors can not take these subjects.

(2) From among the 30 credits required for completing the master's program, 6 credits must be earned from Common Subjects.

(3) Subjects related to the Practical Study Project for master's students are available. Students can be awarded credits for seminars and experiment subjects by taking replacements for compulsory subjects available in the various majors.

6. On-Demand Classes

Students who are unable to attend classes (lecture subjects) due to off-campus dispatch or other assignments may complete all or part of the coursework through on-demand (asynchronous) classes.

The required conditions and procedure for on-demand classes are outlined below. Students who meet these conditions and wish to take on-demand classes are requested to apply using the stipulated procedure.

(1) Conditions for On-Demand Classes

On-demand classes will be permitted under the following conditions:

① Cases in which students are engaged in off-campus practical training as part of a regular subject (teaching practice, research internships, etc.)

② Cases in which students are conducting research activities at another institution under an "external research guidance" arrangement

③ Other cases in which on-demand classes are deemed necessary (limited to cases with truly compelling circumstances, excluding job hunting and extracurricular internships.)

(2) Subjects Available for On-Demand Classes

Subjects that offer on-demand classes are indicated with "□" in the Notes column of the curriculum tables.

(3) Application Procedure for On-Demand Classes

Students who wish to take on-demand classes must obtain permission from their academic supervisors and also submit an *Application for On-Demand Classes* to the Division of Academic Affairs when

applying for overseas dispatch subjects or external research guidance.

(4) Instructions for On-Demand Classes

Students taking on-demand classes should follow the instructions provided by the lecturer-in-charge.

*The *Application for On-Demand Classes* can be downloaded by accessing the LiveCampusU "Menu" → "Campus Info" → "School Shared Files".

7. Program Completion

(1) In order to complete the master's program, students must have been enrolled at the Graduate School of Engineering for a minimum of 2 years, earned the prescribed credits, undertaken the necessary research work, submitted their master's thesis, and passed the necessary thesis screening and final examination. However, with regard to the period of enrollment, students with particularly outstanding academic performance may be allowed to complete the program after being enrolled for only 1 year or more.

(2) The master's thesis must be submitted before the prescribed deadline during the student's enrollment period.

8. Application for Thesis Screening and Degree Conferral

Applications for thesis screening and degree conferral are to be conducted based on NUT's Degree Rules and the Regulations of Handling of Thesis/Dissertation Screening.

9. Miscellaneous Points

(1) For graduate-level subjects that are designated for a specific school year or term, students should, in principle, take those subjects during the designated school year or term. However, in special cases where students need to take a subject in a non-designated year or term, they must first obtain approval from their academic supervisor, and obtain permission from the President of NUT after submitting an *Application to Take Subject in Non-Designated Year* or *Application to Take Subject in Non-Designated Term*.

(2) For undergraduate-level subjects (limited to subjects where credits have yet to be acquired), the credits acquired will be recognized but will not count toward the credits required for completion of the master's program.

10. Credit Transfers

NUT has established credit transfer agreements with 7 universities/national institute of technology within Niigata prefecture and several other universities outside of the prefecture. These agreements allow students to take subjects and earn credits from the graduate schools of other universities.

11. Regarding the Administration of Undergraduates Taking Graduate-Level Subjects

Agreement for the Administration of Undergraduates Taking Graduate-Level Subjects

October 21, 2005
Approved by the Academic Affairs Committee

Undergraduate students at Nagaoka University of Technology (hereinafter referred to as "NUT") who wish to take graduate-level subjects offered in the first term of the master's program are subject to the following conditions:

(1) Undergraduate students may apply for these subjects if they are in their fourth year, and meet or exceed the eligibility criteria for each program; applicants will be generally limited to approximately 10% of the student body. Approval must be obtained from the respective Chair.

(2) The credits for the subjects taken will be limited to a total of 8 credits, with a maximum of 6 credits for Major Subjects and a maximum of 2 credits for Common Subjects. Students must obtain approval from the lecturer-in-charge of each subject. Applications to take these subjects may be rejected if the students have not taken the necessary preliminary subjects or if there are too many students in the class.

(3) Even if a student passes the final examinations of these subjects, the credits will not be recognized as undergraduate-level credits. However, if the student continues to graduate school at NUT and reports completion of the subject, the results will be accepted as graduate-level credits. Students who have taken the subjects as undergraduates and wish to re-take the subjects as graduate students must obtain permission from the lecturer-in-charge of the subjects prior to subject registration.

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Flow of the Subject-Taking and Grade-Processing Procedures

① Each Chair will issue an *Application for Undergraduate Students to Take Graduate-Level Subjects* to applying students that fulfill Agreement (1) as described above.

② As per Agreement (2), undergraduate students who wish to take graduate-level subjects must first obtain a permission seal (*kyoka-in*) from the lecturer-in-charge of the relevant subject, and then obtain approval from the Chair of the student's program of study before submitting the application to the Section of Student Affairs, Division of Academic Affairs. The Division of Academic Affairs will keep the original application and provide copies to the applying student, associated lecturers-in-charge, and the Chair.

③ The Division of Academic Affairs will distribute forms for the *Report on the Examination Results of Undergraduate Students Taking Graduate-Level Subjects* (which includes the student's name, etc.) to the associated lecturers-in-charge at the end of July.

④ The lecturers-in-charge will report the subject examination results of students described in ② at the end of the school term to the Division of Academic Affairs using the *Report on the Examination Results of Undergraduate Students Taking Graduate-Level Subject* forms (described in ③).

⑤ The Division of Academic Affairs will keep the *Report on the Examination Results of Undergraduate Students Taking Graduate-Level Subjects* received from the lecturers-in-charge, and distribute copies to the respective students and the leader of the student's program of study.

⑥ As per Agreement (3), after the student enters graduate school at NUT, students can submit the copy of the report described in ⑤ together with the *Report on the Results of Undergraduate Students Taking Graduate-Level Subjects* to the Division of Academic Affairs, and obtain acknowledgment of their results.

⑦ Based on the reports described in ⑥, the Division of Academic Affairs will process the results as results obtained in the student's first term of the first year in the master's program. Even if the reported subjects are not conducted in the student's first year in the master's program or the subjects have been discontinued, the results will still be recognized as grades from that subject in the first year.

⑧ As per the procedures conducted in ⑦, the results of these subjects will be included in the results notification for the student's first term of the master's program.

12. Acquisition of Teacher's License Certification

For information on acquisition of Teacher's License Certification, please refer to the Japanese version of the program guide.

Guide to Major Programs

(Master's Program in Engineering)

Mechanical Engineering

1. Education Objectives

The objective of this major is to develop leading engineers with advanced practical and creative abilities who can respond to the challenges of the machine industry and its related fields by utilizing the integrated education between the undergraduate and master's programs at NUT. This is accomplished by building a foundation of practical technical insight based on the expertise and fundamental scholastic abilities acquired from undergraduate studies and the Jitsumu-Kunren Internship experience. Major Subjects in this major are divided into the following 3 focuses: Mechatronics Engineering and Smart Factory, as well as Environment and Energy Engineering. Students will follow a sequential curriculum with the following education objectives:

(1) In-depth specialized expertise as mechanical engineers
(2) Ability to ascertain technological trends and information from a wide scope
(3) Practical ability to develop unique technologies to respond to advances in society
(4) Advanced research and development capabilities with international applications
(5) A sense of engineering ethics that takes into account people's safety, welfare, and health
(6) Ability to independently and continuously learn
(7) Internationally competent communication ability

2. Subject Organization

The subjects are composed of experimental/practical training subjects (compulsory), lecture subjects (compulsory) and lecture subjects (elective).

Experimental/practical training subjects, i.e., "Mechanical Engineering Special Practicals 1 and 2" and "Mechanical Engineering Seminars 1 to 4" are all compulsory subjects and will be conducted under each student's academic supervisor in their assigned research laboratory. For "Mechanical Engineering Special Practicals 1 and 2", each student will conduct research following experimental/research plans formulated through discussions with their academic supervisor. "Mechanical Engineering Seminars 1 to 4" are reading and discussion (journal club) sessions. In principle, these seminars will be conducted in the research laboratory of each student's academic supervisor throughout the 2 years of the master's program. There may be cases where the seminars are jointly conducted by two or more laboratories with similar specialties. "Research Integrity" is essential for understanding the concept of fairness in conducting research as a graduate student.

All lecture subjects (elective)are conducted based on each lecturer's field of study with a high degree of specialization. In addition to selecting the lecture subjects, the table below shows the associated field of study for each subject. The relationships between these subjects and corresponding undergraduate-level subjects are also shown to facilitate deeper understanding of the lectures. To avoid cases where students develop a limited scope and focus only on the subjects in their field, it is important for the students to independently and systematically select the subjects to take while considering their future personal applicability. Students are encouraged to select lecture subjects after careful discussions with their academic supervisors.

3. Research Work and Master's Thesis

The standard schedule for subject-taking and completion procedures for students who complete the program in

March is as follows:

(1) Research Laboratory Assignment

<NUT Graduates> After conclusion of the Jitsumu-Kunren Internship or the topic briefing session following the Thesis Research Project presentation (March (before enrollment))

<Non-NUT Graduates>

- Students who graduated from technical college advanced courses: after the informal decision for acceptance into the master's program (July (before enrollment))
- After the informal decision for acceptance into the master's program and consultation with the Chair or the intended academic supervisor (February to March (before enrollment))

(2) Schedule (For Students Completing in March)

[M1]

April: Deciding on the students' academic supervisors

April: Deciding on the research topic: students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

In M2, students will proceed with data collection and analysis using the established research methods, and consolidate their research findings in the master's thesis.

Students will receive research instruction from their academic supervisors on how to prepare their master's thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references approximately 1 to 4 times per month.

The interim presentation and assessment of the master's thesis will be conducted between November of M1 and May of M2.

The academic supervisors will provide guidance on presentation methods.

[M2]

April: Review of the research topic: students consult with their academic supervisors to review their research topics.

April to July: Review of the research plan: students will review their research plans together with their academic

supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

End of November to Early December: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

End of January to March: Submission of the master’s thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master’s thesis presentation

Master’s thesis screening and final examination

March: Graduation ceremony

(3) Schedule (For Students Enrolling in September and Completing in August)

[M1]

September: Deciding on the students’ academic supervisors

September: Deciding on the research topic: students consult with their academic supervisors to determine their research topics.

September to October: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

From September onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

In M2, students will proceed with data collection and analysis using the established research methods, and consolidate their research findings in the master’s thesis.

Students will receive research instruction from their academic supervisors on how to prepare their master’s thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references approximately 1 to 4 times per month.

The interim presentation and assessment of the master’s thesis will be conducted between November of M1 and May of M2.

The academic supervisors will provide guidance on presentation methods.

[M2]

September: Review of the research topic: students consult with their academic supervisors to review their

research topics.

September to October: Review of the research plan: students will review their research plans together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

End of April to Early May: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

Mid-June to Early July: Submission of the master’s thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master’s thesis presentation

Master’s thesis screening and final examination

August: Graduation ceremony

(4) Presentations at Scientific Conferences

Students are encouraged to present their master’s research content at scientific meetings and conferences in their field of study while they are enrolled at NUT.

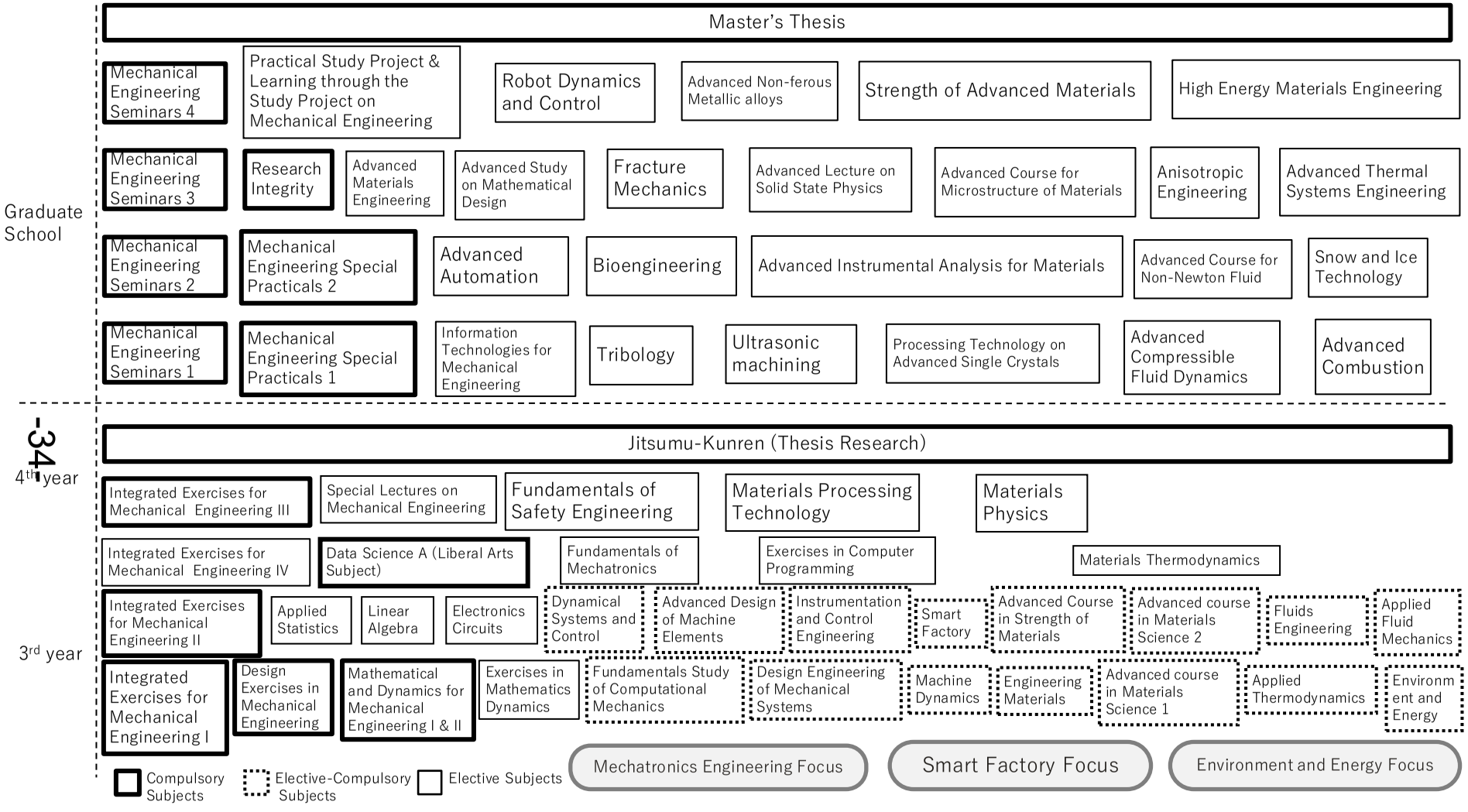
	Mechatronics Engineering Focus	Smart Factory Focus	Environment and Energy Focus
Bachelor's Program in Engineering (Elective-Compulsory・General Elective)	〔Common/General Subjects〕 Exercises in Mathematics and Dynamics, Exercises in Computer Programming, Applied Statistics, Linear Algebra, Electronic Circuits, Fundamentals of Mechatronics, Materials Thermodynamics, Integrated Exercises for Mechanical Engineering 4, Special Lectures on Mechanical Engineering, Fundamentals of Safety Engineering, Engineering Materials, Materials Physics, Materials Processing Technology		
	(Elective-Compulsory) Advanced Course in Strength of Materials, Machine Dynamics, Design Engineering of Machine Elements, Fundamental Study of Computational Mechanics, Instrumentation and Control Engineering, Dynamical Systems and Control	(Elective-Compulsory) Advanced course in Materials 1, Advanced course in Materials 2, Engineering Materials, Design Engineering of Mechanical Systems, Machine Dynamics, Design Engineering of Machine Elements, Smart factory	(Elective-Compulsory) Advanced course in Materials 1, Applied Thermodynamics, Applied Fluid Mechanics, Fluid Engineering, Environment and Energy

Master's Program in Engineering	〔Common Subjects〕 Advanced Mechanical Engineering, Information Technologies for Mechanical Engineering, Advanced Lecture on Solid State Physics、Advanced Instrumental Analysis for Materials, Advanced Course for Microstructure of Materials, Advanced non-ferrous metal materials, Strength of Advanced Materials, Anisotropic Engineering, Research Integrity		
	Advanced Automation, Advanced Study on Mathematical Design, Bioengineering Robot Dynamics and Control	Tribology, Advanced Construction Machinery Engineering, Fracture Mechanics, Ultrasonic machining, Processing Technology on Advanced Single Crystals	Advanced Combustion, Advanced Compressible Fluid Dynamics, Advanced Course for Non-Newton Fluid, Advanced Thermal Systems Engineering, High Energy Materials Engineering, Snow and Ice Technology

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Mechanical Engineering

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program **1st-2nd Grade**	Master' s Thesis Anisotropic Engineering (I), Information Technologies for Mechanical Engineering (I) **Mechatronics Engineering Focus:** Advanced Automation (I), Advanced Study on Mathematical Design (I), Bioengineering, Robot Dynamics and Control **Smart Factory Focus:** Tribology, Fracture Mechanics, Ultrasonic machining, Processing Technology on Advanced Single Crystals **Environment and Energy Focus:** Advanced Combustion, Advanced Compressible Fluid Dynamics (I), Advanced Course for Non-Newton Fluid, Advanced Thermal Systems Engineering, High Energy Materials Engineering, Snow and Ice Technology (I, S) Practical Study Project on Mechanical Engineering Learning through the Study Project on Mechanical Engineering Research Integrity	Master' s Thesis Advanced Lecture on Solid State Physics, Advanced Instrumental Analysis for Materials, Advanced Course for Microstructure of Materials, Advanced Non-Ferrous Metal Materials, Strength of Advanced Materials, Anisotropic Engineering (I), Information Technologies for Mechanical Engineering (I) Practical Study Project on Mechanical Engineering Learning through the Study Project on Mechanical Engineering Subjects of other majors	Master' s Thesis Advanced Mechanical Engineering, Mechanical Engineering Special Practicals 1 & 2, Mechanical Engineering Seminars 1 to 4 Practical Study Project on Mechanical Engineering Learning through the Study Project on Mechanical Engineering	Master' s Thesis Mechanical Engineering Special Practicals 1 & 2, Mechanical Engineering Seminars 1 to 4, Practical Study Project on Mechanical Engineering Learning through the Study Project on Mechanical Engineering Research Integrity

I: Information subject recommend to be taken, S: Safety subject recommended to be taken


Master's Thesis
Mechanical Engineering Seminars 4
Practical Study Project & Learning through the Study Project on Mechanical Engineering
Robot Dynamics and Control
Advanced Non-ferous Metallic alloys
Strength of Advanced Materials
High Energy Materials Engineering
Mechanical Engineering Seminars 3
Research Integrity
Advanced Materials Engineering
Advanced Study on Mathematical Design
Fracture Mechanics
Advanced Lecture on Solid State Physics
Advanced Course for Microstructure of Materials
Anisotropic Engineering
Advanced Thermal Systems Engineering
Graduate School
Mechanical Engineering Seminars 2
Mechanical Engineering Special Practicals 2
Advanced Automation
Bioengineering
Advanced Instrumental Analysis for Materials
Advanced Course for Non-Newton Fluid
Snow and Ice Technology
Mechanical Engineering Seminars 1
Mechanical Engineering Special Practicals 1
Information Technologies for Mechanical Engineering
Tribology
Ultrasonic machining
Processing Technology on Advanced Single Crystals
Advanced Compressible Fluid Dynamics
Advanced Combustion
-34-
Jitsumu-Kunren (Thesis Research)
4th year
Integrated Exercises for Mechanical Engineering III
Special Lectures on Mechanical Engineering
Fundamentals of Safety Engineering
Materials Processing Technology
Materials Physics
Integrated Exercises for Mechanical Engineering IV
Data Science A (Liberal Arts Subject)
Fundamentals of Mechatronics
Exercises in Computer Programming
Materials Thermodynamics
Integrated Exercises for Mechanical Engineering II
Applied Statistics
Linear Algebra
Electronics Circuits
Dynamical Systems and Control
Advanced Design of Machine Elements
Instrumentation and Control Engineering
Smart Factory
Advanced Course in Strength of Materials
Advanced course in Materials Science 2
Fluids Engineering
Applied Fluid Mechanics
3rd year
Integrated Exercises for Mechanical Engineering I
Design Exercises in Mechanical Engineering
Mathematical and Dynamics for Mechanical Engineering I & II
Exercises in Mathematics Dynamics
Fundamentals Study of Computational Mechanics
Design Engineering of Mechanical Systems
Machine Dynamics
Engineering Materials
Advanced course in Materials Science 1
Applied Thermodynamics
Environment and Energy
Compulsory Subjects
Elective-Compulsory Subjects
Elective Subjects
Mechatronics Engineering Focus
Smart Factory Focus
Environment and Energy Focus

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term 1	1st Year to 2nd Year Term 2	1st Year to 2nd Year Term 3	Lecturer-in-Charge	Notes
Compulsory	Mechanical Engineering Seminars 1	1	●			Staff	① A
	Mechanical Engineering Seminars 2	1		●		Staff	① A
	Mechanical Engineering Seminars 3	1	●			Staff	② A
	Mechanical Engineering Seminars 4	1		●		Staff	② A
	Mechanical Engineering Special Practicals 1	2	●			Staff	① A K
	Mechanical Engineering Special Practicals 2	2		●		Staff	① A K
	Research Integrity	1	●*	●*		<1st Term> Chair, ※ Ito(Y) <2nd Term> Chair, ※ Sato (K)	① *Classes are held in Japanese in the first term and English in the second term. Students must take either of these classes.
	Total	9					
Elective	Advanced Mechanical Engineering	2	●			Chair	☐
	Information Technologies for Mechanical Engineering	2	●			Wei	I
	Robot Dynamics and Control	2	●			Endo	● ☐
	Advanced Automation	2		●		Kobayashi (Y)	☆ A ☐ I K
	Processing Technology on Advanced Single Crystals	2		●		Aida	① K
	Tribology	2		●		Ohta & Taura	☐ K
	Advanced Construction Machinery Engineering	2		●		Abe (M)	O K ★
	Ultrasonic machining	2	●			Isobe (H)	A ☐ K
	Snow and Ice Technology	2	●*	●		Kamimura (S) & Sugihara	A ★ ☐ I K S *Classes are held in English in the first term during odd-numbered years according to the Reiwa Calendar.
	Advanced Combustion	2	●			Suzuki (M)	☐ K Students who have earned credits for Advanced Thermal Engineering cannot take this subject.
	Advanced Compressible Fluid Dynamics	2		●		Yamazaki (W)	★ ☐ I K
	Advanced Course for Non-Newton Fluid	2	●			Takahashi (T)	A ● K
	Advanced Thermal Systems Engineering	2		●		Yamada (N)	★ ☐ K Students who have earned credits for Radiative Heat Transfer and Solar Energy Engineering cannot take this subject.
	High Energy Materials Engineering	2	●			Katsumi	★ ☐
	Advanced Non-Ferrous Metal Materials	2		●		Homma (T)	★ ☐ K

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Elective	Fracture Mechanics	2		●		Miyashita (Y)	A ◎ ■ K
	Strength of Advanced Materials	2		●		Miyashita (Y) & Otsuka (Y)	☆ ■ K
	Advanced Instrumental Analysis for Materials	1	●			Suzuki(Tsu),Tanaka(K),Matsubara, Homma(To),Tanaka(S) & Dung	① ★ ☐
	Advanced Course for Microstructure of Materials	2	●			Nanko	☐ K
	Advanced Study on Mathematical Design	2		●		Kurahashi	★ ☐ I
	Advanced Lecture on Solid State Physics	2		●		Takeda	A ● ☐ K
	Anisotropic Engineering	2		●		Nakayama	E A ☐ I K
	Bioengineering	2	●			Shoji	★
	Total	45					

1) In the "lecturer-in-charge" column, ※ indicates an adjunct lecturer and ( ) indicates that the lecturer is undecided

【Symbols in the Notes Column】

①: Recommended to be taken in the first year of the Master's Program
②: Recommended to be taken in the second year of the Master's Program
E: Conducted during even-numbered years according to the Reiwa Calendar
O: Conducted during odd-numbered years according to the Reiwa Calendar
◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the Reiwa Calendar
☆: Conducted in English
★: Conducted in both Japanese and English
A: Can be conducted in English for SDG Professional Course students
☐ : Subject Available for On-Demand Classes
■: Due to content overlap, "Fracture Mechanics" and "Strength of Advanced Materials" cannot be taken together.
I: Information subject recommended to be taken
K: Industry-Associated Subject for Teacher's License Certification
S: Safety subject recommended to be taken

○ Mechanical Engineering recommends the following major subjects from other majors.

Mechanical Engineering - Recommended Subjects

Recommended major of Mechanical Engineering - Discipline Name	Electrical, Electronics and Information Engineering	Materials Science and Engineering/Bioengineering	Civil and Environmental Engineering
Mechatronics Engineering	Statistical Signal Processing	Advances in cell motility	
Smart Factory	Mathematical and Data Science	Electric Properties of Solids Advanced Molecular	Advanced Structural Analysis
Environment and Energy Engineering	Advanced Power Electronics	Electric Properties of Solids Advanced Molecular Genetics	Advanced Hydraulics Advanced Environmental Information Survey Engineering

Electrical, Electronics and Information Engineering

1. Education Objectives

Through the implementation of NUT's fundamental principle of providing an integrated education between the undergraduate and master's programs, the objective of this major is to provide an advanced education and research guidance in multidisciplinary fields in order to nurture the development of practical leading engineers who are able to contribute to society after graduation. This major has established 3 focuses linked with the 3 corresponding focuses offered at the undergraduate level: Electric Energy and Control Engineering Focus; Electronic Devices and Light Wave Control Engineering Focus; and the Information, Telecommunication and Control Focus.

The various focuses allow for comprehensive study: the Electric Energy and Control Engineering Focus addresses new technologies for energy generation, transport, control, systems, and associated new materials; the Electronic Devices and Light Wave Control Engineering Focus addresses semiconductor devices, optical devices, high-performance electronic devices, and the associated applied technologies; and the Information, Telecommunication and Control Focus addresses advanced telecommunication and transmission technologies for multimedia communication and ubiquitous networking, as well as information processing and measurement technologies associated with human communications.

2. Subject Organization

The specialized education subjects, credits, course terms, and lecturers-in-charge of this major are shown in the Attached Table.

(1) When choosing elective subjects, students are encouraged to refer to the Program Guide and seek guidance from their academic supervisor.

(2) The "Advanced Experiments on Seminar on Electrical, Electronics and Information Engineering" subjects cover the advanced experiments required to start research in the master's program. In principle, the subject is conducted by each student's academic supervisor.

(3) The "Seminar on Electrical, Electronics and Information Engineering" subjects enable the acquisition of wide comprehensive knowledge related to each student's research topic and associated fields. Classes are conducted as journal clubs under the supervision of all major academic staff.

However, please note the following with regarding to taking the seminar subjects:

- There are 4 seminar subjects, which in principle should be taken sequentially. (However, students who enroll in September will take Seminar 1 in the second term)
- In principle, students are allowed to take only 1 seminar subject per term.
- Students intending to take more than 1 seminar subject in a single term must obtain approval from their academic supervisor and the major administrators.

(4) The subjects specialized in the information technology in the Master's Program which are indicated "I" in the column of remarks in the Attached Table are recommended to take.

3. Research Work and Master's Thesis

The master's thesis will be based on the consolidated results of research conducted over the 2 years of the

master's program under the research guidance of the academic supervisor. The acceptance or rejection of each thesis will be evaluated based on strict screening criteria, such as the incorporation of creative ideas and original experimental results.

The standard schedule for subject-taking and completion procedures is as follows:

(1) Research Laboratory Assignment

<NUT Graduates> Second term of the third undergraduate year

<Non-NUT Graduates> After enrolling to the master's program

(2) Schedule (For Students Enrolling in April and Completing in March)

Master's Program, First Year

April: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

April to June: Submission of the Research Plan

Students will develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

March: Interim presentation and assessment of the master's thesis (2 examiners)

Master's Program, Second Year

April: Review of the research topic

Students consult with their academic supervisors to review their research topics.

April to June: Submission of the Research Plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

November: Preliminary screening of the master's thesis

End of November to Early December: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

End of January to the Beginning of March: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master's thesis presentation

Master's thesis screening and final examination

(3) Schedule (For Students Enrolling in September and Completing in August)

Master's Program, First Year

September: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

September to October: Submission of the Research Plan

Students will develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From September onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

August: Interim presentation and assessment of the master's thesis (2 examiners)

Master's Program, Second Year

September: Review of the research topic

Students consult with their academic supervisors to review their research topics.

September to October: Submission of the Research Plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From September onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

April: Preliminary screening of the master's thesis

Mid-May: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

Mid-June to the Beginning of July: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master's thesis presentation

Master's thesis screening and final examination

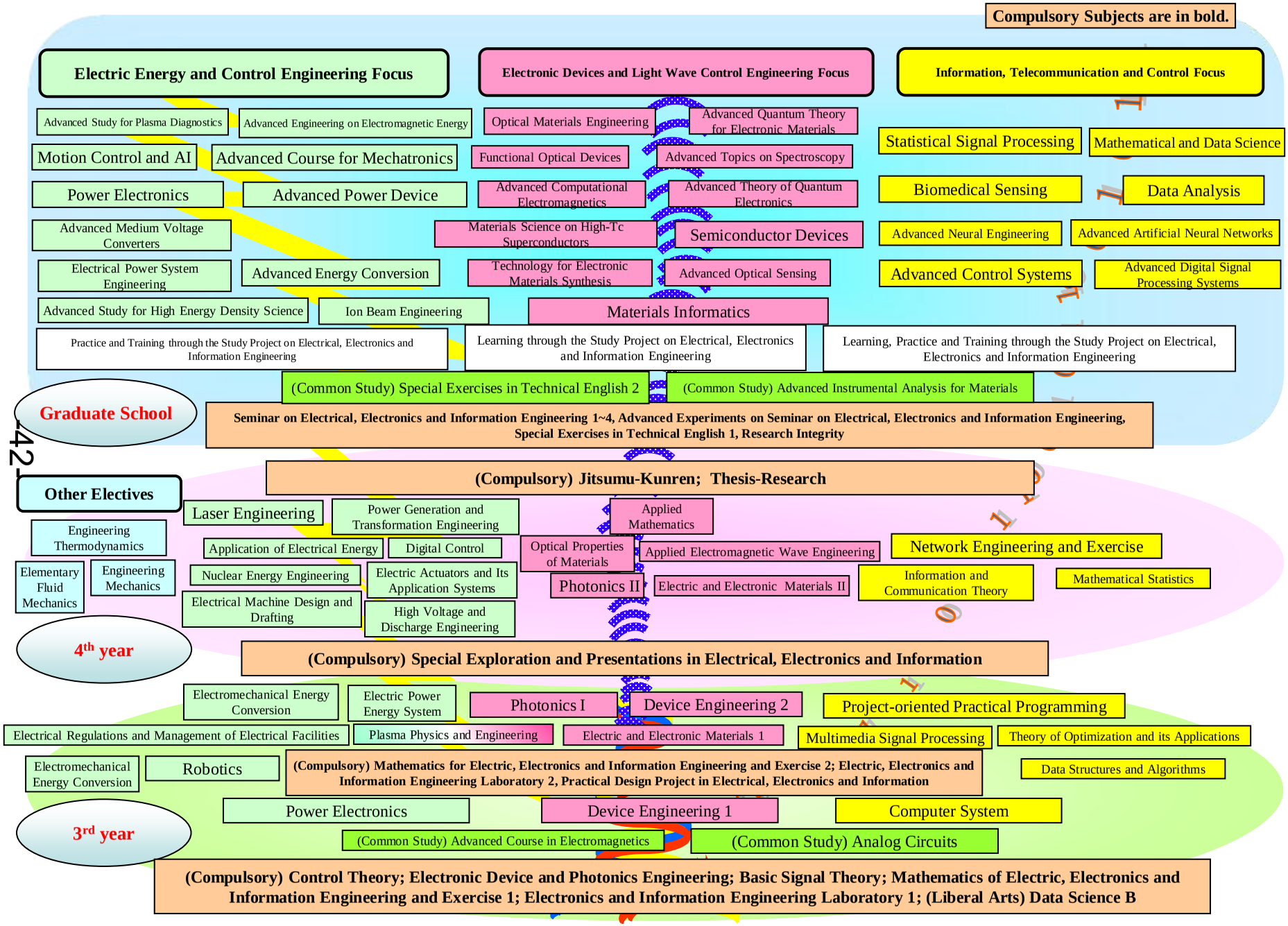
(4) Presentations at Scientific Conferences

Students are encouraged to present their master's research content at scientific meetings and conferences in their field of study while they are enrolled at NUT.

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Electrical, Electronics and Information Engineering

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program 1st-2nd Grade	Master's Thesis **Electric Energy and Control Engineering Focus:** Motion Control and AI (Information subject recommended to be taken), Advanced Engineering on Electromagnetic Energy, Advanced Course for Mechatronics (Safety subject recommended to be taken), Power Electronics, Advanced Power Device, Advanced Medium Voltage Converters (Safety subject recommended to be taken), Advanced Study for High Energy Density Science, Advanced Study for Plasma Diagnostics, Electrical Power System Engineering, Advanced Energy Conversion, Ion Beam Engineering **Electronic Devices and Light Wave Control Engineering Focus:** Materials Science on High-Tc Superconductors, Semiconductor Devices, Advanced Theory of Quantum Electronics, Optical Materials Engineering, Technology for Electronic Materials Synthesis, Advanced Quantum Theory for Electronic Materials, Advanced Topics on Spectroscopy, Materials Informatics (Information subject recommended to be taken), Functional Optical Devices, Advanced Computational Electromagnetics (Information subject recommended to be taken), Advanced Optical Sensing **Information Telecommunication and Control Focus:** Statistical Signal Processing (Information subject recommended to be taken), Mathematical and Data Science (Information subject recommended to be taken), Advanced Artificial Neural Networks (Information subject recommended to be taken), Advanced Digital Signal Processing Systems (Information subject recommended to be taken), Advanced Neural Engineering, Biomedical Sensing, Data Analysis (Information subject recommended to be taken), Advanced Control Systems Advanced Instrumental Analysis for Materials, Advanced Experiments on Seminar on Electrical, Electronics and Information Engineering, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering, Learning through the Study Project on Electrical, Electronics and Information Engineering, Learning, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering Research Integrity	Master's Thesis Seminar on Electrical, Electronics and Information Engineering I~IV, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering, Learning through the Study Project on Electrical, Electronics and Information Engineering, Learning, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering Subjects of other majors	Master's Thesis Seminar on Electrical, Electronics and Information Engineering I~IV, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering, Learning through the Study Project on Electrical, Electronics and Information Engineering, Learning, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering	Master's Thesis Seminar on Electrical, Electronics and Information Engineering I~IV, Special Exercises in Technical English 1, Special Exercises in Technical English 2, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering, Learning through the Study Project on Electrical, Electronics and Information Engineering, Learning, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering Research Integrity

Electrical, Electronics and Information Engineering Program – Subject Organizational Diagram



Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective		Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Compulsory		Seminar on Electrical, Electronics and Information Engineering 1	1	●	(●)		Staff	① A
		Seminar on Electrical, Electronics and Information Engineering 2	1	(●)	●		Staff	① A
		Seminar on Electrical, Electronics and Information Engineering 3	1	●	(●)		Staff	② A
		Seminar on Electrical, Electronics and Information Engineering 4	1	(●)	●		Staff	② A
		Advanced Experiments on Seminar on Electrical, Electronics and Information Engineering	3	●	(●)†		Staff	① A K
		Special Exercises in Technical English 1	1	●			Jiang, Sasaki (Toru) & Li	★
		Research Integrity	1	●*	●*		<1st Term> Chair, ※ Uchitomi <2nd Term> Chair, ※ Sato (K)	① *Classes are held in Japanese in the first term and English in the second term. Students must take either of these classes.
		Total	9					
Elective	Electric Energy and Control Engineering	Motion Control and AI	2		●		Yokokura & ※Ohishi	E I A K
		Advanced Engineering on Electromagnetic Energy	2		●		Jiang & Sugai	A K
		Advanced Course for Mechatronics	2		●		Miyazaki & Juan Padron	O ★ ☐ K S
		Advanced Power Electronics	2	●			Itoh (J)	O A ☐ K Students who have earned credits for Energy Conversion and Control Engineering cannot take this subject.
		Advanced Power Device	2	●			※Ueno, ※Nakazawa, ※Onozawa, ※Yamazaki & ※Fujishima	O ★
		Advanced Medium Voltage Converters	2	●			※Tamate, ※Kaneko, ※Okuma, & ※Toba	E ★ S
		Advanced Study for High Energy Density Science	2		●		Kikuchi	O A ☐ K
		Advanced Study for Plasma Diagnostics	2	●			Sasaki (Toru)	★ A ☐ K
		Electrical Power System Engineering	2	●			Miura	O A K
		Advanced Energy Conversion	2		●		Kusaka	O ★ ☐
		Ion Beam Engineering	2		●		Takahashi (Kazumasa)	E ★ ☐
	Electronic Devices and Light Wave Control Engineering	Materials Science on High-Tc Superconductors	2	●			( )	O ★ A ☐ K
		Semiconductor Devices	2		●		Unuma	E A ☐ K
		Advanced Theory of Quantum Electronics	2		●		Sasaki (Tom)	A ☐ K
		Optical Materials Engineering	2		●		Ono	A ☐ K
		Technology for Electronic Materials Synthesis	2	●			Okamoto (T)	A ☐ K
		Advanced Quantum Theory for Electronic Materials	2	●			Kato (A)	A K
		Advanced Topics on Spectroscopy	2	●			Tanaka (K)	A ☐ K
		Materials Informatics	2		●		Yamashita(To)	A ☐ I K
		Functional Optical Devices	2		●		Kimura (M)	E A ☐ K
		Advanced Computational Electromagnetics	2		●		Tamayama	A ☐ I K
		Advanced Optical Sensing	2		●		Sakamoto	★ ☐

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective		Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Elective	Information Telecommunication and Control	Statistical Signal Processing	2	●			Iwahashi	E A ☐ I K Students who have earned credits for Advanced Course of Digital Image Processing cannot take this subject.
		Mathematical and Data Science	2		●		Manada	E A ☐ I K
		Advanced Artificial Neural Networks	2	●			Tsubone	A ☐ I K Students who have earned credits for Advanced Engineering for Nonlinear Circuit cannot take this subject.
		Advanced Digital Signal Processing Systems	2	●			Sugita	O A ☐ I K
		Advanced Neural Engineering	2		●		Nambu	A ☐ K
		Biomedical Sensing	2		●		Hirasawa	O ☐
		Data Analysis	2		●		Harakawa	E ★ ☐ I
		Advanced Control Systems	2	●			Toyoda	E ☐
	Common	Advanced Instrumental Analysis for Materials	1	●			Suzuki(Tsu), Tanaka(S), Tanaka(K), Homma(To), Matsubara & Dung	① ★ ☐
		Special Exercises in Technical English 2	1		●		Jiang & Drier	★
		Total	62					

1) In the "lecturer-in-charge" column, ※ indicates an adjunct lecturer and ( ) indicates that the lecturer is undecided
2) In the “term” column, † indicates that master's students who participate in "Practice and Training through the Study Project on Electrical, Electronics and Information Engineering" in the first term of their first year must immediately take “Advanced Experiments on Seminar on Electrical, Electronics and Information Engineering” in the following term.

【Symbols in the Notes Column】

①: Recommended to be taken in the first year of the Master's Program
②: Recommended to be taken in the second year of the Master's Program
E: Conducted during even-numbered years according to the Reiwa Calendar
O: Conducted during odd-numbered years according to the Reiwa Calendar
◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the-Reiwa Calendar
☆: Conducted in English
★: Conducted in both Japanese and English
A: Can be conducted in English for SDG Professional Course students
☐: Subject Available for On-Demand Classes
I: Information subject recommended to be taken
K: Industry-Associated Subject for Teacher's License Certification
S: Safety subject recommended to be taken

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes

○ Students in the Electrical, Electronics and Information Engineering are recommended to take the following subjects from other majors
The following are recommended for each of the disciplines

This is to provide an education that links related disciplines to cultivate thinking methods with a flexible and wide perspective on the research conducted during the Jitsumu-Kunren experience in the undergraduate program and front-line research.

Electric Energy and Control Engineering Discipline

Advanced Automation (Mechanical Engineering)

Electronic Devices and Light Wave Control Engineering Discipline
Advanced Lecture on Solid State Physics (Mechanical Engineering)

○ Due to content overlap, the following subjects cannot be taken together:
・Advanced Engineering on Electromagnetic Energy and Advanced Engineering on Radiation Physics (Nuclear Technology)

Information and Management Systems Engineering

1. Education Objectives

The objective of this major is to develop leading engineers/researchers/managers who have the practical abilities to research and develop creative information technologies and management models; as well as actualize new products, systems, services, and businesses in order to play an active role at the international level and contribute to the safety and the sustainable development of society.

2. Subject Organization

The specialized education subjects, credits, course terms, and lecturers-in-charge of this major are shown in the Attached Table.

Building on fundamental undergraduate-level knowledge and skills associated with information and management systems, this major will facilitate the acquisition of advanced specialized knowledge and skills in students, as well as develop comprehensive practical abilities within the 3 groups of subjects; Applied Informatics subjects; Data Science subjects; and Management System subjects. The major will also integrate experiments, practical training, and seminars.

3. Research Work and Master's Thesis

The standard schedule for subject-taking and completion procedures for students who complete the program in March is as follows:

(1) Research Laboratory Assignment

<NUT Graduates> Second term of the third undergraduate year

<Non-NUT Graduates> After matriculating to the master's program

(2) Schedule (For Students Completing in March)

M1

April: Deciding on the students' academic supervisors

April: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and

data analyses approximately 1 to 4 times per month.

Students will receive instruction from their academic supervisors on how to prepare their master's thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references.

M2

April: Review of the research topic

Students consult with their academic supervisors to review their research topics.

April to July: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

July to August: Interim presentation and assessment. The academic supervisors will provide guidance on presentation methods.

November: Preliminary screening of the master's thesis

End of November to Early December: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

End of January to March: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master's thesis presentation

Master's thesis screening and final examination

(3) Schedule (For Students Enrolling in September and Completing in August)

M1

September: Deciding on the students' academic supervisors

September: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

September to October: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From Septemberonwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

Students will receive instruction from their academic supervisors on how to prepare their master's thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references.

M2

September: Review of the research topic

Students consult with their academic supervisors to review their research topics.

September to October: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

December to January: Interim presentation and assessment. The academic supervisors will provide guidance on presentation methods.

March to April: Preliminary screening of the master's thesis

Early April to Mid-May: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

Mid-June to Early July: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master's thesis presentation

Master's thesis screening and final examination

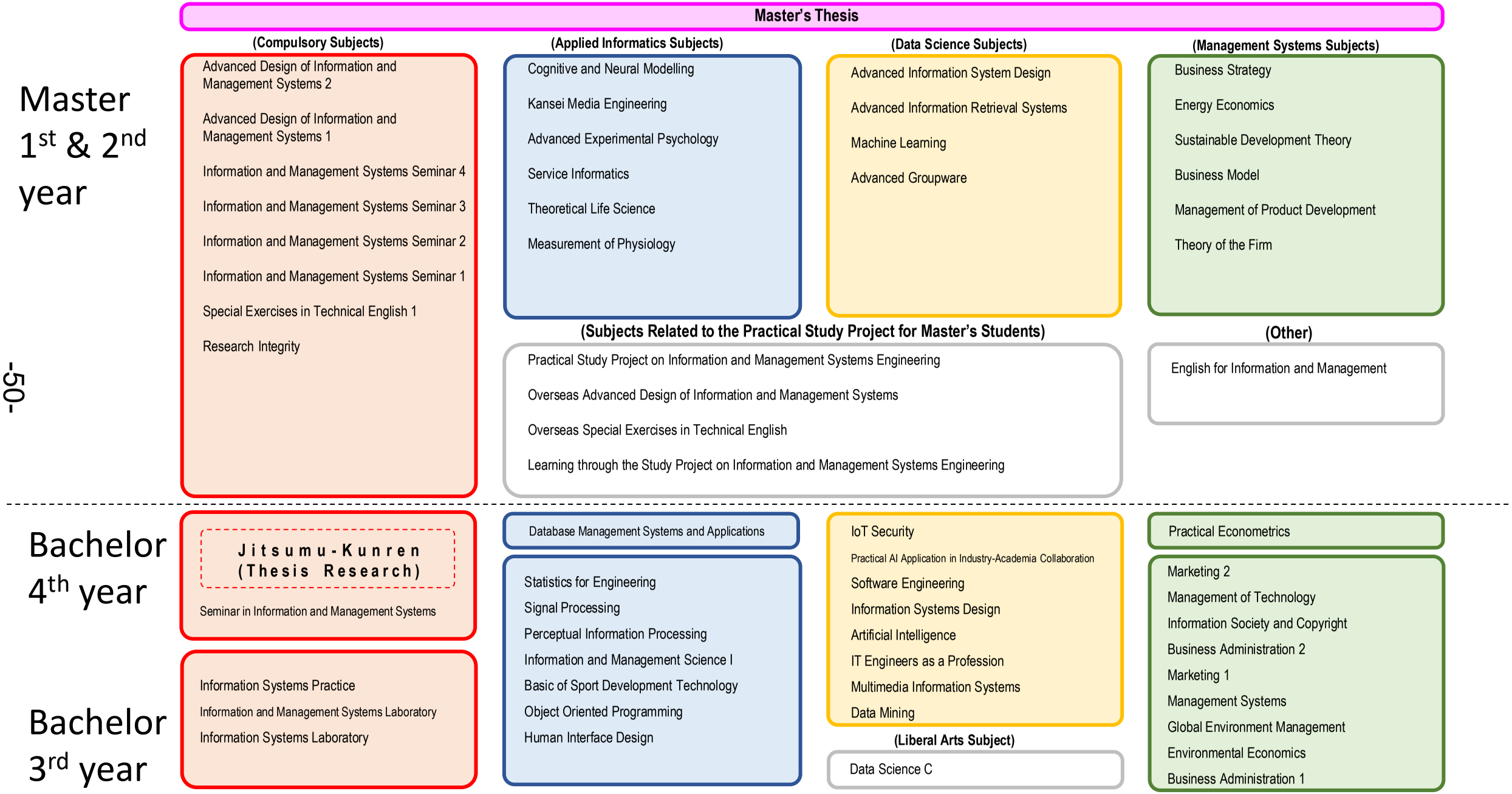
(4) Presentations at Scientific Conferences

Students are encouraged to present their master's research content at conferences in their field of study while they are enrolled at NUT.

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Information and Management Systems Engineering

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program **1st-2nd Grade**	Master's Thesis **Applies Informatics Subjects:** Measurement of Physiology, Theoretical Life Science, Service Informatics, Advanced Experimental Psychology, Kansei Media Engineering, Cognitive and Neural Modelling **Data Science Subjects (Information subject recommended to be taken):** Machine Learning, Advanced Information Retrieval Systems, Advanced Groupware, Advanced Information System Design **Management Systems Subjects:** Theory of the Firm, Business Strategy, Management of Product Development, Business Model, Sustainable Development Theory (Safety subject recommended to be taken), Energy Economics (Safety subject recommended to be taken), Practical Study Project on Information and Management Systems Engineering, Overseas Advanced Design of Information and Management Systems, Learning through the Study Project on Information and Management Systems Engineering Research Integrity	Master's Thesis Information and Management Systems Seminar 1~4, Advanced Design of Information and Management Systems 1~2, Special Exercises in Technical English 1, Practical Study Project on Information and Management Systems Engineering, Overseas Advanced Design of Information and Management Systems, Learning through the Study Project on Information and Management Systems Engineering Subjects of other majors	Master's Thesis Practical Study Project on Information and Management Systems Engineering, Overseas Advanced Design of Information and Management Systems, Learning through the Study Project on Information and Management Systems Engineering	Master's Thesis Information and Management Systems Seminar 1~4, Advanced Design of Information and Management Systems 1~2, Special Exercises in Technical English 1, English for Information and Management, Practical Study Project on Information and Management Systems Engineering, Overseas Advanced Design of Information and Management Systems, Overseas Special Exercises in Technical English, Learning through the Study Project on Information and Management Systems Engineering Research Integrity

Information and Management Systems Engineering (Master's Program)



Information and Management Systems Engineering – Subject Organization Diagram

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective		Subject Name	Credits	1st Year to 2nd Year Term 1	1st Year to 2nd Year Term 2	1st Year to 2nd Year Term 3	Lecturer-in-Charge	Notes
Compulsory	Experimental/ Practical Training	Information and Management Systems Seminar 1	1	●			Staff	① A
		Information and Management Systems Seminar 2	1		●		Staff	① A
		Information and Management Systems Seminar 3	1	●			Staff	② A
		Information and Management Systems Seminar 4	1		●		Staff	② A
		Advanced Design of Information and Management Systems 1	2	●			Staff	① A
		Advanced Design of Information and Management Systems 2	2		●		Staff	① A
		Special Exercises in Technical English 1	1	●			Jiang, Sasaki (Toru) & Li	① ★
		Research Integrity	1	●*	●*		<1st Term> Chair, ※ Shionoya <2nd Term> Chair, ※ Sato (K)	① *Classes are held in Japanese in the first term and English in the second term. Students must take either of these classes.
		Total	10					
Elective	Applied Informatics	Measurement of Physiology	2	●			Nomura	A
		Theoretical Life Science	2	●			Nishiyama	A ☐ I
		Service Informatics	2	●			Nakahira	A ☐ I Students who have earned credits for Decision Behavior Theory cannot take this subject.
		Advanced Experimental Psychology	2	●			Akimoto	★
		Kansei Media Engineering	2		●		Oiwa	★ ☐ Students who have earned credits for Advanced Cognitive Science cannot take this subject.
		Cognitive and Neural Modelling	2		●		Doi	A Students who have earned credits for Human Behaviour and Data Mining cannot take this subject.
	Data Science	Machine Learning	2		●		Kumoi	A ☐ I
		Advanced Information Retrieval Systems	2		●		Yukawa	A ☐ I
		Advanced Groupware	2	●			Hayama	A I
		Advanced Information System Design	2			●	※Mukai	I

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective		Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Elective	Management System	Theory of the Firm	2	●			Watahiki	O A
		Business Strategy	2		●		Watahiki	A
		Management of Product Development	2	●			Suzuki (N)	A
		Business Model	2	●			※Ishikawa	
	Management System	Sustainable Development Theory	2	●			Li	O ☐ S
		Energy Economics	2	●			Li	E A ☐ S
	Other	English for Information and Management	2		●		Nishiyama & Ohashi	★ ☐
		Total	34					

1) ※ in the lecturer-in-charge column indicates an adjunct lecturer, and ( ) indicates that the lecturer is undecided

【Symbols in the Notes Column】

①: Recommended to be taken in the first year of the Master's Program
②: Recommended to be taken in the second year of the Master's Program
E: Conducted during even-numbered years according to the Reiwa Calendar
O: Conducted during odd-numbered years according to the Reiwa Calendar
◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the Reiwa Calendar
☆: Conducted in English
★: Conducted in both Japanese and English
A: Subject available for SDG Professional Course students upon application. For students taking this subject, please confirm with the lecturers-in-charge regarding the time and place of classes
☐: Subject Available for On-Demand Classes
I: Information subject recommended to be taken
S: Safety subject recommended to be taken

○Information and Management Systems Engineering recommends the following major subjects from other majors.

In addition to the major subjects offered by Information and Management Systems Engineering, students are also recommended to take the following specialized subjects from the other majors described below. If students determine that the subject(s) below are necessary for their own research/ studies, they should take the subject(s) after discussions with their academic supervisor. These subjects will be regarded as equivalent to the elective subjects offered in Information and Management Systems Engineering.

• Civil and Environmental Engineering
  Transportation Network Analysis by Big Data

Materials Science and Bioengineering

1. Education Objectives

The Materials Science and Bioengineering major aims to develop engineers who can learn, integrate, and implement the following two approaches: the materials science approach to artificially control the structures of the finite varieties of atoms and compounds through combinations and interactions in order to create new materials, as well as the bioengineering approach to discover the engineering applications of biological functions that comprise complex, diverse, and multilevel systems. This major offers a creative educational curriculum that emphasizes the comprehensive acquisition of knowledge on materials science and biotechnology, undertaking of creative research through participation in research projects, and cultivation of the presentation skills needed to make strong impressions when communicating one's research results to an international audience.

This major aims to develop leading engineers and researchers who can succeed internationally and contribute to society's sustainable development; are able to apply information technology to research and development as well as the reformation of production processes; and possess the practical abilities to engage in problem solving in the development of cutting-edge materials that play crucial roles in future creative industries, social changes, the environment, health care, long-term care, and agriculture. In order to develop engineers needed by society with the abilities to tackle these various challenges, teachers in this major are organized into three groups (Resource Utilization Engineering Group, Biological and Environmental Engineering Group, and Materials Creation Engineering Group) and are in charge of subjects that enable students to gain a wide range of expertise in these fields.

2. Subject Organization

The lectures, seminars, and experiment subjects offered in this major are designed to facilitate the acquisition of comprehensive specialized knowledge. The specialized engineering subjects in this major are shown in the Attached Table.

"Advanced Experiments of Materials Science and Bioengineering I and II" are conducted under the guidance of each student's academic supervisor in their laboratories.

"Seminar on Materials Science and Bioengineering I to IV", which are journal clubs and/or research discussions, are conducted under the guidance of each student's academic supervisor over the two-year period of the master's program. Although these subjects are, in principle, conducted in each academic supervisor's laboratory, there may be cases where they are jointly conducted by two or more laboratories with similar specialties. If necessary, "Expert Seminar on Materials Science and Bioengineering I" and "Expert Seminar on Materials Science and

Bioengineering II" may be used to replace the credits from two subjects from "Seminar on Materials Science and Bioengineering I to IV".

"Research Integrity" must be taken in either the first or second term.

3. Research Work and Master's Thesis

The master's thesis will be based on the consolidated results of research conducted over the two-year period of the master's program under the guidance of the academic supervisor. The acceptance or rejection of each thesis will be evaluated based on strict screening criteria, such as the incorporation of creative ideas and formulation of conclusions with rigorous scientific basis.

The standard schedule for subject-taking and completion procedures for students who complete the program in March is as follows: (This also applies to students who complete the program in August (students who enroll in September).)

Master's Program, First Year

April to May: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors. At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate. The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month. The academic supervisors will also provide guidance on presentation methods.

In M2, students will proceed with data collection and analysis using the established research methods, and consolidate their research findings in the master's thesis. Students will receive research instruction from their academic supervisors on how to prepare their

master's thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references approximately 1 to 4 times per month.

December to January: Interim presentation and assessment

Master's Program, Second Year

April to May: Review of the research topic

Students consult with their academic supervisors to review their research topics.

April to July: Review of the research plan

Students will review their research plans together with their academic supervisors. At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

Early December: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

Submission of the thesis summary (approximately 300 Japanese characters or 100 English words) to the academic supervisor

End of January to March: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

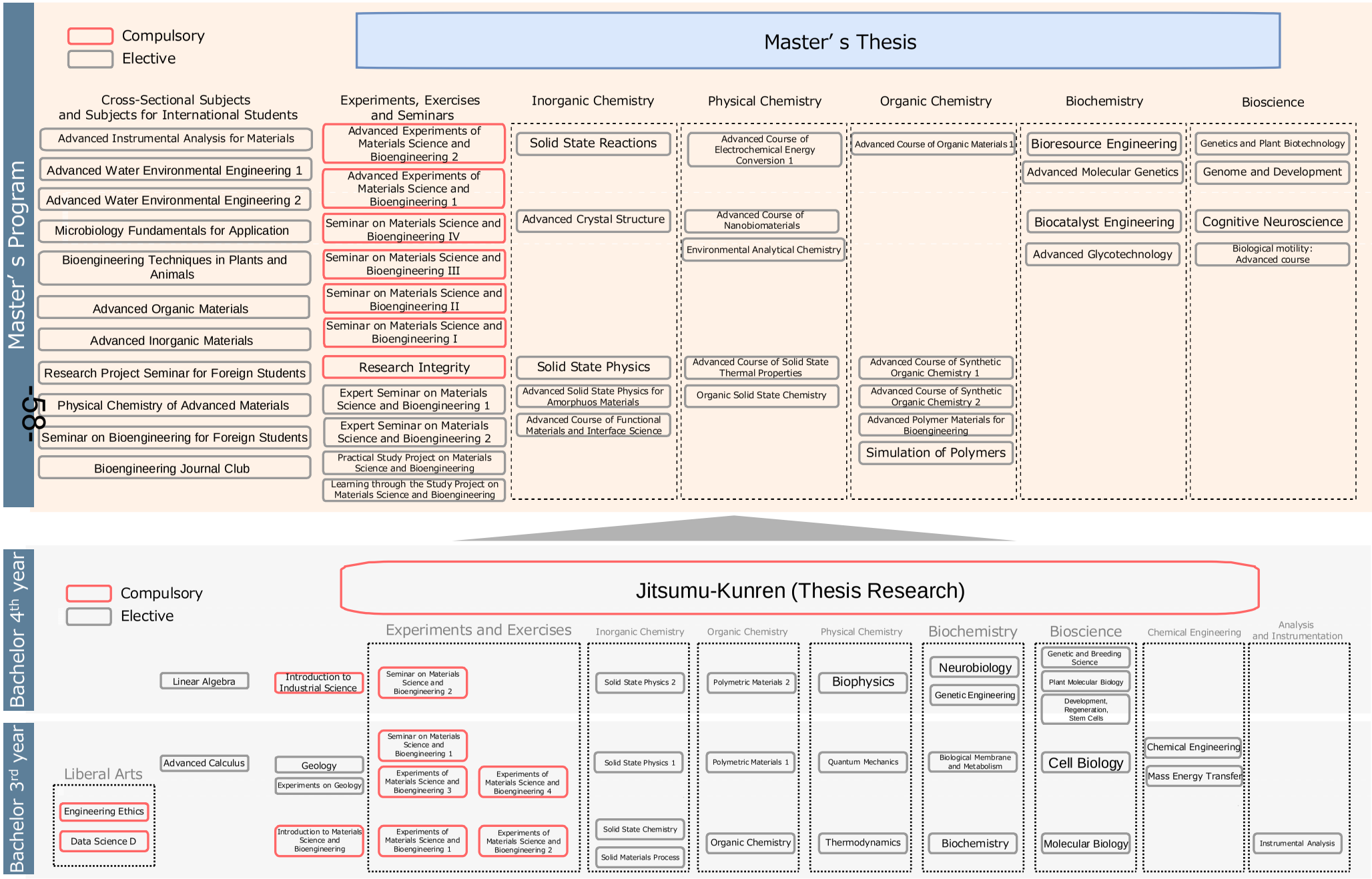
Master's thesis presentation

Master's thesis screening and final examination

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Materials Science and Bioengineering

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master' s Program **1st-2nd Grade**	Master's Thesis Solid State Reactions, Advanced Crystal Structure, Solid State Physics, Advanced Solid State Physics for Amorphuos Materials, Advanced Course of Functional Materials and Interface Science, Advanced Course of Electrochemical Energy Conversion 1, Advanced Course of Nanobiomaterials, Environmental Analytical Chemistry (Safety subject recommended to be taken), Advanced Course of Solid State Thermal Properties, Organic Solid State Chemistry, Advanced Course of Organic Materials 1, Advanced Course of Synthetic Organic Chemistry 1, Advanced Course of Synthetic Organic Chemistry 2, Advanced Polymer Materials for Bioengineering, Simulation of Polymers (Information subject recommended to be taken), Bioresource Engineering, Advanced Molecular Genetics, Biocatalyst Engineering, Advanced Glycotechnology, Genetics and Plant Biotechnology, Genome and Development, Cognitive Neuroscience, Biological motility:Advanced course, Advanced Instrumental Analysis for Materials, Microbiology Fundamentals for Application、Bioengineering Techniques in Plants and Animals、Bioengineering Journal Club、Seminar on Bioengineering for Foreign Students、Research Project Seminar for Foreign Students、Advanced Water Environmental Engineering 1、Advanced Water EnvironmentalEngineering 2、Physical Chemistry of Advanced Materials、Advanced Inorganic Materials、Advanced Organic Materials, Seminar on Materials Science and Bioengineering 1~4, Expert Seminar on Materials Science and Bioengineering 1~2, Practical Study Project on Materials Science and Bioengineering, Learning through the Study Project on Materials Science and Bioengineering Research Integrity	Master's Thesis Advanced Experiments of Materials Science and Bioengineering 1~2, Seminar on Materials Science and Bioengineering 1~4, Expert Seminar on Materials Science and Bioengineering 1~2, Practical Study Project on Materials Science and Bioengineering, Learning through the Study Project on Materials Science and Bioengineering Subjects of other majors	Master's Thesis Seminar on Materials Science and Bioengineering 1~4, Expert Seminar on Materials Science and Bioengineering 1~2, Practical Study Project on Materials Science and Bioengineering, Learning through the Study Project on Materials Science and Bioengineering	Master's Thesis Seminar on Materials Science and Bioengineering 1~4, Expert Seminar on Materials Science and Bioengineering 1~2, Practical Study Project on Materials Science and Bioengineering, Learning through the Study Project on Materials Science and Bioengineering Research Integrity

Materials Science and Bioengineering – Subject Organizational Diagram



Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term			Lecturer-in-Charge	Notes
			1	2	3		
Compulsory	Seminar on Materials Science and Bioengineering 1	1	●			Staff	① ★
	Seminar on Materials Science and Bioengineering 2	1		●		Staff	① ★
	Seminar on Materials Science and Bioengineering 3	1	●			Staff	② ★
	Seminar on Materials Science and Bioengineering 4	1		●		Staff	② ★
	Advanced Experiments of Materials Science and Bioengineering 1	2	●			Staff	① ★ R
	Advanced Experiments of Materials Science and Bioengineering 2	2		●		Staff	① ★ R
	Research Integrity	1	●*	●*		<1st Term> Chair, ※ Sato (K) <2nd Term> Chair, ※ Sato (K)	① *Classes are held in Japanese in the first term and English in the second term. Students must take either of these classes.
	Total	9					
Elective	Advanced Crystal Structure	1	●			Saitoh (H)	★ R
	Solid State Physics	1	●			Ishibashi	★ ☐ R
	Solid State Reactions	1		●		Tanaka (S)	★ ☐ R
	Advanced Course of Solid State Thermal Properties	1		●		Honma (Tsu) & Pornprasertsuk	★ ☐ R
	Advanced Solid State Physics for Amorphous Materials	1		●		Honma (Tsu)	★ ☐ R
	Biological Motility: Advanced Course	2		●		Fujiwara	O ★ R
	Environmental Analytical Chemistry	2	●			Takahashi (Y)	O ★ ☐ R S
	Advanced Course of Nanobiomaterials	1		●		Tagaya	★ ☐ R
	Advanced Course of Electrochemical Energy Conversion 1	1		●		Shironita	O ★ ☐ R
	Organic Solid State Chemistry	1		●		Imakubo	★ R
	Advanced Course of Organic Materials 1	2	●			Kawahara	O ★ R
	Advanced Course of Synthetic Organic Chemistry 1	1	●			Maekawa	O ★ R
	Advanced Course of Synthetic Organic Chemistry 2	1	●			Maekawa	E ★ R
	Advanced Course of Functional Materials and Interface Science	2		●		Funatsu & Nishikawa	★
	Simulation of Polymers	2	●			Kimura(N)	O ★ ☐ I R
	Advanced Polymer Materials for Bioengineering	2	●			Kuwahara	O ★ ☐ R
	Bioresource Engineering	2		●		Ogasawara	O ★ R

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term			Lecturer-in-Charge	Notes
			1	2	3		
Elective	Genetics and Plant Biotechnology	2	●			Takahara	O ★ ☐ R
	Advanced Molecular Genetics	2		●		Masai & Kasai	O ★ R
	Advanced Glycotechnology	2		●		Sato(T)	E ★ R
	Cognitive Neuroscience	2		●		Shimoda	E ★ R
	Biocatalyst Engineering	2		●		Takahashi(S)	E ★ R
	Genome and Development	2		●		Nishimura & Ohnuma	★ ☐ R
	Advanced Instrumental Analysis for Materials	1	●			Suzuki(Tsu), Tanaka(S), Tanaka(K), Homma(To), Matsubara & Dung	① ★ ☐
	Microbiology Fundamentals for Application	2		●		Masai, Ogasawara, Takahashi(S) & Kasai	O ☆ ◆
	Bioengineering Techniques in Plants and Animals	2		●		Takimoto,Ohnuma, Sato(T), Nishimura & Shimoda	☆ ◆ ☐
	Bioengineering Journal Club	1	●			( )	☆ Not Conducted in
	Seminar on Bioengineering for Foreign Students	2		●		Staff	☆ ▼
	Research Project Seminar for Foreign Student	2		●		Staff	☆ ▼(Only for international students under Academic Cooperation Agreement and Double Degree Program)
	Advanced Water Environmental Engineering 1	2	●			Yamaguchi(T) & Watari	E ★ ☐
	Advanced Water Environmental Engineering 2	2		●		Yamaguchi(T) & Watari	E ★ ☐
	Physical Chemistry of Advanced Materials	2		●		Imakubo, Takahashi(Y), Tagaya, Funatsu & Shironita	O ☆ ◆
	Advanced Inorganic Materials	2		●		Saitoh(H), Ishibashi, Tanaka(S), Homma(Tsu) & Nishikawa	E ☆ ◆
	Advanced Organic Materials	2		●		Maekawa, Kawahara, Kuwahara, Shida & Toda	E ☆ ◆

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Elective	Expert Seminar on Materials Science and Technology 1	1	●			Staff	Approval of academic supervisor and Chair is required to take the subject
	Expert Seminar on Materials Science and Technology 2	1		●		Staff	Approval of academic supervisor and Chair is required to take the subject
	Total	58					

1) In the "lecturer-in-charge" column, ※ indicates an adjunct lecturer and ( ) indicates that the lecturer is undecided

【Symbols in the Notes Column】

①: Recommended to be taken in the first year of the Master's Program
②: Recommended to be taken in the second year of the Master's Program
E: Conducted during even-numbered years according to the Reiwa Calendar
O: Conducted during odd-numbered years according to the Reiwa Calendar
◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the Reiwa Calendar
☆: Conducted in English
★: Conducted in both Japanese and English
△: Can be conducted in English
A: Classes will not be conducted if there are no SDG Professional Course students whose mother tongue is not Japanese who register to take this subject
◆: Offered only for the international students
▼: Offered only for international students under Academic Cooperation Agreement and Double Degree Program
□: Subject Available for On-Demand Classes
I: Information subject recommended to be taken
R: Science-Associated Subject for Teacher's License Certification
S: Safety subject recommended to be taken

○ Materials Science and Bioengineering recommends the following major subjects from other majors.

Electrical, Electronics and Information	**Civil and Environmental**
Statistical Signal Processing	Advanced Environmental Information Survey Engineering
	Advanced Water and Soil Environmental Engineering

Civil and Environmental Engineering

1. Education Objectives

The Civil and Environmental Engineering major aims to develop leading engineers and researchers with the practical and creative abilities to contribute to a sustainable society and respond to major disasters. Students will acquire the specialized knowledge, comprehensive perspectives, and global outlook to appropriately plan, design, build, and maintain various infrastructures in order to support healthy social, cultural, and economic activities in harmony with environment.

The lectures, seminars, and experiments will utilize the integrated education between the undergraduate and master's programs at NUT, and are organized to allow students to acquire advanced expertise and comprehensive knowledge in civil and environmental engineering.

2. Subject Organization

The subjects, credits, course terms, and lecturers-in-charge of this major are shown in the Attached Table.

(1) In order to complete this major, students must acquire 30 credits or more (including 24 credits or more from subjects in the Attached Table [9 credits from compulsory subjects] and 6 credits or more from Common Subjects), and pass the master's thesis screening and final examination.

(2) "Seminar on Civil and Environmental Engineering 1 to 4" are reading and discussion (journal club) sessions. In principle, these seminars will be conducted in the research laboratory of each student's academic supervisor. However, there may be cases where the seminars are jointly conducted by two or more laboratories with similar specialties.

(3) "Research work of Civil and Environmental Engineering 1 and 2" subjects are primarily conducted by each student's academic supervisor, and are composed of occasional advanced experiments or practical trainings for various specialized topics selected by the lecturers.

3. Research Work and Master's Thesis

The master's thesis will be based on the consolidated results of research conducted over the 2 years of the master's program under the research guidance of the academic supervisor. Students are encouraged to present their master's research content at scientific meetings and conferences in their field of study while they are enrolled at NUT.

○ Standard Schedule for Master's Thesis Review (For Students Completing in March)

First Year

April: Deciding on the students' academic supervisors and research topics

Students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program

Chair confirms its content, the “Research Plan” will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

January to February: Master’s thesis interim results presentation

Second Year

April to July: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

In M2, students will proceed with data collection and analysis using the established research methods, and consolidate their research findings in the master’s thesis.

Students will receive research instruction from their academic supervisors on how to prepare their master’s thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references approximately 1 to 4 times per month.

October to November: Master’s thesis preliminary presentation and assessment

End of November to Early December: Submission of the *Application Form for Thesis Screening for Master’s Degree* and other documents

End of January to the Beginning of March: Submission of the master’s thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master’s thesis presentation

Master’s thesis screening and final examination

○ Standard Schedule for Master’s Thesis Review (For Students Enrolling in September and Completing in August)

First Year

September: Deciding on the students’ academic supervisors and research topics

Students consult with their academic supervisors to determine their research topics.

September to October: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

From September onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

June to July: Master's thesis interim results presentation

Second Year

September to October: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

In M2, students will proceed with data collection and analysis using the established research methods, and consolidate their research findings in the master's thesis.

Students will receive research instruction from their academic supervisors on how to prepare their master's thesis, such as the structure of the thesis, preparation of figures and tables, and organization and citation of references approximately 1 to 4 times per month.

March to April: Master's thesis preliminary presentation and assessment

Early April to Mid-May: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

Mid-June to the Beginning of July: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

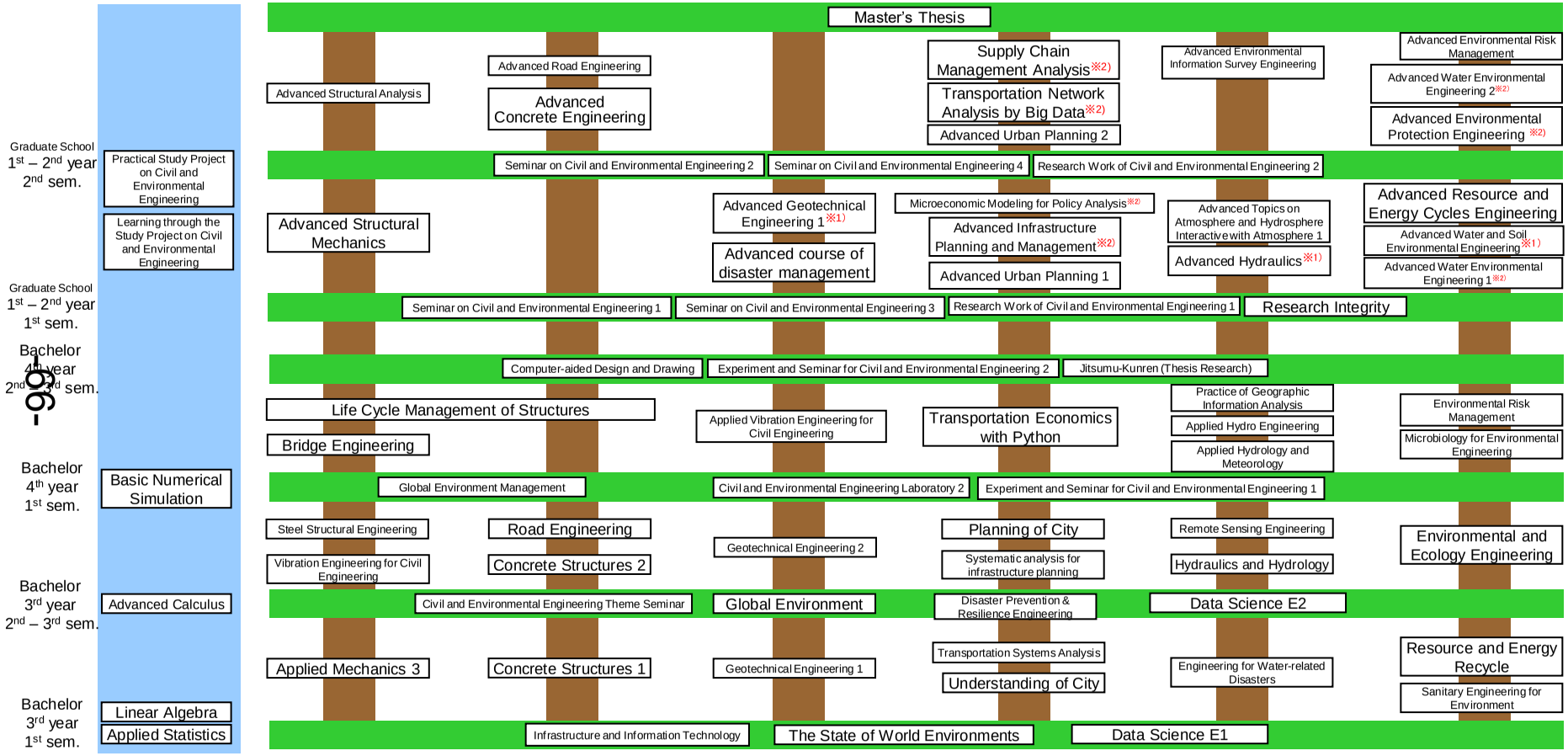
Master's thesis presentation

Master's thesis screening and final examination

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Civil and Environmental Engineering

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program 1st-2nd year	Master's Thesis Advanced Geotechnical Engineering 1、Advanced course of disaster management (Safety subject recommended to be taken), Advanced Hydraulics (Information subject recommended to be taken), Advanced Fluid Mechanics, Advanced Course of Dynamics of Hydrosphere Interactive with Atmosphere 1, Advanced Environmental Information Survey Engineering (Information Subject recommended to be taken), Advanced Concrete Engineering (Information Subject recommended to be taken), Advanced Road Engineering, Advanced Structural Analysis, Advanced Structural Mechanics, Supply Chain Management Analysis, Transportation Network Analysis by Big Data (Information Subject recommended to be taken), Microeconomic Modeling for Policy Analysis, Advanced Infrastructure Planning and Management, Advanced Urban Planning 1, Advanced Urban Planning 2, Advanced Water and Soil Environmental Engineering, Advanced Water Environmental Engineering 1, Advanced Environmental Protection Engineering, Advanced Water Environmental Engineering 2, Advanced Environmental Risk Management, Advanced Resource and Energy Cycles Engineering, Seminar on Civil and Environmental Engineering 1~4, Research Work of Civil and Environmental Engineering 1~2, Practical Study Project on Civil and Environmental Engineering, Learning through the Study Project on Civil and Environmental Engineering Research Integrity	Master's Thesis Seminar on Civil and Environmental Engineering 1~4, Research Work of Civil and Environmental Engineering 1~2, Practical Study Project on Civil and Environmental Engineering, Learning through the Study Project on Civil and Environmental Engineering Subjects of other majors	Master's Thesis Advanced Urban Planning 1, Advanced Urban Planning 2, Supply Chain Management Analysis, Seminar on Civil and Environmental Engineering 1~4, Research Work of Civil and Environmental Engineering 1~2, Practical Study Project on Civil and Environmental Engineering, Learning through the Study Project on Civil and Environmental Engineering	Master's Thesis Seminar on Civil and Environmental Engineering 1~4, Research Work of Civil and Environmental Engineering 1~2, Practical Study Project on Civil and Environmental Engineering, Learning through the Study Project on Civil and Environmental Engineering Research Integrity

Civil and Environmental Engineering Program – Subject Organizational Diagram



※1) Subjects are offered every other year with English classes,
※2) Subjects are offered every other year

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Compulsory	Seminar on Civil and Environmental Engineering 1	1	●			Staff	① ★
	Seminar on Civil and Environmental Engineering 2	1		●		Staff	① ★
	Seminar on Civil and Environmental Engineering 3	1	●			Staff	② ★
	Seminar on Civil and Environmental Engineering 4	1		●		Staff	② ★
	Research Work of Civil and Environmental Engineering 1	2	●			Staff	★
	Research Work of Civil and Environmental Engineering 2	2		●		Staff	★
	Research Integrity	1	●*	●*		<1st Term> Chair, ※ Shionoya <2nd Term> Chair, ※ Sato (K)	① *Classes are held in Japanese in the first term and English in the second term. Students must take either of these classes.
	Total	9					
Elective	Advanced Geotechnical Engineering 1	2	●			Toyota	E ★ K
	Advanced Geotechnical Engineering 1	2	●			Toyota	O ☆ ☐ K
	Advanced course of disaster management	2		●		Ikeda, ※Shiga, ※Matsuda (Y), ※Tsuda, ※Tajima	★ ☐ K S
	Advanced Hydraulics	2	●			Hosoyamada & Nakamura(F)	O ★ ☐ I K
	Advanced Fluid Mechanics	2	●			Hosoyamada & Nakamura(F)	E ☆ ◆ ☐ K
	Advanced Course of Dynamics of Hydrosphere Interactive with Atmosphere 1	2	●			Kumakura	★ K
	Advanced Environmental Information Survey Engineering	2		●		Takahashi (K)	★ ☐ I K
	Advanced Concrete Engineering	2		●		Shimomura	☆ ☐ I K
	Advanced Road Engineering	2		●		Takahashi (O)	☆ ☐ K
	Advanced Structural Mechanics	2	●			Hayashi	★ K
	Advanced Structural Analysis	2		●		Iwasaki	★ ☐ K
	Supply Chain Management Analysis	2		●		Kato(T)	O ☆ ☐ K
	Transportation Network Analysis by Big Data	2		●		Kato(T)	E ☆ ☐ I K
	Microeconomic Modeling for Policy Analysis	2	●			Sano	O ☆ ☐ K
	Advanced Infrastructure Planning and Management	2	●			Sano	E ☆ ☐ K

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term			Lecturer-in-Charge	Notes
			1	2	3		
Elective	Advanced Urban Planning 1	2	●			Matsukawa	★ K
	Advanced Urban Planning 2	2		●		Matsukawa	★ K
	Advanced Water and Soil Environmental Engineering	2	●			Hatamoto	O ★ ☐ K
	Advanced Water Environmental Engineering 1	2	●			Yamaguchi(T) & Watari	E ☆ ☐ K
	Advanced Environmental Protection Engineering	2		●		Yamaguchi(T)	O ☆ ☐ K
	Advanced Water Environmental Engineering 2	2		●		Yamaguchi(T) & Watari	E ☆ ☐ K
	Advanced Environmental Risk Management	2		●		( )	★ ☐ K Not Conducted in
	Advanced Resource and Energy Cycles Engineering	2	●			Himeno	★ ☐ K
	Total	46					

1) In the "lecturer-in-charge" column, ※ indicates an adjunct lecturer and ( ) indicates that the lecturer is undecided

【Symbols in the Notes Column】

①: Recommended to be taken in the first year of the Master's Program
②: Recommended to be taken in the second year of the Master's Program
E: Conducted during even-numbered years according to the Reiwa Calendar
O: Conducted during odd-numbered years according to the Reiwa Calendar
◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the Reiwa Calendar
☆: Conducted in English
★: Conducted in both Japanese and English
A: Can be conducted in English for SDG Professional Course students
◆: Offered only for the international students
☐: Subject Available for On-Demand Classes
I: Information subject recommended to be taken
K: Industry-Associated Subject for Teacher's License Certification
S: Safety subject recommended to be taken

○ Students who have earned credits for either the following subjects conducted before 2025 are cannot take "Advanced Course of Disaster Management" conducted after 2026.

・"Advanced Course of Disaster Management" or "Advanced Seismic Safety Engineering and Community Disaster Management" (Nuclear Technology)

○ Civil and Environmental Engineering recommends the following major subjects from other majors.

Mechanical Engineering		Electrical, Electronics and Information Engineering
Fracture Mechanics	Advanced Course for Non-Newton Fluid	Statistical Signal Processing
Advanced Course for Microstructure of Materials	Advanced Compressible Fluid Dynamics	
Advanced Lecture on Solid State Physics	Tribology	
Advanced Automation		

Nuclear Technology

1. Education Objectives

The objective of this major is to train practical and leading engineers who are able to ensure safety in the planning, development, and operation of light water reactors, advanced reactors, and nuclear fusion systems, used in nuclear power plants, nuclear reactor equipment manufacturers, nuclear fuel processing companies, and nuclear-related research laboratories around the world through the application of system safety. This major offers subjects that enable the integrated acquisition of system safety engineering knowledge based on nuclear engineering (from nuclear physics to back-end technologies) and risk-based design for graduates of universities or technical college advanced courses who have specialized knowledge in the fundamental engineering fields of mechanical engineering, electrical engineering, materials science, civil engineering, and bioengineering. The subjects are composed of lectures, practical training, and experiments. Together with the consolidation of each student's research activities in their master's thesis and presentation, the major aims to train students in nuclear technology expertise that can prevent catastrophic disasters, even in cases of malfunctions or accidents.

2. Subject Organization

Nuclear technology involves the application of safety technology and safety management to fundamental nuclear technologies, and is centered on ensuring safety for each target device.

The subjects in this major include both compulsory subjects and elective subjects, which are divided into 3 main categories: 1) Advanced Radiation Engineering, 2) Nuclear System Engineering, and 3)Nuclear Safety Engineering. To complete this major, students must adhere to the subject requirements established for the entire Master's Program in Engineering, and fulfill all of the following criteria.

(1) Acquire a total of 8 credits from compulsory subjects.

(2) Acquire 16 or more credits from a balanced selection of elective subjects (4 or more credits from each of the following elective subject groups listed in the attached table: Advanced Radiation Engineering, Nuclear System Engineering, and Nuclear Safety Engineering).

(From a combination of items (1) and (2), students must acquire 24 or more credits from the subjects offered in this major.)

(3) Acquire 6 or more credits from common subjects.

(4) Acquire a total of 30 or more credits from a combination of items (1) to (3).

Seminars are required in four subjects, and students must generally take them in numerical order (September entrants begin with Seminar I in the second semester). Students may generally take only one seminar per semester.

3. Research Work and Master's Thesis

The master's thesis must be based on novel and original research evidence and analytical results, and must be written with clear and logical conclusions that would be accepted even by people with differing opinions. By conducting research activities under the guidance of the main/assistant academic supervisors, students must learn to become sufficiently competent to convince the chief examiner and sub-examiners of their research conclusions in the presentations and question & answer sessions during the interim presentation, preliminary screening, and

master's thesis presentation.

The standard schedule for students enrolling in April and completing in March is as follows:

Master's Program, First Year

April: Deciding on the students' academic supervisors

May: Deciding on the research topic, Development of the research plan

Students will develop a research plan together with their academic supervisors while receiving guidance on research directions and methods. At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From May onwards: Conduct research

Students will periodically receive guidance (e.g., experimental/investigation methods, results consolidation methods, presentation methods) from their academic supervisors in accordance with their research progress approximately 1 to 4 times per month. In addition, students will carry out their research while building upon discussions about the progress and findings with their academic supervisors.

Master's Program, Second Year

May: Review of the research plan

Students will review their research plans together with their academic supervisors. At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

May to June: Master's thesis interim presentation

November to December: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents, Preliminary screening of the master's thesis

January to February: Submission of the master's thesis and thesis abstract, Master's thesis presentation, Master's thesis screening and final examination

The standard schedule for students enrolling in September and completing in August is as follows:

Master's Program, First Year

September: Deciding on the students' academic supervisors

October: Deciding on the research topic, Development of the research plan

Students will develop a research plan together with their academic supervisors while receiving guidance on research directions and methods. At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From October onwards: Conduct research

Students will periodically receive guidance (e.g., experimental/investigation methods, results consolidation methods, presentation methods) from their academic supervisors in accordance with their research progress approximately 1 to 4 times per month. In addition, students will carry out their research while building upon

discussions about the progress and findings with their academic supervisors.

Master's Program, Second Year

October: Review of the research plan

Students will review their research plans together with their academic supervisors. At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

October to November: Master's thesis interim presentation

April to May: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents, Preliminary screening of the master's thesis

June to July: Submission of the master's thesis and thesis abstract, Master's thesis presentation, Master's thesis screening and final examination

Students must undergo practical training for a minimum of 2 weeks outside of NUT (either domestic or overseas) during the 1 or 2 years where they are enrolled. Students are encouraged to present their master's research content at scientific meetings and conferences in their field of study while they are enrolled at NUT. In particular, it is recommended that they improve their communication skills and foreign language skills by learning to explain their work to researchers from other countries.

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Nuclear Technology

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program **1st-2nd year**	Master's Thesis Basics of Nuclear Technology, Nuclear Technology Laboratory **Advanced Radiation Engineering:** Nuclear Fusion Systems, Advanced Instrumental Analysis for Materials, Advanced Engineering for Radiation Safety and Detection, Advanced Engineering on Radiation Physics, Computational Science (Information subject recommended to be taken), Environmental Radioactivity and Biological Impact **Nuclear System Engineering:** Advanced Lecture on Nuclear and Radiochemistry, Nuclear Reactor Engineering, Nuclear Materials and Fuels, Nuclear Fuel Cycle Engineering, Nuclear Reactor Design **Nuclear Safety Engineering:** Nuclear Power Reactor and Plant Systems (Safety subject recommended to be taken), Nuclear Power Plant Engineering (Safety subject recommended to be taken), Advanced Safety and Crisis Management (Safety subject recommended to be taken), Nuclear Regulation and Safety Management (Safety subject recommended to be taken), Advanced Road Engineering, Nuclear Emergency Planning and Resilience Engineering (Safety subject recommended to be taken) Practice and Training through the Study Project on Nuclear System Safety Engineering, Learning through the Study Project on Quantum Science and Radiation, Learning through the Study Project on Nuclear Technology, Learning through the Study Project on Advanced Energy Engineering Research Integrity	Master's Thesis Seminar on Nuclear Technology1~4, Nuclear Technology Practical, Practice and Training through the Study Project on Nuclear System Safety Engineering, Learning through the Study Project on Quantum Science and Radiation, Learning through the Study Project on Nuclear Technology, Learning through the Study Project on Advanced Energy Subjects of other majors	Master's Thesis Special Exercises in Technical English 1~2, Seminar on Nuclear Technology1~4, Nuclear Technology Laboratory, Nuclear Technology Practical, Practice and Training through the Study Project on Nuclear System Safety Engineering, Learning through the Study Project on Quantum Science and Radiation, Learning through the Study Project on Nuclear Technology, Learning through the Study Project on Advanced Energy	Master's Thesis Special Exercises in Technical English 1~2, Seminar on Nuclear Technology1~4, Nuclear Technology Laboratory, Practice and Training through the Study Project on Nuclear System Safety Engineering, Learning through the Study Project on Quantum Science and Radiation, Learning through the Study Project on Nuclear Technology, Learning through the Study Project on Advanced Energy Research Integrity

	Master's Thesis writing, presentaion				
	↑				
1st - 3rd Term	Practice and Training through the Study Project on Nuclear System Safety Engineering		Learning through the Study Project on Quantum Science and Radiation	Learning through the Study Project on Nuclear Technology	Learning through the Study Project on Advanced Energy Engineering
3rd Term	Nuclear Technology Practical				
2nd Term	Seminar on Nuclear Technology 2	Special Exercises in Technical English 2	Advanced Engineering on Radiation Physics	Nuclear Fuel Cycle Engineering	Advanced Road Engineering
	Seminar on Nuclear Technology 4		Computational Science	Nuclear Reactor Design	Nuclear Emergency Planning and Resilience Engineering
			Environmental Radioactivity and Biological Impact		Nuclear Power Plant Engineering
1st Term	Seminar on Nuclear Technology 1	Basics of Nuclear Technology	Nuclear Fusion Systems	Advanced Lecture on Nuclear and Radiochemistry	Nuclear Power Reactor and Plant Systems
	Seminar on Nuclear Technology 3		Advanced Instrumental Analysis for Materials	Nuclear Reactor Engineering	Advanced Safety and Crisis Management
	Nuclear Technology Laboratory		Advanced Engineering for Radiation Safety and Detection	Nuclear Materials and Fuels	Nuclear Regulation and Safety Management
	Special Exercises in Technical English 1				
	Research Integrity				
Classification	Compulsory	Elective	Advanced Radiation Engineering	Nuclear System Engineering	Nuclear Safety Engineering

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective		Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Compulsory		Seminar on Nuclear Technology 1	1	●	(●)		Staff	① ★
		Seminar on Nuclear Technology 2	1	(●)	●		Staff	① ★
		Seminar on Nuclear Technology 3	1	●	(●)		Staff	② ★
		Seminar on Nuclear Technology 4	1	(●)	●		Staff	② ★
		Nuclear Safety Laboratory	1	●			Staff	① ★ K
		Nuclear Technology Practical	1	(●)		●	Staff	★
		Special Exercises in Technical English 1	1	●			Jiang, Sasaki (Toru) & Li	① ★
		Research Integrity	1	●*	●*		<1st Term> Chair & ※Uchitomi <2nd Term> Chair & ※Sato (K)	① *Classes are held in Japanese in the first term and English in the second term. Students must take either of these classes.
		Total	8					
Elective		Basics of Nuclear Technology	2	●			Staff	① ★
		Special Exercises in Technical English 2	1		●		Jiang & Drier	①
Elective	Advanced Radiation Engineering	Nuclear Fusion Systems	2	●			Kikuchi	★ ☐ K
		Advanced Instrumental Analysis for Materials	1	●			Suzuki(Tsu), Tanaka(S), Tanaka(K), Homma(To), Matsubara & Dung	① ★ ☐
		Advanced Engineering for Radiation Safety and Detection	1	●			( ), Matsumoto	★ ☐ Not Conducted in
		Advanced Engineering on Radiation Physics	2		●		Jiang & Sugai	★ K
		Computational Science	2		●		Kikuchi	E I ★ ☐ K
		Environmental Radioactivity and Biological Impact	2		●		Ohta(T)	★
	Nuclear System Engineering	Advanced Lecture on Nuclear and Radiochemistry	2	●			Suzuki (Ta) & Ohta(T)	★ ☐ K
		Nuclear Reactor Engineering	2	●			Takezawa	★ ☐ K
		Nuclear Materials and Fuels	2	●			Suzuki(T) & ※Amaya & ※Suya	★ ☐
		Nuclear Fuel Cycle Engineering	2		●		Suzuki(Ta) & Ohta(T)	★ ☐ K
		Nuclear Reactor Design	2		●		Takezawa	① ★ ☐
	Nuclear Safety Engineering	Nuclear Power Reactor and Plant Systems	2	●			Takezawa & ※Kohama	K S
		Nuclear Power Plant Engineering	2		●		Takezawa	☆ E S
		Advanced Safety and Crisis Management	2	●			Oba, ※Okano, ※Kurosawa & ※Sosa	K S
		Nuclear Regulation and Safety Management	2	●			Suzuki(Tsu) & Takezawa	★ ☐ S
		Advanced Road Engineering	2		●		Takahashi(O)	☆ K
		Nuclear Emergency Planning and Resilience Engineering	2		●		Sano, Oba	S
Total			35					

1) In the "lecturer-in-charge" column, ※ indicates an adjunct lecturer and ( ) indicates that the lecturer is undecided
2) In the "Term" columns, ( ) indicates that the subject may be taken outside of the designated term

【Symbols in the Notes Column】

①:	Recommended to be taken in the first year of the Master's Program
②:	Recommended to be taken in the second year of the Master's Program
E:	Conducted during even-numbered years according to the Reiwa Calendar
O:	Conducted during odd-numbered years according to the Reiwa Calendar
◎:	Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
☆:	Conducted in English
★:	Conducted in both Japanese and English
A:	Can be conducted in English for SDG Professional Course students
□:	Subject Available for On-Demand Classes
I:	Information subject recommended to be taken
K:	Industry-Associated Subject for Teacher's License Certification
S:	Safety subject recommended to be taken

○ Students in the Nuclear Technology are recommended to take the following subjects from other majors.

- Advanced Combustion (Mechanical Engineering)
- Advanced Study for Plasma Diagnostics (Electrical, Electronics and Information Engineering)
- Advanced Resource and Energy Cycles Engineering (Civil and Environmental Engineering)
- Advanced Course of Disaster Management (Civil and Environmental Engineering)

○ Due to content overlap, the following subjects cannot be taken together:

- "Advanced Engineering on Radiation Physics" and "Advanced Engineering on Electromagnetic Energy" (Electrical, Electronics and Information Engineering)
- "Nuclear Reactor Engineering" and "Reactor Physics and Kinetics" (Conducted before 2025)
- "Nuclear Power Reactor and Plant Systems" and "Nuclear Power Plant Engineering"
- "Nuclear Regulations and Safety Management" and "Advanced Lecture on Nuclear Regulations" (Conducted before 2025)

System Safety Engineering

1. Education Objectives

Within the complex combinations of hardware/software, people, and laws/standards, there exist vulnerabilities where human error and mechanical failure can occur. In order to ensure safety, there is a need to closely examine all stages (design-manufacture-utilization) of a system's life cycle to preemptively and systematically expose the possible causes of hazards, analyze and assess their effects, and implement appropriate safety measures. "System Safety" refers to the methodological system designed to implement these steps, and involves the integrated application of safety technologies and management skills. As modern society has become more innovative and global, new technologies are being utilized in practical applications with increasing speed. In order to lead the world in implementing these new technologies, it is essential to first incorporate safety features before they are provided to society. To do so, there is a need for a theoretical system to ensure safety in new technologies before practical implementation, and a societal demand for research to construct the principles of system safety.

System Safety Engineering provides an education in system safety to both general students and working adult students. This major will develop individuals with cutting-edge knowledge and high ethical standards, in-depth academic knowledge that can be adapted to various safety-related challenges and new technologies, and logical thinking abilities and creativity—in other words, they will possess research capabilities; these individuals will also have outstanding abilities to solve real-world problems in safety—in other words, they will possess practical capabilities.

To produce such individuals, this major has set the following education objectives:

> System Safety Engineering aims to develop individuals with cutting-edge knowledge and high ethical standards, in-depth academic knowledge that can be adapted to various safety-related challenges and new technologies, and logical thinking abilities and creativity—in other words, they will possess research capabilities; these individuals will also have outstanding abilities to solve real-world problems in safety—in other words, they will possess practical capabilities.

3. Subject Organization

In accordance with the System Safety Subject Organization (**Attached Figure 1**), students will systematically take a series of compulsory subjects, elective-compulsory subjects, elective subjects, and combined lecture/practical training subjects (System Safety Study 1 to 4) as shown in the **Attached Table**. In this way, students will gain a wide range of specialized knowledge on system safety, including safety principles, engineering ethics/research ethics, research methodologies, and systematic specialized fundamental abilities.

Students will acquire knowledge by taking the subject groups shown in the upper levels of **Attached Figure 1**, and apply this knowledge to the specialty-specific safety fields presented in the lowest level. As this major will guide students in detecting and researching system safety-related issues, students will expand their learning as they acquire knowledge from each academic

supervisor's field of expertise.

Specialty-specific safety spans a highly diverse range of fields to accommodate each student's occupation, needs, and interests. The major offers subjects on the following popular topics that have a relative degree of commonality: safe use of robots (mechanical-related field), workplace safety and health promotion through safety and health management (labor-related field), and safety measures in the medical setting (medical and welfare-related field). Other topics can also be learned during the master's research in accordance with each student's occupation, needs, and interests. This fundamental and foundational knowledge will be imparted through the groups of subjects presented in the layers above the lowest specialty-specific safety layer (**Attached Figure 1**), and the master's research will be conducted based on this systematic learning.

Attached Figure 2 shows a recommended diagram of subjects that are taken over the standard program duration of 2 years. With reference to this diagram, students will formulate a study plan centered on their own fields of interest that fulfill the completion criteria for the Master's Program in Engineering and this major. The subjects shown in **Attached Figure 2** are offered every year, and should be take in either their first or second year with consideration to their personal prior knowledge.

Students must earn a total of 30 credits or more to complete the program. Of these, 7 credits must be from compulsory subjects, 6 credits or more from elective-compulsory subjects, and 17 credits or more from elective subjects (including 6 credits from common subjects. Please refer to the Program Guide for common subject offerings). However, students who have been admitted through the entrance examination for working adults can be considered to have already acquired a certain level of practical technical skills in society. Therefore, these students may take major subjects instead of 6 credits from common subjects. In addition, students who have already taken relevant subjects in other graduate schools may apply to transfer their credits to this major. These will be mainly recognized as credits from elective subjects, and shall not exceed 6 credits. Students who intend to apply for transfer credit approval must obtain the *Transfer Credit Approval Application Form* from the Division of Academic Affairs, and submit the completed form to the President of NUT together with the results transcript from the relevant university and the syllabus of the relevant subject.

3. Class Methods

In this major, general students and working adult students will take classes together despite their differences in real-world experience. Lecturers will judiciously ascertain each student's portfolio, and compensate for the excesses and deficiencies among the different students. In this way, the major will not lead to confusion arising from the differences in types of students, but will instead seek to connect them through mutual edification.

General students who lack practical knowledge of actual safety conditions in society and manufacturing sites will be provided with supplementary information by supervisors, and will also jointly participate in classes with working adult students. As many working adult students have work obligations during the weekdays, classes will mainly be conducted on Saturdays and Sundays in order to allow them to continue working while furthering their postgraduate studies. General students will also take these same lectures. The time schedule, which is the same as other classes, is as follows: 1st Period: 8:50–10:20; 2nd Period: 10:30–12:00; 3rd Period: 13:00–14:30; and 4th

Period: 14:40–16:10. There may be cases where unavoidable work responsibilities result in a student's absence from class. In cases where students are absent for less than half of a subject's total lecture hours, these missed classes may be compensated through supplementary classes or question/answer sessions with the lecturers through online methods. If the lecturers consider that a student has taken more than two-thirds of the total classes, the student shall be eligible to undergo a performance evaluation through an examination or report.

For the compulsory subjects System Safety Study 1 to 4, which cultivate fundamental abilities in research, joint classes (combined lectures/ practical training) will be conducted for all enrolled general and working adult students at specified class venues (Nagaoka or Tokyo) during the start, middle, and later parts of the course. When classes are in session, students will report to their academic supervisor, receive guidance, and submit a report of their practical training results. General students will do this directly, whereas working adult students will do this directly or through online methods.

In order to cultivate cutting-edge research capabilities and practical capabilities in safety technologies, safety certification, and other topics, this major offers domestic and overseas internships in safety certification agencies and safety technology research institutions in Japan and abroad.

- Students will have individual meetings with their academic supervisors to decide their internship host and practical training topic.
- Before commencing the internship, students will conduct preparatory studies according to their academic supervisors' instructions. They will then engage in analyses, research, and practical training during the internship. The results will be compiled into a report.
- During the internship period, students will report to their academic supervisors and receive instruction when required, either directly or through online methods.
- Students will present their internship results at a presentation session.

The internship period and duration will be decided with consideration to the requirements of both the internship hosts and students. Students will not be allowed to participate in both overseas and domestic internships.

4. Research Work and Master's Thesis

4.1. Research Fields

In addition to fostering the development of individuals with research capabilities and practical capabilities, this major will facilitate research that explores the theoretical systems of safety. The knowledge obtained from such research can then be applied as the basis of awareness campaigns and actively communicated to society. Furthermore, by collaborating with affiliated government organizations in Japan, the program can help the staff of these agencies to understand and apply system safety in their work. This can contribute to the widespread understanding of the importance of safety throughout society.

4.2. Schedule

The standard research schedule for students who complete the program in March is as follows:

<During M1>

April: Review of preferences for academic supervisors and research topics

May: Deciding on the students' academic supervisors and research topics

May to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From May onwards: Conduct research

Students will carry out research in accordance with the research plan.

During M1, the students will mainly focus on conducting preliminary experiments and literature review in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the experiments and investigations as appropriate.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

The academic supervisors will also provide guidance on presentation methods.

The interim presentation and assessment of the master's thesis will be conducted between March of M1 and May of M2.

<During M2>

Students will continue carrying out research while receiving guidance from their academic supervisors.

April to July: Review of the research plan

Students will review their research topics and plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

From October onwards: Consolidation of research

Students will receive guidance from their academic supervisors according to their research progress, and proceed with writing and preparing to present their master's thesis.

End of November to Early December: Submission of the *Application Form for Thesis Screening for Master's Degree* and other documents

End of January to March: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English words)

Master's thesis presentation

Master's thesis screening and final examination

March: Graduation ceremony

4.3. Research Guidance

Students will have individual meetings with their academic supervisors (main supervisor and co-

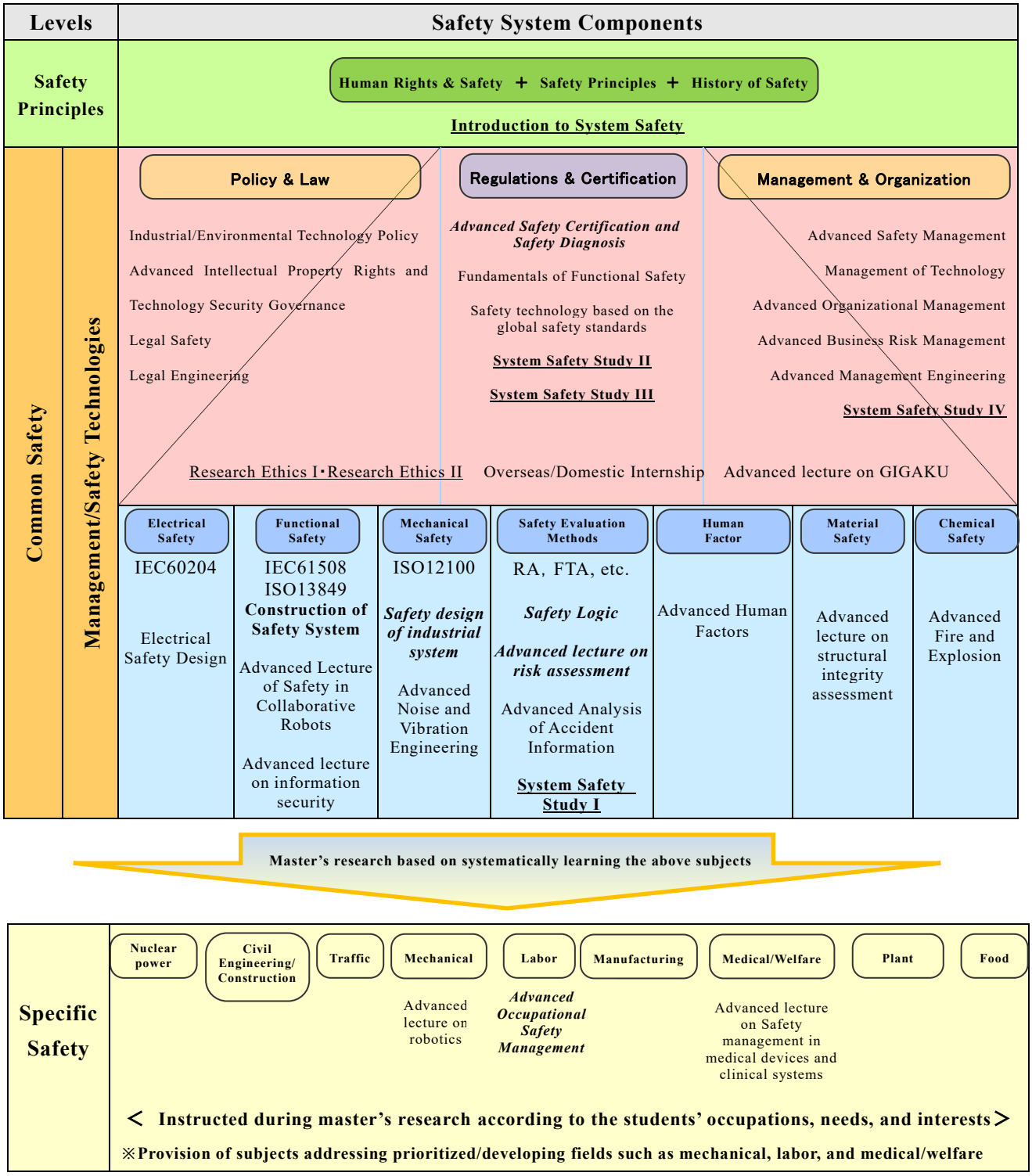
supervisor) to determine their research topics. In particular, working adult students are likely to choose topics developed from real-world problems or independently identified topics. Therefore, it is especially important for them to have individual meetings with their academic supervisors to decide on the appropriateness and feasibility of their proposed research topics from a system safety perspective.

Students will think scientifically about safety problems using all that they have learned from this major, and advance their research to propose solutions based on their combined knowledge of system safety. Students will report their research progress at a presentation session involving all students. During the research period, students will report to their academic supervisors and receive instruction when required, either directly or through online methods approximately 1 to 4 times per month.

In research, students will be guided in setting their research topics that takes into consideration the link between “general students with flexible mindsets unrestricted by experience” and “working adult students with diverse real-world experience” to provide complementary and mutual edification in the creative activity of research. The research results will be consolidated in each student’s master’s thesis and submitted.

5. Other Considerations

As this major provides a practical education, the lecturers may discuss case examples that are restricted to the class venue. Please be aware that such restricted information should not be disclosed to anyone outside of NUT.



Underlined & bold font: Compulsory subjects; ***Italicized & bold font***: Elective-compulsory subjects; Standard font: Elective subjects

Attached Figure 1. System safety subject organization

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in System Safety Engineering

	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program **1st-2nd year**	Master's Thesis Advanced Occupational Safety Management, Advanced Safety Management, Advanced Safety Certification and Safety Diagnosis, Safety Logic, Advanced lecture on risk assessment, Safety design of industrial system, Construction of Safety System, Overseas Internship, Domestic Internship, Industrial/Environmental Technology Policy, Management of Technology, Advanced Organizational Management, Advanced Business Risk Management, Fundamentals of Functional Safety, Safety technology based on the global safety standards, Electrical Safety Design, Advanced Intellectual Property Rights and Technology Security Governance, Advanced Fire and Explosion, Advanced Noise and Vibration Engineering, Advanced Lecture of Safety in Collaborative Robots, Advanced lecture on robotics, Advanced lecture on GIGAKU, Advanced Analysis of Accident Information (Information subject recommended to be taken), Advanced lecture on information security (Information subject recommended to be taken), Advanced Management Engineering, Advanced Human Factors, Legal safety, Legal Engineering, Advanced lecture on structural integrity assessment, Advanced lecture on Safety management in medical devices and clinical systems, Practical Study Project on System Safety Engineering, Learning through Study Project on System Safety Engineering Research Ethics 1 & 2	Master's Thesis System Safety Study 1~4, Introduction of System Safety, Overseas Internship, Domestic Internship, Practical Study Project on System Safety Engineering, Learning through Study Project on System Safety Engineering Subjects of other majors	Master's Thesis System Safety Study 1~4, Introduction of System Safety, Advanced Occupational Safety Management, Safety Logic, Advanced lecture on risk assessment, Safety design of industrial system, Construction of Safety System, Overseas Internship, Domestic Internship, Fundamentals of Functional Safety, Safety technology based on the global safety standards, Electrical Safety Design, Advanced Intellectual Property Rights and Technology Security Governance, Advanced Fire and Explosion, Advanced Noise and Vibration Engineering, Advanced Lecture of Safety in Collaborative Robots, Advanced lecture on robotics, Advanced lecture on GIGAKU, Advanced Analysis of Accident Information (Information subject recommended to be taken), Advanced lecture on information security (Information subject recommended to be taken), Advanced Human Factors, Advanced lecture on structural integrity assessment, Advanced lecture on Safety management in medical devices and clinical systems, Practical Study Project on System Safety Engineering, Learning through Study Project on System Safety Engineering	Master's Thesis Introduction of System Safety, Overseas Internship, Practical Study Project on System Safety Engineering, Learning through Study Project on System Safety Engineering Research Ethics 1 & 2

Year	Subject Term	System Safety Principles and Common Fields		
		A: Safety Technology Fields	Management Fields	
			B: Standards/Certification Fields	C: Policy/Management Fields
2nd year	Elective	Domestic Internship(1)①	Overseas Internship(1)	
	Compulsory		System Safety Study III(1-2)①	System Safety Study IV(1-2)①
1st-2nd year	Replacements for Compulsory	Practical Study Project on System Safety Engineering(1-3)①		
	Elective or Replacements for Elective-Compulsory	Learning through Study Project on System Safety Engineering(1-3)⑥		
	Elective	e-Advanced lecture on structural integrity assessment O		
		e-Advanced lecture on Safety management in medical devices and clinical systems E		
		Advanced Fire and Explosion(2) O		
		Advanced lecture on robotics(2-3) O		
		Advanced Lecture of Safety in Collaborative Robots(2) E		Advanced Business Risk Management(3)
		Advanced Noise and Vibration Engineering(2) E		Legal Engineering(2)① O
		Advanced Human Factors(2) E		Advanced Intellectual Property Rights and Technology Security Governance(2) E
		Fundamentals of Functional Safety(2)		Legal safety(2)① E
		Advanced Analysis of Accident Information(1-2)① O		Advanced Organizational Management(1-2)
		Advanced lecture on information security(2)① E		Advanced Management Engineering(1) O
		Electrical Safety Design(1)	Advanced lecture on GIGAKU(1)① O	Industrial/Environmental Technology Policy(1)
		Safety technology based on the global safety standards(1)		Management of Technology(1)
	Elective-Compulsory	**Construction of Safety System(2)**		
		Safety Logic(1)		
		Advanced lecture on risk assessment(1)		**Advanced Occupational Safety Management(1-2)**
		Safety design of industrial system(1)	**Advanced Safety Certification and Safety Diagnosis(3)**	**Advanced Safety Management(2)**
	Compulsory	Research Ethics 1(1)①, Research Ethics 2(1)①		
1st year	Compulsory	System Safety Study I(1-2)①	System Safety Study II(2-3)①	
		Introduction of System Safety(1)①		

Note) Numbers in parentheses: Course term; Encircled numbers: Number of credits (if not written, the subjects is worth 2 credits); O: Subjects offered during odd-numbered years; E: Subjects offered during even-numbered years.

Subject Organizational Diagram (excluding Common Subjects and Special Course Subjects.)

Attached Table (Curriculum Table) (Applicable to students who matriculate in AY 2026)

Compulsory/ Elective	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Compulsory	System Safety Study I	1	1			Staff	Taken in 1st year ★
	System Safety Study II	1		1		Staff, ※Hoshi	Taken in 1st year ★
	System Safety Study III	1	1			Staff, ※Sugita	Taken in 2nd year ★
	System Safety Study IV	1	1			Staff	Taken in 2nd year ★
	Introduction of System Safety	1	1			※Abe (M), Tsuda, Houjo, ※Hoshi	Taken in 1st year ★
	Research Ethics I	1	1			Houjo, ※Takeda (S)	★
	Research Ethics II	1	1			Houjo, ※Nakano	★
	Total	7					
Elective-Compulsory	Advanced Occupational Safety Management	2	2			Houjo, ※Oga & Matsukura	
	Advanced Safety Management	2		2		Yamagata , Zhang & ※Yoshizawa	★
	Advanced Safety Certification and Safety Diagnosis	2			2	※Asai, ※Yoshikawa & ※Shimizu	
	Safety Logic	2	2			※Hata	★
	Advanced lecture on risk assessment	2	2			Kimura (T), ※Matsuda	★
	Safety design of industrial system	2	2			※Nakamura, ※Tanabe (I), ※Shimizu	★
	Construction of Safety System	2		2		Miyoshi, ※Kushibiki	★ □
	Total	14					
Elective	Overseas Internship	2	2			Staff	Taken in 2nd year ★
	Domestic Internship	1	1			Staff	Taken in 2nd year
	Industrial/Environmental Technology Policy	2	2			Yamagata	★
	Management of Technology	2	2			Yamagata	★
	Advanced Organizational Management	2	2			Tsuda	
	Advanced Business Risk Management	2			2	※Ogane	
	Fundamentals of Functional Safety	2		2		Sakai	
	Safety technology based on the global safety standards	2	2			※Tsukiyama	
	Electrical Safety Design	2	2			Sakai	
	Advanced Intellectual Property Rights and Technology Security Governance	2		2		※Yoshii	E
	Advanced Fire and Explosion	2		2		Suzuki (M), ※Sato (D)	O ★
	Advanced Noise and Vibration Engineering	2		2		※Abe (M), ※Taura, ※Fujino	E ★
	Advanced Lecture of Safety in Collaborative Robots	2		2		Miyoshi	E ★
	Advanced lecture on robotics	2		2		Miyazaki, ※Onishi (M), ※Ohishi	O
	Advanced lecture on GIGAKU	1	1			Kimura (T), ※Taura, ※Kitagawa, ※Nabeshima	O
	Advanced Analysis of Accident Information	1	1			Zhang	O I ★ □
	Advanced lecture on information security	1		1		Kimura (T), Zhang, ※Nakamura	E I
	Advanced Management Engineering	2		2		Tsuda	O
	Advanced Human Factors	2		2		Miyachi	E
	Legal safety	1		1		※Hongan	E
	Legal Engineering	1		1		※Okamoto (T)	O
	Advanced lecture on structural integrity assessment	2		2		Otsuka (Y), ※Nakatani	e-learning O ★ □
	Advanced lecture on Safety management in medical devices and clinical systems	2		2		Otsuka (Y), ※Nozawa	e-learning E ★ □
	Total	40					

※ indicates an adjunct lecturer.

In the Notes column, "E" indicates subjects conducted during even-numbered years according to the Reiwa Calendar, "O" indicates subjects offered during odd-numbered years according to the Reiwa Calendar, "I" indicates information subject recommended to be taken, "★" indicates subjects conducted in both Japanese and English, and "□" indicates subject available for on-demand classes.

Common Subjects

1. Objectives of the Common Subjects

In Nagaoka University of Technology's Master's Program, the vision of human resource development is the production of leading engineers and researchers who are adept at using information technology, have acquired a safety mindset, and possess advanced practical and creative abilities that can facilitate the global expansion of technology. To this end, the following three items have been set as attainment targets in the Diploma Policy (DP, or Policy on Degree Conferment). Common subjects are offered to students in all majors to facilitate their acquisition of the abilities and qualities related to these targets.

2. Subject Organization

The common subjects are organized into the following 10 groups to support the development of the aforementioned abilities and qualities related to the three items of DP.

○Flexible thinking abilities in science and technology (No. 2 of DP)

A. Ability to utilize the concepts and techniques of mathematics and data science.
B. Ability to comprehend technology from the perspectives of life, people, and society.
C. Trained to understand and conceptualize combined technologies involving multiple specialized fields.

○Strategic technological development and research abilities (No. 3 of DP)

D. Possess the language and logical skills needed to form the basis for understanding, thinking, expression, and dialogue.
E. Ability to consider the effects of technology on safety and environment.
F. Trained to have technological development and research skills that can interpret trends in global society and industries.

○Global technology science leadership skills (No. 4 of DP)

G. Ability to communicate about technology in English.
H. Ability to collaboratively work within a team with an international perspective.
I. Ability to perform international competitive activities fairly as an organizational member.

* J. Includes content from multiple groups (A to I).

The university selects the subjects related to Information, Economics and Management, and safety as recommended subjects to learn as engineers. The subjects indicated as "Safety" in the remarks of Attached Table are the subjects related to safety and ones indicated as "Information, Economics and Management" in the remarks of Attached Table are the subjects related to Economics and Management. These subjects are elective and students are strongly recommended to take.

3. Subject Requirements and Criteria

With the exception of subjects for students in graduate school special courses, all common subjects are elective. Students except major in System Safety Engineering require 6 credits or more from these subjects.

Credits for "Cross-cultural Mapping: Developing Your Cultural Awareness" will be awarded based on a total of 2 months or more of overseas experience (applicable only to educational and research activities conducted at a graduate school). In order to acquire credits, students must attend 3 lectures (intensive) and submit a report before departing for the overseas experience. Therefore, students intending to acquire credits for this subject should take these lectures in advance.

Correspondence Table of Diploma Policy and Subjects in Common Subjects and Special Subjects for International Students

	Diploma Policy			
	2. Flexible conceptualization abilities in science and technology	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**	
	Common Subjects			**Special Subjects for International Students**
Master's Program 1st-2nd year	Modern Mathematics, Theory of Mathematical Analysis, Sports Bio-mechanics, Social Welfare, Introduction of Cognitive Science, Language and Thought, Advanced Psychology	Advanced Safety Engineering, Advanced Safety and Information Security 1 & 2, Science and Technology in Modern Society, Decarbonization System, Advanced Business Management, Practical Work on Venture Flotation Training 1, Practice of Idea Prototyping, Japanese Industrial Development and SDGs, Gigaku Innovation and Creativity, An outline of Intellectual Property, Theory of Solving Regional Issues Overseas, Introduction to the SDG Practice	Technological English, English for Science and Technology, English For Academic Purposes, Analytical Reasoning and Presentation, Professional Discourse and Presentation, Fundamental English for Graduate Students, English Presentation Skills, Language and Understanding of Other Cultures, Cross-cultural Mapping: Developing Your Cultural Awareness, Character's in Modern Japanese Literature, Chinese Thought and Society, Social Skills Considering from Diversity, Role of Creativity and Leadership Development in Enterprise and Business, International Relations, Theory of Solving Regional Issues Overseas, Introduction to the SDG Practice	Japanese for Graduate Students 1-1 & 1-2, Japanese for Graduate Students 2-1 & 2-2, Japanese for Graduate Students 3-1 & 3-2, General Affairs of Japan for Graduate Students 1-1 & 1-2

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Group	Subject Name	Credits	1st Year to 2nd Year Term 1	Term 2	Term 3	Lecturer-in-Charge	Notes
Elective	A	Modern Mathematics	2		●		Kumagai	K Information
		Theory of Mathematical Analysis	2	●			Yamamoto (Ke)	K ☐ Information
	B	Sports Bio-mechanics	2	●			Okushima	☐
		Social Welfare	2		●		※Yoneyama	
		Introduction of Cognitive Science	2	●			※Kitajima	☐
		Language and Thought	2		●		Kano & Shigeta	☐
		Advanced Psychology	2	●			※Yamakawa	☐
	E	Advanced Safety Engineering	2		●		※Kadowaki	Safety
		Science and Technology in Modern Society	2	●			※Kurihara	☐
		Advanced Safety and Information Security 1	1		●		Miyoshi, ※Ogino & Itoh(Kosuke)	Safety
		Advanced Safety and Information Security 2	1		●		Miyoshi & ※ Sakurai(Tsu)	Safety
	F	Decarbonized System	2	●			Li	Economics and Management
		Advanced Business Management	2		●		※Takeda(A)	Economics and Management
		Japanese Industrial Development and SDGs	2		●		Katsumi(T)	☆ A K Economics and Management
		Gigaku Innovation and Creativity	2	●			Manada	☆ ☐
		An outline of Intellectual Property	2	●			※ Yoshii	
		Practice of Idea Prototyping	2	●	●		※Kaida, Yamazaki & Adlin	Same content both 1st term & 2nd term
		Practical Work on Venture Flotation Training 1	2		●		Yamaguchi, ※Katagawa & ※( )	★ Economics and Management
	G	Technological English	2		●		Ikarashi	★ ☐
		English for Science and Technology	2	●			Takahashi(M)	★
		English for Academic Purposes	2	●			※Takahashi (A)	★
		Fundamental English for Graduate Students	2		●		Fujii	① ★ ☐
		English Presentation Skills	2	●			Nobuhara	★
		Analytical Reasoning and Presentation	2	●			※ Moulinos	① ☆
		Professional Discourse and Presentation	2		●		※ Moulinos	① ☆

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Group	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
Elective	H	Language and Understanding of Other Cultures	2	●			Kano	□
		Characters in Modern Japanese Literature	2	●			※Wakabayashi	
		Chinese Thought and Society	2	●			Hasegawa	
		Cross-cultural Mapping: Developing Your Cultural Awareness	2		●		Kano	□
		Social Skills Considering from Diversity	2	●			※Koguchi, ※Yamamoto (M), & Nanko	□
		Role of Creativity and Leadership Development in Enterprise and Business	2		●		※Kaida	
Elective	I	International Relations	2	●			※Kuroda	
	J	Introduction to the SDG Practice	2		●		Nanko, ( ) & ※Katsumi (M)	★
		Theory of Solving Regional Issues Overseas	2		●		※Takimoto & Sasaki(Toru)	☆ A Students who have earned credits for SDGs-recognizing limitations and challenges cannot take this
Total			66					

1) ※ in the lecturer-in-charge column indicates an adjunct lecturer, and ( ) indicates that the lecturer is undecided

【Symbols in the Notes Column】

- ①: Recommended to be taken in the first year of Master's Program
- E: Conducted during even-numbered years according to the Reiwa Calendar
- O: Conducted during odd-numbered years according to the Reiwa Calendar
- ◎: Conducted in Japanese during even-numbered years and in English during odd-numbered years according to the Reiwa Calendar
- ●: Conducted in Japanese during odd-numbered years and in English during even-numbered years according to the Reiwa Calendar
- ☆: Conducted in English
- ★: Conducted in both Japanese and English
- A: Can be conducted in English for SDG Professional Course students
- S: SDG Professional Course students are strong encouraged to take this subject
- □: Subject Available for On-Demand Classes
- K: Industry-Associated Subject for Teacher's License Certification

The subjects indicated below are elective and students are strongly recommended to take.

Information

Safety

Economics and Management

Special Subjects for International Students

"Japanese for Graduate Students" and "General Affairs of Japan for Graduate Students" subjects are offered only to international students. "Japanese for Graduate Students" subjects account for 6 credits and "General Affairs of Japan for Graduate Students" subjects account for 4 credits, for a total of 10 credits.

In order to take the aforementioned subjects excluding 'General Affairs of Japan for Graduate Students 1-2', students must first take a Japanese language placement test before subject registration.

A maximum of 2 credits earned from these subjects will be counted as common study subject credits for program completion.

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term			Lecturer-in-Charge	Notes
			1	2	3		
Elective	Japanese for Graduate Students 1-1	1	●			Katano	
	Japanese for Graduate Students 1-2	1		●		Katano	
	Japanese for Graduate Students 2-1	1	●			Nagano	
	Japanese for Graduate Students 2-2	1		●		Nagano	
	Japanese for Graduate Students 3-1	1	●			Lee Iizuka	
	Japanese for Graduate Students 3-2	1		●		Lee Iizuka	
	General Affairs of Japan for Graduate Students 1-1	2	●			Kano	
	General Affairs of Japan for Graduate Students 1-2	2		●		Kano	☆
	Total	10					

【Symbols in the Notes Column】

☆: Conducted in English

Subjects Related to the Practical Study Project for Master's Students

1. Background and Objectives

At NUT, fourth-year undergraduate students who intend to advance to graduate school spend approximately 5 to 6 months in a Jitsumu-Kunren internship at private corporations, public corporations, or government agencies in Japan or overseas. During these internships, the students associate with people who are actively working in related fields, and conduct research on their designated topics with guidance from the on-site host supervisors. In this way, students learn the demands of society for technology, recognize the purpose of academic knowledge, and find a place to demonstrate their creativity. This also allows students to gain practical skills and a better understanding of technology. The students have shown a high degree of satisfaction with this education system through surveys, and society also has a high regard of NUT students who have finished this course (e.g., personnel from corporations have an improved impression of NUT students).

With the aim of nurturing the development of practical and innovative engineers capable of playing an active role at the international level, master's students will also spend a minimum of 3 months participating in the Practical Study Project related to their research topics at overseas universities, research institutions, or corporations (research laboratories). Through this program, students will learn to adopt a global perspective toward research and development, recognize their place and their country's place in the world, and experience working in collaboration with researchers and engineers with different cultures and customs. In this way, NUT aims to deepen master's research, as well as instill in graduates the abilities to assess and act with a wide perspective and consider multiple factors when carrying out their duties as engineers.

2. Subject Organization

① During this Practical Study Project, students will be unable to take subjects that are held at the university. Therefore, students take the following 3 types of subjects as a set, in principle, when participating in the Practical Study Project:

- Replacement subjects for compulsory subjects (seminars, advanced/special experiments) in the affected term
- Major elective subjects
- Specified common subject (A student do not need to take this subject in a case such as if s/he has already earned 6 or more credits of common subjects. If a student is unable to register during the normal subject registration period, the Division of Academic Affairs will compile a list of all students intending to take the subject and contact the lecturer-in-charge. Students will not directly contact the lecturer-in-charge.)

② As shown in the attached table, students can take the subjects available in their own majors, and the credits earned can be accepted as credits for compulsory or elective subjects in the relevant major.

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory/Elective			Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Performance Evaluation/ Notes
Major Subjects	Mechanical Engineering	Replacements for Compulsory Subjects	Practical Study Project on Mechanical Engineering	3		●		Staff	Evaluations will be conducted by each student's academic supervisor based on their research activities during the Practical Study Project. Students may replace this subject with one subject from Mechanical Engineering Seminars 1–4, and one subject from Mechanical Engineering Special Practicals 1–2. For second-year students taking this subject, Mechanical Engineering Special Practicals 1–2 can be replaced with elective major subjects.
		Elective	Learning through the Study Project on Mechanical Engineering	6		●		Staff	◇
	Electrical, Electronics and Information Engineering	Replacements for Compulsory Subjects	Practice and Training through the Study Project on Electrical, Electronics and Information Engineering	1	●			Staff	Overall evaluations will be made by each student's academic supervisor based on the results of research activities conducted at the host institution, assessments by the host supervisor, and the content of reports (including seminar-equivalent content). This subject can only be taken during the first or second terms, and can be replaced with one subject from Seminar on Electrical, Electronics and Information Engineering 1A –4B.
		Elective	Learning through the Study Project on Electrical, Electronics and Information Engineering	6	●			Staff	◇ Students may only take this subject if they are taking Practice and Training through the Study Project on Electrical, Electronics and Information Engineering.
		Elective	Learning, Practice and Training through the Study Project on Electrical, Electronics and Information Engineering	7			●	Staff	Overall evaluations will be made by each student's academic supervisor based on the results of research activities conducted at the host institution, acquisition of knowledge/techniques (and corresponding attitude) associated with their research topics, and the content of reports on applied engineering. Students taking this subject cannot simultaneously take Practice and Training through the Study Project on Electrical, Electronics and Information Engineering and Learning through the Study Project on Electrical, Electronics and Information Engineering.
	Information and Management Systems Engineering	Replacements for Compulsory Subjects	Practical Study Project on Information and Management Systems Engineering	3		●		Staff	Students may replace this subject with one subject from Information and Management Systems Seminar 1–4, and one subject from Advanced Design of Information and Management Systems 1–2. For second-year students taking this subject, Advanced Design of Information and Management Systems 1–2 can be replaced with Overseas Advanced Design of Information and Management Systems.
		Elective	Overseas Advanced Design of Information and Management Systems	2		●		Staff	This subject is for second-year students. Students are not allowed to take this subject independently. Second-year students who have taken Practical Study Project on Information and Management Systems Engineering may replace it with this subject as an elective.
		Elective	Overseas Special Exercises in Technical English	1	●			Staff	① Students who have participated in the Practical Study Project in the first term of their first year may replace this with Special Exercises in Technical English.
		Elective	Learning through the Study Project on Information and Management Systems Engineering	6		●		Staff	◇ Students may only take this subject if they are taking Practical Study Project on Information and Management Systems Engineering.
	Materials Science and Bioengineering	Replacements for Compulsory Subjects	Practical Study Project on Materials Science and Bioengineering	3		●		Staff	Evaluations will be conducted by each student's academic supervisor based on their research activities during the Practical Study Project. Students may replace this subject with one subject from Seminar on Materials Science and Technology 1–4, and one subject from Advanced Experiments of Materials Science and Technology 1–2.
		Elective	Learning through the Study Project on Materials Science and Bioengineering	4		●		Staff	◇

Compulsory/Elective			Subject Name	Credits	1st Year to 2nd Year Term 1 2 3	Lecturer-in-Charge	Performance Evaluation/ Notes
Major Subjects	Civil and Environmental Engineering	Replacements for Compulsory Subjects	Practical Study Project on Civil and Environmental Engineering	3	●	Staff	Students may replace this subject with one subject from Seminar on Civil and Environmental Engineering 1–4, and one subject from Research Work of Civil and Environmental Engineering 1–2. (For M2 students taking this subject, Research Work of Civil and Environmental Engineering 1–2 can be replaced with elective major subjects.)
		Elective	Learning through the Study Project on Civil and Environmental Engineering	4	●	Staff	◇
	Nuclear Technology	Replacements for Compulsory Subjects	Practice and Training through the Study Project on Nuclear System Safety Engineering	1	●	Staff	Master's students participating in Practice and Training through the Study Project may replace this subject with one subject from Seminar on Nuclear Safety Engineer 1 –4.
		Elective	Learning through the Study Project on Quantum Science and Radiation	2	●	Staff	◇ Students taking Practice and Training through the Study Project on Nuclear System Safety Engineering may choose to take a maximum of 2 subjects from the Learning through the Study Project subjects.
		Elective	Learning through the Study Project on Nuclear Technology	2	●	Staff	
		Elective	Learning through the Study Project on Advanced Energy Engineering	2	●	Staff	
	System Safety Engineering	Replacements for Compulsory Subjects	Practical Study Project on System Safety Engineering	1	●	Staff	Evaluations will be made by each student's academic supervisor based on the content of their practical research and development activities conducted at the host institution. Depending on the student's research topic, this subject may be used to replace the most relevant subject from System Safety Study 1–4.
		Elective or Replacements for Elective Compulsory Subjects	Learning through Study Project on System Safety Engineering	6	●	Staff	◇ For a total of 6 credits, this subject may be used to replace elective-compulsory subjects or used to earn credits from elective subjects that are related to the student's research topic.
Common Subjects		Elective	Cross-cultural Mapping: Developing Your Cultural Awareness	2	●	Kano	Students will take 3 lectures (intensive) and submit a report prior to the Practical Study Project. Students will also submit a post-Practical Study Project report on what they learned about different cultures during their Practical Study Project. Evaluations will be based on both the pre- and post-Practical Study Project reports.

1) ※ in the lecturer-in-charge column indicates an adjunct lecturer, and ( ) indicates that the lecturer is undecided

【Symbols in the Notes Column】

①: Recommended to be taken in the first year of the Master's Program

◇: Each student's grade will be determined by their academic supervisor based on preliminary studies of the research to be conducted at the host institution, as well as reports on applied engineering submitted during the Practical Study Project

Program Guide

Graduate School of Engineering

Doctoral Program in Engineering

1. Overview

This Program Guide addresses the required curricula, subject requirements is based on Article 64 of the Rules of NUT, and program completion criteria for students of Nagaoka University of Technology (hereafter referred to as "NUT") is based on Article 69 of the same rules. The guide was prepared by the Academic Affairs Committee on January 20, 2026.

The criteria described here are applicable to students matriculating in 2025.

If there are revisions to the curricula, subject requirements, and graduation criteria, Revisions to the Curriculum Table and other necessary documents will be distributed to enrolled students at the guidance sessions for each academic year conducted at the start of April.

NUT was established as a New Concept University for engineering, with an emphasis on a graduate school that conducts education and research centered on the development of practical technologies.

As such, the mission of NUT is to create new knowledge and technologies, as well as to cultivate human resources with a high level of expertise and creativity. The principle that underlies education and research at NUT is the development of creative abilities associated with *Gigaku* — the science of technologies.

NUT's doctoral program aims to develop personnel who can conduct fundamental and applied research with a clear sense of purpose, and are able to drive developmental research in pioneering technologies that anticipate industrial demands.

The purpose of this program is to develop practical and creative researchers and engineers with a strong foundation of scientific knowledge and the advanced capabilities required to conduct independent research. In addition, NUT aims to train researchers and engineers who can drive academic research using a wide perspective and flexible thinking ability, as well as possess the enthusiasm and motivation to develop research results into new actual technologies. The curricula are designed according to the objectives of each individual major, and are effectively organized to provide a seamless and consistent education with the master's program.

2. Subjects, Credits and Period of Classes

The subjects and credits offered by each department in the doctoral program are detailed in the provided subject lists.

The standard amount of time required to earn 1 academic credit involves content for 45 hours of studying, and is calculated using the following criteria:

① Lectures: 15 hours of classes and 30 hours of preparation/review = 1 credit.

② Exercises (Reading and Discussion/Seminar): 30 hours of classes and 15 hours of preparation/review= 1 credit

For details on each subject, please refer to the online version of the Syllabus (URL: https://www.nagaokaut.ac.jp/student/class/syllabus/index.html)

The period of classes is set by the academic year. The academic year is divided into three terms; 1st term, 2nd term and 3rd term.

[Terms]

1st term: April 1 to August 31, 2nd term: September 1 to December 31, 3rd term: January 1 to March 31

Class Timetable will be posted at the beginning of the academic year and uploaded on our official website. Students are required to develop a study plan based on the Class Timetable.

（URL：https://www.nagaokaut.ac.jp/e/student/class/timetable/index.html）

3. Subject Registration

(1) The subjects will, in principle, be conducted strictly according to the curriculum for each major.

(2) Students must register for all subjects that they intend to take during the subject registration period at the start of the first term and second term in which each subject (including intensive lecture subjects) begins.

(3) At the start of each academic year, the Division of Academic Affairs will post Class Timetable on the university's official website.

(4) At the start of each school term, the Division of Academic Affairs will distribute a *Guide to Subject Registration* and a *Subject Registration Form*.

(5) Students must carefully refer to this Program Guide and the Class Timetable, develop a study plan with guidance from their academic supervisors, and register online for subjects based on the posted guides during the subject registration period for each term.

(6) Students must submit the *Subject Registration Form* to the lecturer-in-charge of each intended subject during the subject registration period in order to obtain approval for attending classes.

(7) Students must check the results of their subject registration application online during the subject registration period. After checking the subject registration results, students may (under guidance from their academic supervisors) make modifications, additions, or cancellations to the registered subjects if necessary. These changes must be recorded online during the registration revision period after subject registration.

(8) If a student must cancel registration for a subject due to an unavoidable reason after the registration revision period, the student must submit a *Subject Cancellation Form* to the Division of Academic Affairs.

(9) Although some intensive lecture subjects may have undecided class schedules during the subject registration period, students are still required to register for these subjects (as described in item [2] above) if they wish to take them. In these cases, a registration cancellation period will be provided, and students must follow the cancellation procedure if they no longer wish to take a subject. Students should take note of the registration cancellation procedure and period for intensive lecture subjects, which will be posted on notice boards, etc.

(10) Students are not allowed to take intensive lecture subjects with schedules that completely or partially overlap with other subjects. In such cases, students must cancel their registration for one of the overlapping subjects during the registration cancellation period. If students are found to have taken two subjects with overlapping schedules without cancelling their registration for one, they may be given a failing grade for both subjects.

(11) Please note that if a student has not cancelled registration for a subject and fails to attend classes or sit for an examination, the student will receive an automatic failure for that subject.

4. Examinations and Performance Evaluation

(1) In principle, examinations will be conducted at the end of the school term to conclude the subject. However, examinations may also be conducted at other times at the discretion of the lecturer-in-

charge, with these interim examinations taking the place of the final examination. In addition, some subjects may utilize daily evaluations or reports in place of the final examination.

(2) Students are evaluated using the following grades: S, A, B, C, and D, which are detailed below.

Grade	Achievement Level	Points	GP
S	Student has thoroughly fulfilled the academic objectives of the subject and has achieved outstanding results	90–100	4
A	Student has thoroughly fulfilled the academic objectives of the subject	80–89	3
B	Student has fulfilled the academic objectives of the subject	70–79	2
C	Student has fulfilled the minimal academic objectives of the subject	60–69	1
D	Student has not fulfilled the academic objectives of the subject	0–59	0

* GP (Grade Point) refers to the points obtained for each grade.
S, A, B, and C are considered passing grades.

(3) Students who pass the final examination of a subject will receive the prescribed credits for that subject. Credits that have already been acquired cannot be cancelled or modified by repeating the subject.

(4) The Grade Point Average (GPA) system has been implemented since 2014 to provide an indicator that allows the comprehensive evaluation of academic achievement, as well as to conform to international grading evaluation schemes.

(5) The GPA is calculated using a credit-weighted average of the GP from all subjects taken by a student, regardless of pass/fail status. However, subjects that are unrelated to program completion are excluded from calculation. In cases where a student has prematurely dropped a subject or failed to sit for an examination, the student will receive a GP score of “zero” for that subject, but its credits shall still be included in the denominator for GPA calculation. GPAs are calculated to 2 decimal places.

(6) Students are to check their subject results online during the following periods: Middle of August for the first term, beginning of February of the subsequent year for the second term, and beginning of March for the third term. Students are to check the bulletin board for details along with the notice indicated in (7).

(7) The University has a grade appeal system for students when they have any concerns regarding evaluations/grades. Check the bulletin board for details, as students will need to fulfil conditions for application of grade appeal.

5. Subject Requirements

Students must earn 42 credits or more (including the 30 credits earned during the master’s program) to complete the doctoral program.

6. Program Completion

(1) In order to complete the doctoral program, students must have been enrolled at the Graduate School of Engineering for a minimum of 5 years (for students who have completed the master’s program, the 2-year duration of that program will be counted toward the requisite years for the doctoral

program), earned the prescribed credits, undertaken the necessary research work, submitted their doctoral thesis, and passed the necessary thesis screening and final examination. However, with regard to the period of enrollment, students with particularly outstanding academic performance may be allowed to complete the program after being enrolled for only 3 years or more (for students who have completed the master's program, the 2-year duration of that program will be counted toward the requisite years for the doctoral program).

(2) The doctoral thesis must be submitted before the prescribed deadline during the student's enrollment period.

7. Application for Thesis Screening and Degree Conferral

Applications for thesis screening and degree conferral are to be conducted based on NUT's Degree Rules and the Regulations of Handling of Thesis/Dissertation Screening.

8. Other Points to Note

For undergraduate-level and master's program subjects (limited to subjects where credits have yet to be acquired), the credits acquired will be recognized but will not count toward the credits required for completion of the doctoral program.

Guide to Major Programs

(Doctoral Program in Engineering)

Energy Engineering

1. Although scientific and technological progress has enabled humanity to build advanced civilizations through industrialization, maintaining Japan's level of prosperity requires the development of systems that are suited to Japan's natural environment and can address national challenges such as energy development, energy device development, and energy conservation. However, there is also a need to resolve the complex social problems (e.g., population, urbanization, resource utilization, and the environment) arising from the discordance between nature and human society as a whole.
2. This major focuses on conducting comprehensive developmental research to resolve the aforementioned problems faced by modern society. This involves research on energy systems (ranging from energy development to energy conservation), as well as their underlying energy conversion/control technologies and energy materials development designed to improve device performance.
3. As shown in the Attached Table, this major offers specialized education subjects for Energy System Engineering, Energy Conversion and Control Engineering, and Energy Materials Engineering.
4. All lecture subjects from among those described above are elective. As these subjects are based on each individual lecturer's field of study, there is a high degree of specialization. Therefore, it is important for students to select the subjects while considering their future personal applicability. When choosing elective subjects, students are encouraged to refer to the Program Guide and to seek guidance from their academic supervisors.
5. Journal club sessions (compulsory) are conducted in the research laboratory of each student's academic supervisor. However, there may be cases where the sessions are jointly conducted by two or more laboratories with similar specialties.
6. The doctoral thesis will be based on the consolidated results of research conducted over the three years of the doctoral program under the guidance of the academic supervisor. Students are encouraged to present their doctoral research content at scientific meetings and conferences in their field of study while they are enrolled at NUT.

Research Guidance Plan

The standard schedule for the progression and completion procedures for students enrolling in April and completing in March is as follows:

(1) Research Laboratory Assignment

Decided at the time of tentative acceptance after passing the entrance examination (October, February)

(2) Schedule

D1, April: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

D1, April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

When planning is complete, each student will outline the proposal in a “Research Plan”, and submit it to the academic supervisor. Based on the student’s research plan, the academic supervisor will prepare a “Research Guidance Plan” and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Guidance Plan” will be clarified to the student.

D1, From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses.

Subsequently, students will proceed with data collection and analysis using the established research methods. In addition to research guidance, students will receive instruction from their academic supervisors on other aspects, such as how to prepare figures and tables for external presentations, organize and cite references, draft scientific papers, and presentation methods.

From D2 onwards, April to July: Review of the research plan

Through consultations with the academic supervisors, the students will review their research topics and plans. At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

The interim presentation will be held during the one-year period in D2.

Degree Application Year

End of November to Early December: Submission of the *Application Form for Dissertation Screening for Doctoral Degree* and other documents

End of January to Early February: Submission of the doctoral dissertation, etc.

Early February: Doctoral dissertation presentation, doctoral dissertation screening, and final examination

March: Graduation ceremony

Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Energy Engineering

	Diploma Policy			
	1. Research implementation abilities	**2. Ability to pioneer unexplored areas**	**3. Giving back to society through research findings**	**4. Leadership to guide research and development**
Doctoral Program **1st-3rd Grade**	Doctoral Dissertation Energy Science 1 & 2 Advanced Thermal Energy Engineering, Advanced Engineering for Fluid Energy, Advanced Engineering for Energy Conversion and Control, Advanced Engineering for Power Electronics and Mechatronics, Advanced Engineering for Electrochemical Energy, Advanced Superconducting Material Engineering, Advanced Ceramic Engineering for Energy Harvesting, Advanced Course on Energy Conversion Materials Science and Engineering, Advanced Decarbonization System, Advanced Engineering for Plasma and Nuclear Fusion, Advanced Engineering for High Energy Density Plasma, Applied Nuclear Chemistry, Advanced Environmental Radioactivity, Advanced Biomaterials and Bioengineering, Advanced Ion Beam Engineering, Advanced Nuclear System Engineering, Advanced Engineering for Sound and Vibration Energy Control, Practical work for project leader education Researcher Ethics	Doctoral Dissertation Energy Science 1 & 2 Advanced Thermal Energy Engineering, Advanced Engineering for Fluid Energy, Advanced Engineering for Energy Conversion and Control, Advanced Engineering for Power Electronics and Mechatronics, Advanced Engineering for Electrochemical Energy, Advanced Superconducting Material Engineering, Advanced Ceramic Engineering for Energy Harvesting, Advanced Course on Energy Conversion Materials Science and Engineering, Advanced Decarbonization System, Advanced Engineering for Plasma and Nuclear Fusion, Advanced Engineering for High Energy Density Plasma, Applied Nuclear Chemistry, Advanced Environmental Radioactivity, Advanced Biomaterials and Bioengineering, Advanced Ion Beam Engineering, Advanced Nuclear System Engineering, Advanced Engineering for Sound and Vibration Energy Control, Practical work for project leader education	Doctoral Dissertation Practical work for project leader education Researcher Ethics	Doctoral Dissertation Practical work for project leader education Researcher Ethics

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 3rd Year Term 1	Term 2	Term 3	Lecturer-in-Charge	Notes
Compulsory	Energy Science 1	3	●			Staff (3 lecturers)	
	Energy Science 2	3		●		Staff (3 lecturers)	
	Researcher Ethics	1	●	●		Staff	Take this subject in the 1st or 2nd term after consultation with academic advisor
	Total	7					
Elective	Advanced Thermal Energy Engineering	2		●		Yamada (N) & Suzuki (M)	
	Advanced Engineering for Fluid Energy	2		●		Takahashi (T) & Yamazaki (W)	
	Advanced Engineering for Energy Conversion and Control	2		●		Itoh (J)	
	Advanced Engineering for Power Electronics and Mechatronics	2	●			Miyazaki, Yokokura & Miura	
	Advanced Engineering for Electrochemical Energy	2	●			Shironita	
	Advanced Superconducting Material Engineering	2		●		( )	Not Conducted in 2026
	Advanced Ceramic Engineering for Energy Harvesting	2	●			Honma(Tsu)	
	Advanced Course on Energy Conversion Materials Science and Engineering	2		●		Takeda	
	Advanced Decarbonization System	2		●		Li	
	Advanced Engineering for Plasma and Nuclear Fusion	2	●			Kikuchi	
	Advanced Engineering for High Energy Density Plasma	2	●			Sasaki (T)	
	Applied Nuclear Chemistry	2	●			Suzuki (T)	
	Advanced Environmental Radioactivity	2	●			Ohta (T)	
	Advanced Biomaterials and Bioengineering	2	●			Tagaya	
	Advanced Ion Beam Engineering	2	●			Takahashi(Kazumasa)	
	Advanced Engineering for Sound and Vibration Energy Control	2	●			Kobayashi(Y)	
	Advanced Nuclear System Engineering	2		●		Takezawa	
	Practical work for project leader education	3	●	●	●	Staff	
	Total	37					

All subjects in this table may be taken in English. Students who wish to take lectures in English should confirm this with the lecturer-in-charge when submitting the *Subject Registration Form.*

【Symbols in the Notes Column】

・ Subjects marked with an "S" are offered as part of the Advanced Safety Engineering Course

Information Science and Control Engineering

1. The fields of science and technology have entered a stage in which new value is created through the integration of various highly specialized disciplines. For example, it would not be possible to achieve space exploration, ocean development, or robotics based solely on the results from a single field of study.
2. Taking into account the trend described above in item (1), this major is divided into Intelligent Information Systems Engineering, Mathematical Information Systems Engineering, and Precision Control Engineering. In addition to developing computing technologies, information and communications technologies, intelligent information processing technologies, and signal processing technologies, this major aims to systematize the technologies for integrating information from these different sources. The Information Science and Control Engineering major also creates new systematized technologies by promoting the development of advanced machine mechanisms and production system control technologies through the organic combination of improvements to ultraprecise measurement control and ultraprecise processing technologies with astute decision-making and awareness.
3. As shown in the Attached Table, this major offers specialized education subjects for Intelligent Information Systems Engineering, Mathematical Information Systems Engineering, and Precision Control Engineering.
4. All lecture subjects from among those described above are elective. As these subjects are based on each individual lecturer's field of study, there is a high degree of specialization. Therefore, it is important for students to select the subjects while considering their future personal applicability. When choosing elective subjects, students are encouraged to refer to the Program Guide and to seek guidance from their academic supervisors.
5. Journal Club sessions (compulsory) are conducted in the research laboratory of each student's academic supervisor. However, there may be cases where the sessions are jointly conducted by two or more laboratories with similar specialties.
6. The doctoral thesis will be based on the consolidated results of research conducted over the three years of the doctoral program under the guidance of the academic supervisor. Students are encouraged to present their doctoral research content at scientific meetings and conferences in their field of study while they are enrolled at NUT.

Research Guidance Plan

(1) Research Laboratory Assignment

<Internal advancement students> Decided at the time of tentative acceptance after passing the entrance examination for the doctoral program (May, October, February)

<Enrollees from outside NUT> Decided at the time of tentative acceptance after passing the entrance examination for the doctoral program and consultation with the Program Chair or prospective academic supervisor (October, February)

(2) Schedule (For Students Completing in March)

D1, April: Deciding on the students' academic supervisors

April: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

D2, April: Review of the research topic

Students consult with their academic supervisors to review their research topics.

April to July: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

November: Interim presentation and assessment of the doctoral dissertation (Student Research Presentation)

The interim presentation and assessment will be conducted in November during the first year after enrollment in the doctoral program.

D3, April: Review of the research topic

Students consult with their academic supervisors to review their research topics.

April to July: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Guidance Plan” will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

End of October to End of November: Preliminary screening

End of November to Early December: Submission of the *Application Form for Dissertation Screening for Doctoral Degree*, dissertation summary, and *Plagiarism Declaration Form for Dissertation*

End of January: Submission of the doctoral dissertation, list of papers, dissertation abstract (approximately 2,000 Japanese characters or 500 English words), and curriculum vitae

End of January to February: Doctoral dissertation presentation

Doctoral dissertation screening and final examination

March: Graduation ceremony

(3) Schedule (For Students Enrolling in September and Completing in August)

D1, September: Deciding on the students’ academic supervisors

September: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

September to November: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.

From September onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

D2, September: Review of the research topic

Students consult with their academic supervisors to review their research topics.

September to November: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their

academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.
November: Interim presentation and assessment of the doctoral dissertation (Student Research Presentation)
The interim presentation and assessment will be conducted in November during the first year after enrollment in the doctoral program.

D3, September: Review of the research topic
Students consult with their academic supervisors to review their research topics.
September to November: Review of the research plan
Students will review their research plans together with their academic supervisors.
At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student. After that, the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.
April to Early May: Preliminary screening
Early May: Submission of the *Application Form for Dissertation Screening for Doctoral Degree*, dissertation summary, and *Plagiarism Declaration Form for Dissertation*
Mid-June: Submission of the doctoral dissertation, list of papers, dissertation abstract (approximately 2,000 Japanese characters or 500 English words), and curriculum vitae
June to Early July: Doctoral dissertation presentation
Doctoral dissertation screening and final examination
August: Graduation ceremony

Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Information Science and Control Engineering

	Diploma Policy			
	1. Research implementation abilities	**2. Ability to pioneer unexplored areas**	**3. Giving back to society through research findings**	**4. Leadership to guide research and development**
Doctoral Program **1st-3rd Grade**	Doctoral Dissertation Information Science and Control Engineering 1 & 2 Advanced Computer Science, Advanced Finite Element Analysis, Nonlinear System Design, Advanced Information Circuit Engineering, Advanced Nonlinear Optics, Advanced Signal and Image Processing, Advanced Topics in Control Systems Engineering, Feedforward Control Theory, Advanced Data Management, Advanced Precision Machining, Advanced Design of Machine Elements, Advanced Dynamical Systems Engineering, Informatics for Human Society and Industry, Advanced Social Informatics, Information and Mathematical Science for Engineering, Advanced Biomedical Engineering, Neuroimaging and Biosignal Processing, Advanced course for Machine and Motor Control, Advanced Living System, Advanced Data Science and Management, Sports physiology and engineering, Practical work for project leader education Researcher Ethics	Doctoral Dissertation Information Science and Control Engineering 1 & 2 Advanced Computer Science, Advanced Finite Element Analysis, Nonlinear System Design, Advanced Information Circuit Engineering, Advanced Nonlinear Optics, Advanced Signal and Image Processing, Advanced Topics in Control Systems Engineering, Feedforward Control Theory, Advanced Data Management, Advanced Precision Machining, Advanced Design of Machine Elements, Advanced Dynamical Systems Engineering, Informatics for Human Society and Industry, Advanced Social Informatics, Information and Mathematical Science for Engineering, Advanced Biomedical Engineering, Neuroimaging and Biosignal Processing, Advanced course for Machine and Motor Control, Advanced Living System, Advanced Data Science and Management, Sports physiology and engineering, Practical work for project leader education	Doctoral Dissertation Practical work for project leader education Researcher Ethics	Doctoral Dissertation Practical work for project leader education Researcher Ethics

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 3rd Year Term 1	Term 2	Term 3	Lecturer-in-Charge	Notes
Compulsory	Information Science and Control Engineering 1	3	●			Staff (3 lecturers)	
	Information Science and Control Engineering 2	3		●		Staff (3 lecturers)	
	Researcher Ethics	1	●	●		Staff	Take this subject in the 1st or 2nd term after consultation with academic advisor
	Total	7					
Elective	Advanced Computer Science	2	●			Yukawa	
	Advanced Finite Element Analysis	2		●		Kurahashi	
	Nonlinear System Design	2	●			Tsubone	
	Advanced Information Circuit Engineering	2		●		Iwahashi, Harakawa	
	Advanced Nonlinear Optics	2		●		Tanaka (K), Kato & Unuma	
	Advanced Signal and Image Processing	2	●			Sugita	
	Advanced Topics in Control Systems Engineering	2		●		Kimura (T)	S
	Feedforward Control Theory	2	●			Miyoshi	S
	Advanced Data Management	2		●		Zhang(K)	S
	Advanced Precision Machining	2	●			Isobe	
	Advanced Design of Machine Elements	2		●		Ohta	
	Advanced Dynamical Systems Engineering	2	●			Toyoda	E
	Informatics for Human Society and Industry	2		●		Watahiki & Nakahira	
	Advanced Social Informatics	2	●			Hayama	
	Information and Mathematical Science for Engineering	2	●			Yamamoto (Ke) & Manada	
	Advanced Biomedical Engineering	2	●			Nomura, Akimoto, Doi & Oiwa	
	Neuroimaging and Biosignal Processing	2	●			Nambu	
	Advanced course for Machine and Motor Control	2		●		Endo	
	Advanced Living System	2	●			Nishiyama	
	Advanced Data Science and Management	2	●			Kumoi	

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 3rd Year Term 1	2	3	Lecturer-in-Charge	Notes
Elective	Sports physiology and engineering	2	●			Okushima & Ohashi	
	Practical work for project leader education	3	●	●	●	Staff	
	Total	45					

All subjects in this table may be taken in English. Students who wish to take lectures in English should confirm this with the lecturer-in-charge when submitting the *Subject Registration Form.*

【Symbols in the Notes Column】

E：Conducted during even-numbered years according to the Reiwa Calendar

・Subjects marked with an "S" are offered as part of the Advanced Safety Engineering Course

Materials Science

1. At present, the application conditions for materials have become highly complex and stringent. There is also an immense variety of materials available, such as metallic materials, inorganic materials, organic materials, and composite materials manufactured by combining and integrating different materials. Furthermore, recent material design has reached the quantum level, which takes into account the behavior of molecules and atoms. The development of new materials can be considered the cornerstone of technological innovation, and is critically important for the promotion of creative and independent technological advancements.
2. This major focuses on conducting research on the development of novel structural materials a nd high-performance/high-function materials that meet the diverse needs of various science and t echnology fields. Research is also conducted on the analysis and assessments of material reliabil ity for the design and manufacture of components and structures.
3. As shown in the Attached Table, this major offers specialized education subjects for Structur al Material Engineering, Functional Material Engineering, and Material Reliability Engineering.
4. All lecture subjects from among those described above are elective. As these subjects are based on each individual lecturer's field of study, there is a high degree of specialization. Therefore, it is important for students to select the subjects while considering their future personal applicability. When choosing elective subjects, students are encouraged to refer to the Program Guide and to seek guidance from their academic supervisors.
5. Journal club sessions (compulsory) are conducted in the research laboratory of each student's academic supervisor. However, there may be cases where the sessions are jointly conducted by two or more laboratories with similar specialties.
6. The doctoral thesis will be based on the consolidated results of research conducted over the t hree years of the doctoral program under the guidance of the academic supervisor. Students are e ncouraged to present their doctoral research content at scientific meetings and conferences in thei r field of study while they are enrolled at NUT.

Research Guidance Plan

The standard schedule for the progression and completion procedures for students completing in March is as follows:

(1) Research Laboratory Assignment

<Internal advancement students> After the master's thesis presentation (March)

<Enrollees from outside NUT>

· Enrollees from other universities: After tentative acceptance for the doctoral program, the decision is made following consultation with the Program Chair or prospective academic supervisor (February to March)

(2) Schedule (For Students Completing in March)

D1, April: Deciding on the students' academic supervisors

April: Deciding on the research topic

Students consult with their academic supervisors to determine their research topics.

April to July: Development of the research plan

Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

The students will mainly focus on conducting preliminary experiments and investigations in order to establish research methods. Through consultations with the academic supervisors, the students will review the plans for the preliminary experiments and investigations as appropriate. The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month.

D2, April: Review of the research topic

Students consult with their academic supervisors to review their research topics.

April: Review of the research plan

Students will review their research plans together with their academic supervisors.

At that time, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan.

They will proceed with data collection and analysis using the established research methods.

The students will undergo periodic checks on their research progress by their academic supervisors. Based on their progress, the students will receive research guidance on the experimental/investigation methods and data analyses approximately 1 to 4 times per month, and review their research plans.
In principle, the interim presentation and assessment of the doctoral dissertation will be conducted during D2. The academic supervisors will provide guidance on presentation methods.

D3, April: Review of the research topic
Students consult with their academic supervisors to review their research topics.
April: Review of the research plan
Students will review their research plans together with their academic supervisors.
At that time, use the “Research Plan” to document it and submit it to the Program Chair. After the Program Chair confirms its content, the “Research Plan” will be clarified to the student.
From April onwards: Conduct research
Students will carry out research in accordance with the research plan.
They will proceed with data collection and analysis using the established research methods, and consolidate their findings into their doctoral dissertation. Students will receive research instruction from their academic supervisors on how to prepare their doctoral dissertation, such as the structure of the dissertation, preparation of figures and tables, and organization and citation of references approximately 1 to 4 times per month.
Mid- to Late November: Submission of the *Application Form for Dissertation Screening for Doctoral Degree* and other documents
End of November to Mid-February: Submission of the doctoral dissertation, etc., Doctoral dissertation presentation
Mid- to Late February: Doctoral dissertation screening and final examination
March: Graduation ceremony

(3) Presentation of Research Findings
Reporting of research findings as a published paper.

Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Materials Science

	Diploma Policy			
	1. Research implementation abilities	**2. Ability to pioneer unexplored areas**	**3. Giving back to society through research findings**	**4. Leadership to guide research and development**
Doctoral Program **1st-3rd Grade**	Doctoral Dissertation Materials Science 1 & 2 Creation of Advanced Materials, Advanced Diffraction Physics, Advanced Course of Inorganic Structural Materials Science, Advanced Course of Precise Molecular Design, Advanced Organic Functional Materials Science, Advanced Organic Solid State Chemistry, Advanced Course for Functional Materials Science, Advanced Physical Characteristics of Materials, Advanced Optical Device Engineering, Advanced Electroceramics, Advanced Course for Fracture Control, System Design for Structural Safety, Advanced Engineering on Functional Inorganic Materials, Advanced Interface Science, Advanced Manufacturing DX System, Advanced Control Engineering for Electromagnetic and Optical Waves, Advanced Molecular Robotics, Advanced Course for Crystal Engineering, Advanced Computational Materials Science, Practical work for project leader education Researcher Ethics	Doctoral Dissertation Materials Science 1 & 2 Creation of Advanced Materials, Advanced Diffraction Physics, Advanced Course of Inorganic Structural Materials Science, Advanced Course of Precise Molecular Design, Advanced Organic Functional Materials Science, Advanced Organic Solid State Chemistry, Advanced Course for Functional Materials Science, Advanced Physical Characteristics of Materials, Advanced Optical Device Engineering, Advanced Electroceramics, Advanced Course for Fracture Control, System Design for Structural Safety, Advanced Engineering on Functional Inorganic Materials, Advanced Interface Science, Advanced Manufacturing DX System, Advanced Control Engineering for Electromagnetic and Optical Waves, Advanced Molecular Robotics, Advanced Course for Crystal Engineering, Advanced Computational Materials Science, Practical work for project leader education	Doctoral Dissertation Advanced Manufacturing DX System, System Design for Structural Safety, Practical work for project leader education Researcher Ethics	Doctoral Dissertation Practical work for project leader education Researcher Ethics

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 3rd Year Term 1	2	3	Lecturer-in-Charge	Notes
Compulsory	Materials Science 1	3	●			Staff (3 lecturers)	
	Materials Science 2	3		●		Staff (3 lecturers)	
	Researcher Ethics	1	●	●		Staff	Take this subject in the 1st or 2nd term after consultation with academic advisor
	Total	7					
Elective	Creation of Advanced Materials	2	●			Nanko	
	Advanced Diffraction Physics	2		●		Homma (To)	O
	Advanced Course of Inorganic Structural Materials Science	2		●		Tanaka (S)	
	Advanced Course of Precise Molecular Design	2	●			Maekawa	
	Advanced Organic Functional Materials Science	2		●		Kawahara	
	Advanced Organic Solid State Chemistry	2		●		Imakubo	
	Advanced Course for Functional Materials Science	2	●			Takahashi(Y)	
	Advanced Physical Characteristics of Materials	2		●		Saitoh(H)	
	Advanced Optical Device Engineering	2		●		Kimura (M)	
	Advanced Electroceramics	2		●		Okamoto (T)	
	Advanced Course for Fracture Control	2		●		Miyashita (Y)	
	System Design for Structural Safety	2		●		Otsuka (Y)	S
	Advanced Engineering on Functional Inorganic Materials	2	●			Ishibashi & Nishikawa	
	Advanced Interface Science	2		●		Funatsu	
	Advanced Manufacturing DX System	2	●			Nakayama	
	Advanced Control Engineering for Electromagnetic and Optical Waves	2		●		Ono, Tamayama & Sasaki(T)	
	Advanced Molecualr Robotics	2		●		Shoji	
	Advanced Course for Crystal Engineering	2		●		Aida	
	Advanced Computational Materials Science	2	●			Yamashita(To)	
	Practical work for project leader education	3	●	●	●	Staff	
	Total	41					

All subjects in this table may be taken in English. Students who wish to take lectures in English should confirm this with the lecturer-in-charge when submitting the *Subject Registration Form.*

【Symbols in the Notes Column】

E : Conducted during even-numbered years according to the Reiwa Calendar

O : Conducted during odd-numbered years according to the Reiwa Calendar

・ Subjects marked with an "S" are offered as part of the Advanced Safety Engineering Course

Civil Engineering and Bioengineering

1. Scientific and technological progress has enabled humanity to build advanced civilizations through industrialization. However, the continuous development of technologies that overemphasize humanity's convenience has greatly impacted society's safety and environmental sustainability. There are many problems arising from the discordance between nature and human society as a whole, such as the occurrence of increasingly catastrophic natural disasters, worsening of living environments and public health in massive cities, as well as environmental destruction and the loss of biodiversity at the global level. To solve these problems, it is necessary to build societies that are sustainable. Accordingly, there is an unprecedented increase in society's demands for the establishment of technologies to maintain civil infrastructure, advanced disaster resilience and mitigation technologies, environmentally friendly technologies, energy conservation and resource circulation technologies, and safe and secure living infrastructure technologies.

2. In order to resolve the aforementioned problems faced by society, this major is divided into three fields: Civil Infrastructure and Disaster Resilience System Engineering, Environmental Management Engineering, and Environmental and Biological Engineering. Herein, we conduct research and education on the development of technologies that can be applied to the improvement of social living through environmental conservation, health care, and welfare. These technologies include the construction and maintenance of sustainable civil infrastructure systems equipped with advanced disaster resilience and mitigation technologies, situation-specific environmental cleanup systems and their operating technologies, and functions derived from living organisms or biomolecules.

3. As shown in the Attached Table, this major offers specialized education subjects on Civil Infrastructure and Disaster Resilience System Engineering, Environmental Management Engineering, and Environmental and Biological Engineering.

4. All lecture subjects from among those described above are elective. As these subjects are based on each individual lecturer's field of study, there is a high degree of specialization. Therefore, it is important for students to select the subjects while considering their future personal applicability. When choosing elective subjects, students are encouraged to refer to the Program Guide and to seek guidance from their academic supervisors.

5. Journal Club sessions (compulsory) are conducted in the research laboratory of each student's academic supervisor. However, there may be cases where the sessions are jointly conducted by two or more laboratories with similar specialties.

6. The doctoral thesis will be based on the consolidated results of research conducted over the three years of the doctoral program under the guidance of the academic supervisor. Students are required to present their doctoral research content at scientific meetings and conferences in their field of study while they are enrolled at NUT.

7. This major includes subjects offered by the Advanced Safety Engineering Course. Students enrolled in this course must earn 6 credits or more from subjects marked with an "S" in the course's Attached Table.

Research Guidance Plan

○ Standard Schedule for Doctoral Dissertation Screening Procedures, etc. (For Students Completing in March)

First year, April: Deciding on the students' academic supervisors

April to July: Deciding on the research topic and development of the research plan

When planning is complete, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student.

From April onwards: Conduct research

Students will carry out research in accordance with the research plan. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

Second year, April: Review of academic supervisors and research topics

April to July: Review of the research plan

After reviewing the plan, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

September: Interim presentation

Third year, April: Review of academic supervisors and research topics

April to July: Review of the research plan

After reviewing the plan, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

September to December: Submission of preliminary documents for doctoral dissertation screening to the academic supervisor

- Dissertation summary (approximately 300 Japanese characters or 100 English words)
- List of papers
- Dissertation abstract (approximately 2,000 Japanese characters or 500 English words)

(For dissertation doctorates and early completion doctorates)

September to December: Preliminary doctoral dissertation screening

January to February: Submission of documents for doctoral dissertation screening to the academic supervisor

・Doctoral dissertation
・Offprints from published papers included in the list of papers
・List of accomplishments (dissertation doctorates only)
・Documents certifying research history (dissertation doctorates only)
・Documents certifying highest educational level attained (dissertation doctorates only)

January to February: Doctoral dissertation screening

March: Graduation ceremony

○ Standard Schedule for Doctoral Dissertation Screening Procedures, etc. (For Students Enrolling in September and Completing in August)

First year, September: Deciding on the students' academic supervisors

September to December: Deciding on the research topic and development of the research plan

When planning is complete, use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

From December onwards: Conduct research

Students will carry out research in accordance with the research plan.

Second year, September: Review of academic supervisors and research topics

September to December: Review of the research plan

After reviewing the plan, use the "Research Plan" to document it submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

June: Interim presentation

Third year, September: Review of academic supervisors and research topics

September to December: Review of the research plan

use the "Research Plan" to document it and submit it to the Program Chair. After the Program Chair confirms its content, the "Research Plan" will be clarified to the student. After that the students will undergo periodic checks on their research progress by their academic supervisors, who will provide research guidance based on their progress approximately 1 to 4 times per month.

February to May: Submission of preliminary documents for doctoral dissertation screening to the academic supervisor

・Dissertation summary (approximately 300 Japanese characters or 100 English words)
・List of papers

・Dissertation abstract (approximately 2,000 Japanese characters or 500 English words)
(For dissertation doctorates and early completion doctorates)

February to May: Preliminary doctoral dissertation screening

June to July: Submission of documents for doctoral dissertation screening to the academic supervisor

・Doctoral dissertation

・Offprints from published papers included in the list of papers

・List of accomplishments (dissertation doctorates only)

・Documents certifying research history (dissertation doctorates only)

・Documents certifying highest educational level attained (dissertation doctorates only)

June to July: Doctoral dissertation screening

August: Graduation ceremony

Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Civil Engineering and Bioengineering

	Diploma Policy			
	1. Research implementation abilities	**2. Ability to pioneer unexplored areas**	**3. Giving back to society through research findings**	**4. Leadership to guide research and development**
Doctoral Program **1st-3rd Grade**	Doctoral Dissertation Civil, Environmental, and Biological Engineering 1 & 2 Advanced Lecture on Disaster Control and Revitalization Advanced Hybrid Materials and Structures Advanced Estimation of Materials Life-time or Remaining Life-time Advanced steel structural engineering Advanced Urban Transportation Planning Advanced Urban and Regional Planning Advanced Hydrospheric Engineering Advanced Course of Disaster Management Advanced Geotechnical Engineering Integrated Plant Biotechnology Molecular Neuroengineering Advanced Course of Applied Microbial Technology Practical work for project leader education Researcher Ethics	Doctoral Dissertation Civil, Environmental, and Biological Engineering 1 & 2 Advanced Environmental Engineering Advanced Engineering for Global Environmental Measurement Advanced Course of Biomaterial Engineering Advanced Course of Plant Genetic Engineering Advanced Course of Environmental and Applied Biochemistry Advanced Course of Glycobiology and Glycotechnology Advanced Stem cell Technology Biorefinery Development Genetic Engineering - Advanced Course Biological systems in molecular motility Advanced Course of Microbiology for Environmental Engineering Practical work for project leader education	Doctoral Dissertation Practical work for project leader education Researcher Ethics	Doctoral Dissertation Practical work for project leader education Researcher Ethics

Attached Table (Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 3rd Year Term 1	2	3	Lecturer-in-Charge	Notes
Compulsory	Civil, Environmental, and Biological Engineering 1	3	●			Staff (3 lecturers)	
	Civil, Environmental, and Biological Engineering 2	3		●		Staff (3 lecturers)	
	Researcher Ethics	1	●	●		Staff	Take this subject in the 1st or 2nd term after consultation with academic advisor
	Total	7					
Elective	Advanced Lecture on Disaster Control and Revitalization	2	●			Kamimura(S)	S
	Advanced Hybrid Materials and Structures	2	●			Shimomura	
	Advanced Estimation of Materials Life-time or Remaining Life-time	2		●		Takahashi (O)	
	Advanced steel structural engineering	2		●		Iwasaki	
	Advanced Urban Transportation Planning	2		●		Sano	
	Advanced Urban and Regional Planning	2		●		Matsukawa	
	Advanced Hydrospheric Engineering	2	●			Hosoyamada, Kumakura & Inukai	
	Advanced Environmental Engineering	2		●		Yamaguchi, Himeno & Maki	
	Advanced Course of Disaster Management	2	●			Ikeda	
	Advanced Geotechnical Engineering	2		●		Toyota	
	Advanced Engineering for Global Environmental Measurement	2		●		Takahashi (K)	
	Advanced Course of Biomaterial Engineering	2	●			Kuwabara	
	Advanced Course of Plant Genetic Engineering	2	●			Nishimura	
	Advanced Stem Cell Technology	2	●			Ohnuma	
	Advanced Course of Applied Microbial Technology	2		●		Masai	
	Integrated Plant Biotechnology	2		●		Takahara	
	Advanced Course of Environmental and Applied Biochemistry	2		●		Takahashi (S)	
	Advanced Course of Glycobiology and Glycotechnology	2		●		Sato (T)	
	Biorefinery Development	2		●		Ogasawara	
	Molecular Neuroengineering	2		●		Shimoda	
	Genetic Engineering - Advanced Course	2		●		Kasai	
	Biological systems in molecular motility	2	●			Fujiwara	
	Advanced Course of Microbiology for Environmental Engineering	2	●			Hatamoto	
	Practical work for project leader education	3	●	●	●	Staff	
	Total	49					

All subjects in this table may be taken in English. Students who wish to take lectures in English should confirm this with the lecturer-in-charge when submitting the *Subject Registration Form.*

【Symbols in the Notes Column】

・ Subjects marked with an "S" are offered as part of the Advanced Safety Engineering Course

Nuclear System Safety Regulatory Course

(Course for All Master's Programs, including the Nuclear Technology)

Nuclear System Safety Regulatory Course
(Course for All Master's Programs, including the Nuclear Technology)

1. Overview

This postgraduate-level course is designed to train practical engineers with an overall understanding of system safety that incorporates knowledge of nuclear power and other disciplines, and also have a practical understanding of nuclear power plants' regulatory systems from an engineer's perspective and the ability to further improve safety.

Building on the foundation of knowledge in students from the Nuclear Technology, this course aims to nurture the development of individuals who can take a comprehensive view of nuclear power regulatory systems from an engineer's perspective, and possess the technical expertise to solve safety-related issues in nuclear systems.

Nuclear systems involve the comprehensive and integrated application of various fields, including mechanical engineering, electrical engineering, civil engineering, and materials science. Therefore, this course would also be beneficial for students who are not enrolled in the Nuclear Technology, as the systematic acquisition of knowledge that can contribute to improving nuclear system safety combined with their own specialized expertise will support the development of practical engineers who can play critical roles in safety improvement.

2. Course Outline

① Subject Requirements

Students from all master's programs may take this course. Students who wish to enroll must take the Specialized Engineering subjects (Refer to the course curriculum table in Table 1) offered by the Nuclear Technology.

② Course Application

Students who wish to take this course must submit the *Application Form for the Nuclear System Safety Regulatory Course* to the Division of Academic Affairs (scheduled for the first subject registration period in the first and second terms).

③ Course Completion

The completion of this course requires that students earn the necessary credits from the subjects listed in the course curriculum table (Table 1). Students who fulfill the prerequisites for completing the course and the master's program will be issued a certificate of course completion in addition to the master's degree.

Table 1. Nuclear System Safety Regulatory Course Curriculum Table

Course Completion Requirements	Compulsory/Elective	Subject Names	Credits	First to Second Years			Notes
				Term			
				1	2	3	
Acquire ≥6 credits, including those from the compulsory subject	Compulsory	Nuclear Regulation and Safety Management	2	2			★
	Elective	Advanced Engineering for Radiation Safety and Detection	1	1			★ ※1
		Advanced Lecture on Nuclear and Radiochemistry	2	2			★
		Nuclear Reactor Design	2		2		★
		Nuclear Power Reactor and Plant Systems	2	2			※2
		Nuclear Power Plant Engineering	2		2		☆ ※3
		Basics of Nuclear Technology	2	2			★
		Environmental Radioactivity and Biological Impact	2		2		★
		Advanced Safety and Crisis Management	2	2			
		Nuclear Emergency Planning and Resilience Engineering	2		2		

Students not enrolled in the Nuclear Technology may take the above subjects if offered by other departments. However, students must consult with their academic supervisors and register graduate-level subject offered in other majors. Then the students must obtain approval from their academic supervisor if they wish to have these subject(s) counted as master's program completion requirements.

[Symbols in the Notes Column]

★: Conducted in both English and Japanese

☆: Conducted in English

※1: Not Conducted in 2026

※2: Due to content overlap, "Nuclear Power Plant Engineering" cannot be taken together

※3: Due to content overlap, "Nuclear Power Reactor and Plant Systems" cannot be taken together

SDG Professional Course

* This course is offered to the students who passed the entrance examination for the SDG Professoinal Course and have been admitted to the master's program or doctoral program in the course.

SDG PROFESSIONAL COURSE

1. Overview

This graduate-level course incorporates engineering education built on a foundation of Sustainable Development Goals (SDGs), and is designed to produce practical engineers/researchers with high levels of expertise and various perspective, as well as educators of advanced engineering.

In 2015, the United Nations designated a set of 17 global SDGs (addressing issues such as poverty, healthcare, education, and others) to be achieved by 2030. In order to accomplish these goals, it is crucial to further develop and spread science and technology on a global scale. We have committed to this effort by accepting students from a wide range of countries and providing them with a practical education program in collaboration with Japanese industries. In this way, we aim to nurture the development of individuals who can contribute to the development of science and technology, especially in newly industrialized countries.

Since 1994, NUT has conducted the International Graduate Course for Continuing Professional Development (CPD), which has produced over 300 practical engineers and educators from 15 countries. The SDG Professional Course (SDG-P) expands upon the CPD Course with the inclusion of SDG principles, and is a more advanced practical engineering education program. We anticipate that course graduates will be active in various countries throughout the world, help to improve the global level of science and technology, and contribute to the accomplishment of the SDGs.

2. Course Outline

(1) Master's Program

① Subject Requirements

Students enrolled in the SDG Professional Course must earn 6 credits from course-compulsory subjects and 2 or more credits from course-recommended elective-compulsory subjects as stated below (See Attached Table 1). These students are strongly recommended to register for the SDG Professional Course subjects offered by each program.

◆Course-Compulsory Subjects

Japanese Industrial Development and SDGs	2 credits
Gigaku Innovation and Creativity	2 credits
Theory of Solving Regional Issues Overseas	2 credits

◆Course-Recommended Elective-Compulsory Subjects

Internship for SDG-P Course Students	2 credits
General Affairs of Japan for Graduate Students 1-2	2 credits

* In cases where Common Study Subjects (including those listed above) have already been taken, students may include up to 6 credits from the Common Study Subjects required by the relevant program.
* In addition to the subjects listed above, students may also take "Basic Japanese Language Course 1" and "Business Japanese Language for Beginners" as extracurricular subjects. However, in order to take the "Internship for SDG-P Course Students", students must have, in principle, completed "Basic Japanese Language Course 1" and "Business Japanese Language for Beginners" before

registering for the internship.

② Course Completion

In order to complete the course, students must earn 6 credits from course-compulsory subjects, “Japanese Industrial Development and SDGs”, “Gigaku Innovation and Creativity” and “Theory of Solving Regional Issues Overseas”, and 2 or more credits from course-recommended elective-compulsory subjects. Students who fulfill the prerequisites for completing the course and the master’s program will be awarded a Certificate of Completion of the SDG Professional Course in addition to the master’s degree.

In order to complete the master’s program, students must also complete the SDG Professional Course after being admitted.

(2) Doctoral Program

① Subject Requirements

Students enrolled in the SDG Professional Course are required to take the following course-compulsory subject (See Attached Table 2).

◆Course-Compulsory Subject

SDGs Interdisciplinary Joint Project Study 2 credits

This is a course-compulsory subject, and the credits earned from this subject will not count toward the required credits for completing the doctoral program.

* In addition to the subject listed above, students may also take “Basic Japanese Language Course I” and “Business Japanese Language for Beginners” as extracurricular subjects.

② Course Completion

In order to complete the course, students must earn the credits from the course-compulsory subject “SDGs Interdisciplinary Joint Project Study”. Students who fulfill the prerequisites for completing the course and the doctoral program will be issued a Certificate of Completion of the SDG Professional Course in addition to the doctoral degree.

In order to complete the doctoral program, students must also complete the SDG Professional Course after being admitted.

(3) Student Admissions

Students will be admitted to this course if they pass the selection entrance examination for the SDG Professional Course and have been admitted to either the master’s or doctoral programs (including students who have completed the master’s program under this course and advanced to the doctoral program) at the Graduate School of Engineering, NUT.

SDG PROFESSIONAL COURSE

Attached Table 1

Master's Program

Eligible Programs	Subject Classification	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
All Programs	Compulsory (6 Credits)	Japanese Industrial Development and SDGs	2		2		Katsumi(T)	☆ K A Subject is offered from the 1st to 2nd years, but students are encouraged to take the subject in the 1st year.
		Gigaku Innovation and Creativity	2	2			Manada	☆ Subject is offered from the 1st to 2nd years, but students are encouraged to take the subject in the 1st year.
		Theory of Solving Regional Issues Overseas	2		2		※Takimoto & Sasaki(Toru)	☆ Students who have earned credits for SDGs - recognizing limitations and challenges- cannot take this subject.
	Elective-Compulsory (2 Credits)	Internship for SDG-P Course Students	[2]	[2]			Sasaki(Toru), Staff	☆
		General Affairs of Japan for Graduate Students 1-2	2		2		Kano	☆

Note 1: In the "Lecturer-in-Charge" column, ※ indicates an adjunct lecturer

Note 2: [2] indicates credits that do not count toward program completion

Attached Table 2

Doctoral Program

Eligible Programs	Subject Classification	Subject Name	Credits	1st Year to 2nd Year Term 1	2	3	Lecturer-in-Charge	Notes
All programs	Compulsory	SDGs Interdisciplinary Joint Project Study	[2]		[2]		Hatamoto	Subject is offered from the 1st to 2nd years, but students are encouraged to take the subject in the 1st year.

Note 1: [2] indicates credits that do not count toward program completion

【Symbols in the Notes Column】

K: Industry-Associated Subject for Teacher's License Certification

☆: Conducted in English

A: Can be conducted in English for SDG Professional Course students

Applied Safety Engineering Course

(Course for All Master's Programs, including the System Safety Engineering)

Applied Safety Engineering Course (Open to All Majors in the Master's Program Excluding System Safety Engineering)

1. Overview and Objectives

Safety has become more important than ever before due to increasingly sophisticated and complex technologies, large-scale business activities, and society's demands on the activities of organizations and corporations. The continued existence of organizations and corporations is contingent on ensuring safety in the workplace and providing safe goods and services to consumers. In this context, there is a societal need for universities to train individuals who have in-depth expertise that can be applied to safety-related issues and new technologies, logical thinking abilities and creative abilities, as well as excellent problem-solving capabilities for safety-related problems. In other words, there is a widespread need for education and research on safety engineering.

The Applied Safety Engineering Course aims to facilitate the acquisition of fundamental and applied knowledge of safety engineering.

2. Course Outline

(1) Course Requirements

Students must take the common subjects and specialized subjects offered in each major shown in the list of subjects in **Table 1**.

(2) Course Application

This course is open to students in the master's programs of all majors except System Safety Engineering. Students who wish to apply for this course must submit the *Application for the Applied Safety Engineering Course* to the Division of Academic Affairs during the stipulated registration period (scheduled to be the subject registration periods of the First Term and Second Term). When taking a subject, students should carefully check all distributed handouts and follow the procedures.

(3) Course Completion

To complete this course, students must earn a total of 8 credits from the subjects shown in **Table 1**: 4 credits from "Advanced Safety Engineering", "Advanced Safety and Information Security 1", and "Advanced Safety and Information Security 2" (course compulsory subjects); 2 credits from "Advanced Lecture on Risk Assessment" or "Construction of Safety System", which address the foundational knowledge for practical applications of safety engineering (course elective-compulsory subjects ●); and 2 credits from safety-related subjects offered in each of the majors (course elective-compulsory subjects ○).

Students who complete the course will be conferred a certificate of course completion upon graduation from the master's program.

◆Applied Safety Engineering Course（Attached Table 1）

Subject Name	Credits	Compulsory/Elective	Major/Subject Classification	Term
Advanced Safety Engineering	2	**Compulsory**	Common Subjects	2nd Term
Advanced Safety and Information Security 1	1	**Compulsory**	Common Subjects	2nd Term
Advanced Safety and Information Security 2	1	**Compulsory**	Common Subjects	2nd Term
●Advanced lecture on risk assessment	2	**Elective Compulsory (acquire a minimum of 2 credits from "●" subjects)**	Major Subject of System Safety Engineering	1st Term
●Construction of Safety System	2		Major Subject of System Safety Engineering	2nd Term
○Snow and Ice Technology	2	**Elective Compulsory (acquire a minimum of 2 credits from "○" subjects)**	Major Subject of Mechanical Engineering	1st and 2nd Term
○Advanced Course for Mechatronics	2		Major Subject of Electrical, Electronical and Information Engineering	2nd Term
○Advanced Medium Voltage Converters	2		Major Subject of Electrical, Electronical and Information Engineering	1st Term
○Sustainable Development Theory	2		Major Subject of Information and Management Systems Engineering	1st Term
○Energy Economics	2		Major Subject of Information and Management Systems Engineering	1st Term
○Environmental Analytical Chemistry	2		Major Subject of Materials Science and Bioengineering	1st term
○Advanced course of disaster management	2		Major Subject of Civil and Environmental Engineering	1st Term
○Nuclear Power Reactor and Plant Systems	2		Major Subject of Nuclear Technology	1st Term
○Advanced Safety and Crisis Management	2		Major Subject of Nuclear Technology	1st Term
○Nuclear Regulation and Safety Management	2		Major Subject of Nuclear Technology	1st Term
○Nuclear Emergency Planning and Resilience Engineering	2		Major Subject of Nuclear Technology	2nd Term

*To count subjects indicated with ● and subjects from other majors indicated with ○ as completion criteria for the master's program, approval must first be obtained from each student's academic supervisor.

*For subjects indicated with ●, classes will mainly be held on Saturdays, Sundays, and Holidays. Students should only take these subjects after carefully checking the schedule and class methods in the syllabus and distributed handouts. If there are many applications for "Advanced Lecture on Risk Assessment", students may be required to undergo selection for registration. Please refer to the distributed handouts and other materials for details.

Advanced Safety Engineering Course

(Open to All Majors in the Doctoral Program)

Advanced Safety Engineering Course
(Open to All Majors in the Doctoral Program)

1. Overview and Objectives

The importance of safety is now higher than ever before due to increasingly sophisticated and complex technologies, large-scale business activities, and society's demands on the activities of organizations and corporations. The continued existence of organizations and corporations is contingent on ensuring safety in the workplace and providing safe goods and services to consumers.

Under these conditions, there is a societal need for universities to train persons who have in-depth expertise that can be applied to safety-related issues and new technologies, logical thinking abilities and creative abilities, as well as excellent problem-solving capabilities for safety-related problems. There is also a widespread need for education and research on safety engineering.

The Advanced Safety Engineering Course aims to nurture the development of persons with the research abilities that can be applied to safety-related issues and new technologies, as well as the practical abilities to solve safety-related problems. These trained persons will lead innovations as safety experts with both research abilities and practical abilities. In addition, they will also be the driving force for the establishment of international standards that lead global society, and contribute to the further development of Japan.

2. Course Outline

(1) Course Application

Students from any major in NUT's doctoral program can apply to this course. Students who wish to apply to this course should submit the *Advanced Safety Engineering Course Application Form* to the Division of Academic Affairs during the stipulated application period.

(2) Course Requirements and Conditions for Completion

Students enrolled in this course must earn 6 credits or more from subjects marked with an "S" in their majors' Curriculum Tables (Attached Tables). (Check the subjects marked with an "S" in the Curriculum Tables of Energy Engineering, Information Science and Control Engineering, Materials Science, and Civil Engineering and Bioengineering.)

(3) Course Completion

Students who fulfill the prerequisites for completing the course and the doctoral program will be issued a certificate of course completion in addition to the doctoral degree.

E-Learning Subjects

E-learning subjects are open to current students enrolled as credit auditing students and exchange students under credit transfer agreements.

(Applicable to students who enroll in AY 2026)

Compulsory /Elective	Subject Name	Credits	1st Year to 2nd Year Term			Lecturer-in-Charge	Notes
			1	2	3		
Elective	e-Energy Economics	2	●			Li	
	Total	2					

Special Subjects for Exchange Students under Academic Exchange Agreements

The following subjects are offered to exchange students who are attending NUT as part of academic exchange agreements. Subjects are to be taken after discussions with the relevant lecturer-in-charge.

Master's/Doctoral Program (Applicable to students who enroll in AY 2026)

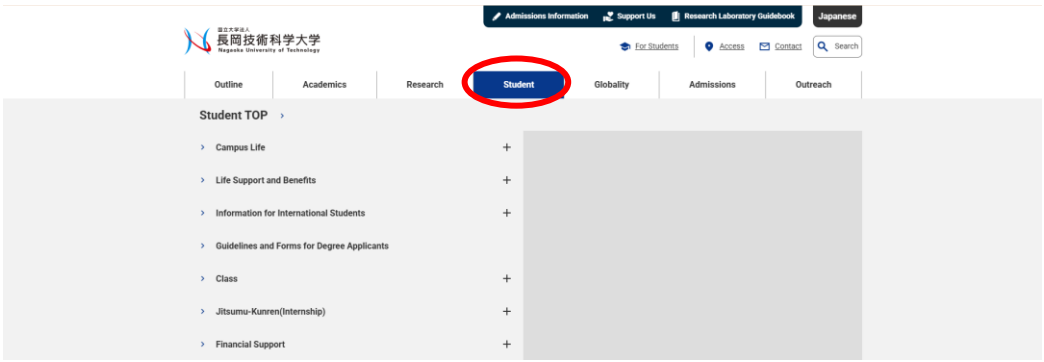
Subject Name	Credits	Term			Lecturer-in-Charge	Notes
		1	2	3		
Research Internship 1	4		●		Staff	Subject Duration: 2 months or longer; shorter than 3 months (More than 60 days but not more than 89 days including holidays) Student may take one subject in either Research Internship 1 or 2.
Research Internship 2	8		●		Staff	Subject Duration: 3 months or longer, shorter than 6 months (More than 90 days but not more than 179 days including holidays) Student may take one subject in either Research Internship 1 or 2.
Project Study GS1	4		●		Staff	Subject Duration: 2 months or longer; shorter than 3 months (More than 60 days but not more than 89 days including holidays)
Project Study GS2	8		●		Staff	Subject Duration: 3 months or longer, shorter than 6 months (More than 90 days but not more than 179 days including holidays)
Project Study GS3	8		●		Staff	Subject Duration: 3 months or longer, shorter than 6 months (More than 90 days but not more than 179 days including holidays) Only students who have completed Project Study GS2 may take this subject.
Total	32					

Notice) Students may take subjects Project Study GS1, GS2 and GS3 in combination, depending on the length of their acce

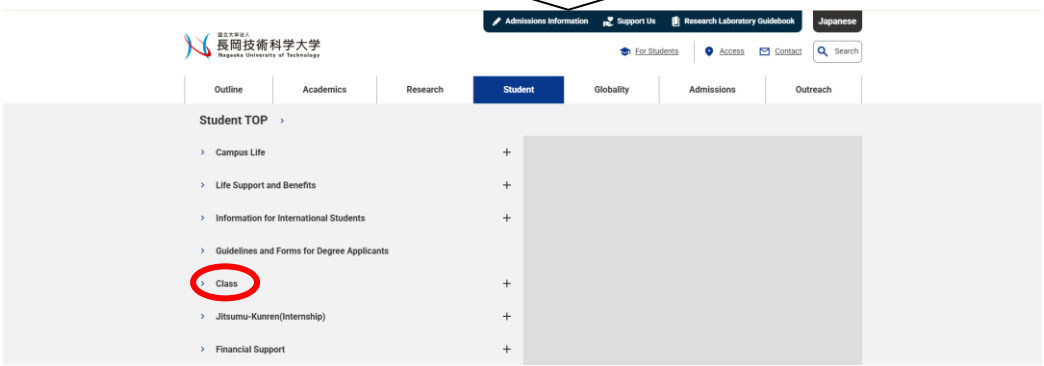
Syllabus

Accessing the Syallabus via Web Browser

Students can search and view Nagaoka University of Technology's syallbus online via web browser.



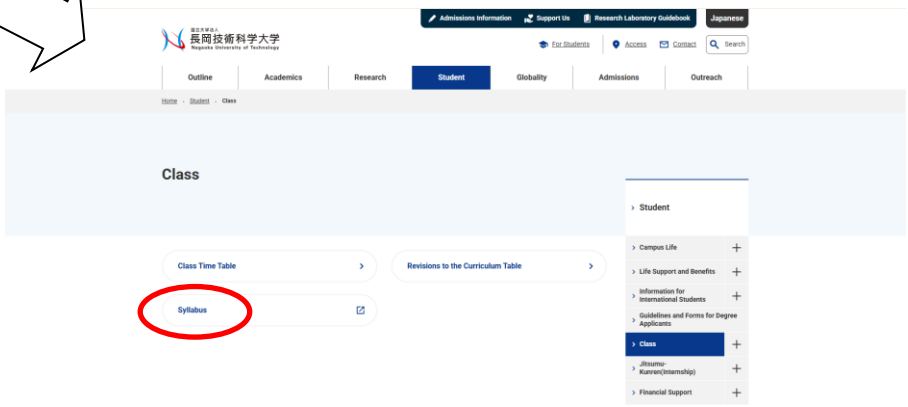
From NUT's official website (nagaokaut.ac.jp/e/), select "Student" tab from the menu

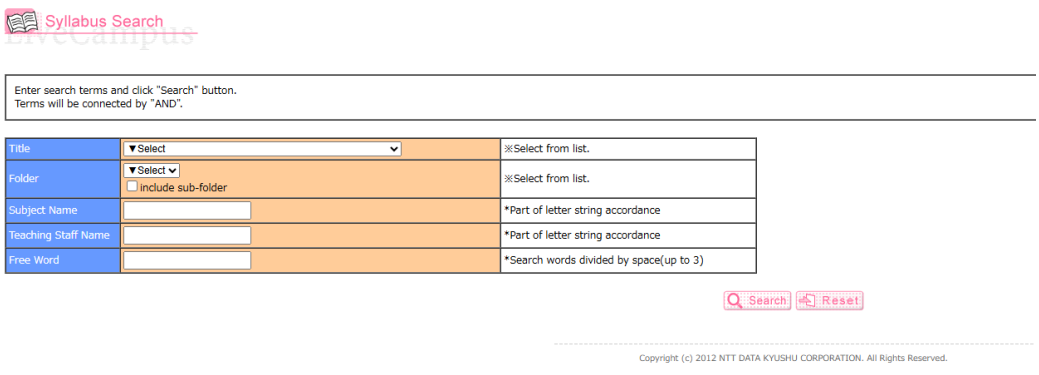


Under "Student",

Select "Class"

Click the link of "Syallabus"





In the "Title" section, select the desired syllabus according to year and undergraduate/graduate program.
Subjects can be searched according to subject classification (Folder), subject name, Teaching Staff Name, and free search word.

School Regulations

(As of February 2026)

National University Corporation Nagaoka University of Technology Rules (Extract)

Chapter 1. General Provisions
Section 1. Purpose
(Purpose)
Article 1. The University aims to, based on the School Education Act (Act No. 26 of 1947), promote research particularly addressing the development of practical technology, as well as to foster leading engineers with practical, creative capability.

Section 5. Academic Year, Terms, and Holidays
(Academic Year)
Article 11 The academic year begins on April 1 and ends on March 31 of the following year.

(Terms)
Article 12 The academic year is divided into three terms.
First term: April 1 to August 31
Second term: September 1 to December 31
Third term: January 1 to March 31

(Holidays)
Article 13 (1) The holidays for the School of Engineering and the Graduate School of Engineering are described as shown below. However, items i to iii are excluded in the System Safety Engineering.
(i) Sundays and Saturdays
(ii) Holidays stipulated in the Act on National Holidays (Act No. 178 of 1948)
(iii) University Foundation Day on October 1
(iv) Spring Vacation: March 26 to April 4
(v) Summer Vacation: July 24 to August 31
(vi) Winter Vacation: December 25 to January 7 of the following year

(2) The President may, when deemed necessary, temporarily change holidays presented in the preceding two paragraphs, or temporarily specify holidays.

Chapter 2. Undergraduate
Section 3. Absence and Withdrawal from School
(Absence from School)
Article 26 (1) A person who is unable to study for two months or more because of illness, volunteer activities, or other special reason may take a leave of absence from school after obtaining permission from the President.
(2) For a person deemed to be unable to study because of illness, the President may order that the student take a leave of absence from school.

(Period of Absence from School)
Article 27 (1) A period of absence from school shall not exceed one year. However, when there is a special reason, the extension of the period of absence from school might be permitted with the limit of one year.
(2) The period of absence from school may not exceed two years in total. However, absences from school for school-sanctioned volunteer activities or for other reasons specified separately shall not be counted for the purposes of this limitation.
(3) The period of absence from school shall not be included in the years of attendance.

(Returning to School)
Article 28 When a reason ceases to exist during absence from school, the person may return to school after obtaining permission from the President.

(Studying Abroad)

Article 29 (1) For a person who applies to study at university or junior college in a foreign country, the President may permit the student to study abroad after hearing the opinions of the Faculty Meeting.

(2) The period studying abroad with the permission in the preceding paragraph might be included in the years of attendance prescribed in Article 46.

(Leaving School)

Article 30 A student who intends to leave school must obtain permission from the President.

(Expulsion from School)

Article 31 Those to whom any of the following items apply shall be expelled from school by the President after hearing the opinions of the Faculty Meeting.

(i) Have exceeded the years of attendance prescribed in Article 15

(ii) Remain unable to study even after the period of absence from school prescribed in Article 27 has passed

(iii) Have gone missing for a long period of time

(iv) Are not granted a waiver or are granted partial waiver among those who have applied for the admission fee waiver, and who have not paid the admission fee by the prescribed date

(v) Have applied for the admission fee postponement and have not paid the admission fee by the designated date

(vi) Are delinquent in the payment of tuition fees and do not pay even after being pressed for the payment

Section 4. Curriculum and Methods of Taking Subjects

(Class Methods)

Article 36 (1) The University shall conduct classes in the form of lecture, seminar, experiment, practical training, or skills practice, or in a combination of them.

(2) The University may have students take the classes described in the preceding paragraph in places other than a classroom where the classes are conducted, using media of various types in a highly advanced manner, as specified separately by the Minister of Education, Culture, Sports, Science and Technology.

(3) The University may have students take the classes in paragraph (1) in foreign countries. The same shall apply to the case in which the University has students take classes in places other than a classroom where the classes are conducted, using media of various types in a highly advanced manner, as prescribed in the preceding paragraph.

(4) The University may conduct part of the classes in paragraph (1) in places other than school buildings and attached facilities, as specified by the Minister of Education, Culture, Sports, Science and Technology.

(Credit Calculation Methods)

Article 37 (1) A class subject with one credit shall be composed of the content requiring 45 hours of learning as standard. The number of credits shall be calculated based on the following standards, according to the class method and considering the educational effects of the class and the learning required outside of the class hours.

(i) With regard to lectures and seminars, one credit shall consist of the number of class hours prescribed separately, ranging from 15 hours to 30 hours.

(ii) With regard to experiments, practical training, and skills practice, one credit shall consist of the number of class hours prescribed separately, ranging from 30 hours to 45 hours.

(2) Despite the provisions of the preceding paragraph, the University may determine the number of credits for some class subjects, such as graduation research, considering the learning, etc. necessary for these activities, when it is deemed to be appropriate to grant credits by evaluating the achievement of such learning.

(Period of Classes for Each Class Subject)

Article 38 Classes of each class subject shall be conducted with 15 weeks as a unit. However, this shall not apply in cases for which it is deemed to be necessary from an educational perspective and able to achieve sufficient educational effects.

(Granting of Credits)

Article 40 The University shall grant students prescribed credits after they have completed a class subject and passed the examination. However, with regard to the class subjects prescribed in paragraph (2) of Article 37, the University may grant credits by evaluating students' academic achievements using an appropriate method.

(Evaluation of Results)

Article 45 Examination results of class subjects shall be presented with five grades of S, A, B, C, and D. Grades S, A, B, and C are passing grades, whereas D is a failing grade. However, in cases that are deemed necessary, the S, A, B, and C grades may be replaced with "Pass", "Equivalent", or "Approval"; and the D grade may be replaced with "Fail" or "Invalid".

Chapter 3. Graduate School

Section 1. Years Required for Graduation

(Standard Years Required for Graduation)

Article 49 (1) The standard number of years required for graduation for the doctoral degree program shall be five years.

(2) The standard number of years required for graduation for the master's programs shall be two years.

(Years of Attendance)

Article 50-1 The 5-year integrated doctoral program, the master's program, and the doctoral program might not be attended for a period exceeding eight years, three years, and five years, respectively.

(Long-term Studying Students)

Article 50-2 Despite the provisions of the preceding two articles, the years required for graduation, the years of attendance, etc. for those who take a course of study over a certain period of time exceeding the standard years required for graduation in a planned manner because of the circumstances such as having an occupation shall be provided for separately.

Section 2. Admissions

(Time of Admission)

Article 51 Admission shall be processed at the beginning of each academic year or the beginning of the second term.

(Eligibility for Admission)

Article 52 (1) Those to whom any of the following items apply shall be eligible to enter the graduate school.

(i) Graduated from a university specified in paragraph (1) of Article 83 of the School Education Act

(ii) Been conferred a bachelor's degree under the provisions of paragraph (4) of Article 104 of the School Education Act

(iii) Completed a 16-year course of school education in a foreign country

(iv) Completed a 16-year course of school education in a foreign country by taking class subjects in Japan through a correspondence course offered by an educational institution in the country

(v) Completed a course of school education in Japan offered by an educational institution in a foreign country that is regarded as having the course of university education under the school education system of the country (limited to those in which a person who has completed the course is regarded as to have completed a 16-years course of school education in the country) and is separately designated by the Minister of Education, Culture, Sports, Science and Technology

(vi) Have been conferred a degree equivalent to a bachelor's degree by completing a course of study for which the years required for graduation are three years or more (including to complete the course by taking the class subjects in Japan through a correspondence course offered by the educational institution in the foreign country and to complete a course at an educational institution that is placed in the school education system in the country and has obtained the designation in the preceding item) at a university or an educational institution in a foreign country (limited to those for whom the overall situation, such as the education and research activities has been

assessed by a person who has received certification from the foreign government or concerned agencies, or that has been designated separately by the Minister of Education, Culture, Sports, Science and Technology as equivalent to them)

(vii) Completed a specialized course at specialized training college (limited to those meeting standards specified by the Minister of Education, Culture, Sports, Science and Technology, such as the number of years required for graduation is four years or more) separately designated by the Minister of Education, Culture, Sports, Science and Technology on or after the day specified by the Minister.

(viii) Are designated by the Minister of Education, Culture, Sports, Science and Technology

(ix) Attended the University for three years or more, or has completed a 15-year course of school education in a foreign country and who are found to have acquired the prescribed credits with excellent results by the President

(x) Are found to have academic ability equivalent to or greater than a university graduate by the President, through an individual admission eligibility screening, and have reached 22 years of age

(2) Those who fall under any of the following items shall be eligible to enter the doctoral programs.

(i) Have a master's degree

(ii) Have a degree specified by the Minister of Education, Culture, Sports, Science and Technology in paragraph (3) of Article 104 of the School Education Act (hereinafter, "professional degree")

(iii) Have been conferred a degree in a foreign country equivalent to a master's degree or a professional degree

(iv) Have taken class subjects in Japan through a correspondence course offered by an educational institution in a foreign country and have been conferred a degree equivalent to a master's degree or a professional degree

(v) Completed a course of school education in Japan offered by an educational institution in a foreign country that is regarded as to have the course of graduate school education under the school education system of the country and separately designated by the Minister of Education, Culture, Sports, Science and Technology and who have been conferred a degree equivalent to a master's degree or a professional degree

(vi) Completed a course of study at United Nations University ("United Nations University" in Article 66) specified in paragraph (2) of Article 1 of the Act on Special Measures Incidental to Enforcement of the "Agreement between the United Nations and Japan regarding the Headquarters of the United Nations University" (Act No. 72 of 1976) and who have been conferred a degree equivalent to a master's degree

(vii) Have taken a course of school education at a school in a foreign country or an educational institution that has received the designation in item (v) or at United Nations University pass the examination and the screening specified in Article 16-2 of the Standards for Establishment of Graduate Schools (Ordinance of Ministry of Education No. 28 of 1974) and are deemed as to have an academic ability equivalent to or greater than a master's degree holder

(viii) Are designated by the Minister of Education, Culture, Sports, Science and Technology

(ix) Are found to have academic ability equivalent to or greater than a master's or professional degree holder by the President, through an individual admission eligibility screening, and have reached 24 years of age

(Application for Admission and Entrant Selection)

Article 53 Provisions from Article 19 through Article 21 shall apply with the necessary modifications to application for admission, selection method, etc.

(Advancement to Doctoral Program)

Article 54 For a person who has completed a master's program at the University and who applies in advance to a doctoral program continuously, the University will permit advancement after making a selection.

(Readmission)

Article 55-1 When a person who was permitted to leave school under the provisions of Article 58 and who applies for readmission to the graduate school, the President may grant admission to the appropriate year after hearing the opinions of the Faculty Meeting as provided for separately at the beginning of the academic year or the beginning of the second term.

(Transfer)

Article 55-2 When a person applies for transfer to theschools school of the University, the President may grant admission to the appropriate year after hearing the opinions of the Faculty Meeting at the beginning of the academic year or the beginning of the second term.

(Third-year Transfer)

Article 55-3 (1) When a person with any of the qualifications listed in paragraph (2) of Article 52 wishes to transfer into the third year of the 5-year integrated doctoral program, the President may grant admission to the third year after hearing the opinions of the Faculty Meeting at the beginning of the academic year or the beginning of the second term.

(2) The handling of previously acquired credits described in the preceding paragraph shall be provided for separately.

(Changes to Programs or Majors)

Article 56 When a person applies to change the program or major, the President may permit to change the program or major to the appropriate year after hearing the opinions of the Faculty Meeting at the beginning of the academic year or the beginning of the second term.

(Handling of Cases of Readmission, Transfer, etc.)

Article 57 The handling of the number of years that a person who has been granted admission, etc. under the provisions in Article 55, paragraph (2) of Article 55 and Article 56 must attend and the credits that the person has already acquired shall be provided for by the President after hearing the opinions of the Faculty Meeting.

Section 3. Absence and Withdrawal from School

(Application with the Necessary Modifications to Absence from, Returning to and Leaving School)

Article 58 The provisions of Article 26, Article 28, and Article 30 shall apply with the necessary modifications to absence from, returning to, and leaving school.

(Period of Absence from School)

Article 59 (1) A period of absence from school shall not exceed one year for each of the 5-year integrated doctoral program, master's programs, and doctoral programs. However, when there is a special reason, the extension of the period of absence from school might be permitted with the limit of one year, respectively.

(2) The period of absence from school shall not exceed two years in total in any of the 5-year integrated doctoral program, master's programs, and doctoral programs, respectively. However, absences from school for school-sanctioned volunteer activities or for other reasons specified separately shall not be counted for the purposes of this limitation.

(3) The period of absence from school shall not be included in the years of attendance.

(Studying Abroad)

Article 60 (1) For a person who applies to study at graduate school in a foreign country, the President may permit study abroad after hearing the opinions of the Faculty Meeting.

(2) The period of studying abroad with the permission in the preceding paragraph might be included in the years of attendance prescribed in Article 69.

(Expulsion from School)

Article 61 Those to whom any of the following items apply shall be expelled from school by the President after hearing the opinions of the Faculty Meeting.

(i) Have exceeded the years of attendance prescribed in Article 50-1 or Article 50-2

(ii) Remain unable to study even after the period of absence from school prescribed in Article 59 has passed

(iii) Are applicable to any of the items, from item (iii) through item (vi) of Article 31

Section 4. Curriculum and Methods of Taking Classes

(Classes and Research Guidance)

Article 62 (1) The education at graduate school shall be conducted in forms of teaching of class subjects and guidance for thesis writing, etc. (hereinafter, "research guidance").

(2) The graduate school shall clearly specify the methods, content, and annual schedule for classes and research guidance to students in advance.

(WISE Program)

Article 62-2

(1) The Doctoral Program for World-leading Innovative & Smart Education (WISE Program) was established with the aim of leading the production and application of new knowledge, as well as the creation of value to drive the next generation. The program will develop a pool of doctoral talent that will undertake the challenges of solving society's problems and bringing about social innovation.

(2) Necessary matters related to the WISE Program shall be provided for separately.

(Special Cases of Education Method)

Article 63-1 The University may, when finding it particularly necessary from an educational perspective, provide education in the graduate programs using appropriate methods, such as conducting classes or research guidance in the evening or other specific hours or time.

(Organizational Training for Improvement of Content of Education)

Article 63-2 The graduate school shall implement organizational training and research to improve the contents and the methods of classes and research guidance.

(Class Subjects)

Article 64 Class subjects and the number of the credits shall be provided for separately.

(Application with the Necessary Modifications to Class Method, etc.)

Article 65 The provisions of Article 36, Article 37, Article 38, Article 40, and Article 45 shall apply with the necessary modifications to class method, credit calculation method, period of classes for each class subjects, granting of credits, and evaluation of results.

(Taking Class Subjects at Other Graduate Schools)

Article 66 (1) In cases for which it is deemed to be effective from the perspective of education and research, when the President finds it appropriate after hearing the opinions of the Faculty Meeting, based on consultations with other graduate schools, the University may regard the credits that students have acquired by completing class subjects at other graduate schools as credits acquired by completing class subjects at the graduate school of the University, to an extent not exceeding 15 credits.

(2) The provisions in the preceding paragraph shall apply with the necessary modifications in cases where students study abroad under the provisions of Article 60, where students take class subjects in Japan through a correspondence course offered by the graduate school in a foreign country, where students take class subjects of a course of study in Japan offered by an educational institution in a foreign country that is regarded to have the course of graduate school education under the school education system of the country and separately designated by the Minister of Education, Culture, Sports, Science and Technology, and where students take class subjects of a course of study at the United Nations University.

(Research Guidance in Other Graduate Schools)

Article 67 (1) In cases for which it is deemed to be effective from the perspective of education and research, based on consultations with other graduate schools or research institutions, the University may permit graduate students to receive necessary research guidance at the other schools, research institutions, etc. However, for cases in which the University permits students in master's programs to do so, the period to receive the research guidance shall not exceed one year.

(2) The provisions of the preceding paragraph shall apply with the necessary modifications in cases where students study at graduate school, etc. abroad.
(3) Necessary matters related to research guidance in other graduate schools, etc. shall be provided for separately.

(Approval of Credits Acquired before Admission)
Article 68 (1) For cases in which it is deemed to be effective from the perspective of education and research, when the President finds it appropriate after hearing the opinions of the Faculty Meeting, the University may regard the credits (including credits acquired as a credited auditor) of class subjects that students have taken at graduate schools (including graduate schools in foreign countries) before entering the graduate school of the University as the credits that are acquired by taking class subjects in the graduate school of University after entering the graduate school of the University.
(2) The number of previously acquired credits that may be regarded as having been acquired at the graduate school of the University under the preceding paragraph shall not exceed 15 credits (excluding transfer admissions). In addition, the total number of these credits combined with the credits regarded as having been acquired at the graduate school of the University under paragraph (1) of Article 66 (including cases that apply to paragraph (2) of the same Article) shall not exceed 20 credits.

Section 5. Completion of Programs and Degrees
(Completion of Master's and Doctoral Programs)
Article 69-1 (1) The requirements for completion of a master's program shall be to attend the graduate school for two years or more, acquire 30 credits or more in the designated class subjects prescribed separately, submit a master's thesis after receiving necessary research guidance, and pass the thesis screening and the final examination. However, with regard to the years of attendance, attending the graduate school for one year or more shall be regarded as sufficient for those who have made excellent achievements.
(2) In the case of the preceding paragraph, when the President finds it appropriate after hearing the opinions of the Faculty Meeting, the screening of a master's thesis might be replaced with the screening of research results on a specific topic.
(3) Requirements for completion of a doctoral degree program shall be to attend the graduate school for five years or more (including the two years of attendance in a separated doctoral program in the case of those who have attended for two years or more and completed a master's program), acquire 42 credits or more in the designated class subjects prescribed separately (including 30 credits in a master's program in the case of separated doctoral program), submit a doctoral dissertation after receiving necessary research guidance, and pass the dissertation screening and the final examination. However, with regard to the years of attendance, attending the graduate school for three years or more (including the two years of attendance in a separated doctoral program in the case of those who have attended for two years or more and completed a master's program) shall be regarded as sufficient for those who have made excellent achievements.
(4) The requirements for completion of a doctoral degree program for those who have completed a master's program with the years of attendance under the provisions of the proviso to paragraph (1) shall be to attend the graduate school for attendance in the master's program plus three years or more, acquire 42 credits or more in the designated class subjects prescribed separately (including 30 credits in a master's program), submit a doctoral dissertation after receiving necessary research guidance, and pass the dissertation screening and the final examination. However, with regard to the years of attendance, attending the graduate school for three years or more (including years of attendance in a master's program) shall be regarded as sufficient for those who have made excellent achievements.
(5) Despite the provisions of the preceding two paragraphs, the requirement for completion of a doctoral degree program in cases where those who are deemed to have academic ability equivalent to or greater than a master's or professional degree holder under the provisions of Article 156 of the Ordinance for Enforcement of the School Education Act (Ordinance of Ministry of Education No. 11 of 1947) in terms of the eligibility for admission to the graduate school or who have completed the professional degree course enter a doctoral program shall be to attend the graduate school for three years (two years in the case of those who have completed a course of study at law school in paragraph (1) of Article 18 of the Standards for Establishment of Professional Graduate schools; Ordinance of Ministry of Education, Culture, Sports, Science and Technology No. 16 of 2003), acquire 12 credits

or more in the designated class subjects prescribed separately, submit a doctoral dissertation after receiving necessary research guidance, and pass the dissertation screening and the final examination. However, with regard to the years of attendance, attending the graduate school for one year or more (in the case of those who have completed a professional degree course for which the standard years required for graduation is one year or more but fewer than two years, the period obtained by deducting the one year or more but less than two years from three years) shall be regarded as sufficient for those who have made excellent achievements.

(6) The handling of the number of acquired credits for those who are specified in the proviso to the preceding three paragraphs shall be provided for separately.

(7) Out of the 30 credits to be acquired as the requirements for completion of a master's program prescribed in paragraph (1), the number of credits acquired by the class method in paragraph (2) of Article 36 shall not exceed 10 credits. However, when it is deemed particularly necessary from an educational perspective, this may exceed 10 credits.

(8) Out of 42 credits to be acquired as the requirements for completion of a doctoral degree program prescribed in the paragraph (3) and paragraph (4), the number of credits acquired by the class method in paragraph (2) of Article 36 shall not exceed 22 credits (including the number of credits acquired in a master's program by the class method in paragraph (2) of Article 36) However, when it is deemed particularly necessary from an educational perspective, this may exceed 22 credits.

(9) The 12 credits to be acquired as the requirements for completion of a doctoral degree program prescribed in paragraph (5) might be acquired by the class method in paragraph (2) of Article 36.

(10) The number of credits prescribed in the preceding three paragraphs shall include the number of credits acquired by the class method in paragraph (2) of Article 36 out of the number of credits that are regarded as to have acquired under Article 66 and Article 68.

(11) Approval of completion of a master's program or a doctoral degree program shall be made by the President after hearing the opinions of the Faculty Meeting.

(Reduction of the Period of Enrollment)

Article 69-2 Cases in which credits acquired before admission to the graduate school of the University (limited to credits acquired after fulfilling the admission criteria as prescribed in paragraph (1) of Article 102 of the School Education Act) may be regarded as having been acquired at the graduate school of the University under paragraph (1) of Article 68. In cases where these previously acquired credits are recognized as partial completion of the curriculum in the master's or doctoral programs (excluding the curriculum of the doctoral program in the separated doctoral program) in the graduate school of the University, the duration of time needed to acquire those credits may be regarded as part of the stipulated period of enrollment in the graduate school of the University to an extent not exceeding one year. However, even in such cases, students must be enrolled in the master's program for a minimum period of one year.

(Conferral of Degree)

Article 70 (1) The University shall confer a master's degree, and a doctoral degree on students who have completed a master's program, and a doctoral degree program, respectively.

(2) In addition to those in the preceding paragraph, a doctorate might be conferred on those who submit a doctoral dissertation to the graduate school of the University, pass the dissertation screening, and are confirmed to have academic ability equal to or greater than a person who has completed a doctoral degree program at the graduate school of the University.

(3) Necessary matters related to the conferral of degrees shall be provided for separately.

Chapter 4. Common Provisions

Section 1. Rewards and Punishments

(Commendation)

Article 72 A student who has performed an act that is worthy of recognition may be commended by the President.

(Disciplinary Action)

Article 73 (1) Those who act against the rules of the University or commit an act violating the duty as a student will be given disciplinary action by the President after hearing opinions at a Faculty Meeting.

(2) The types of disciplinary action in the preceding paragraph shall be expulsion, suspension, and warning.

(3) The expulsion in the preceding paragraph shall be given to those who are applicable to the following items.

(i) Behave delinquently and are deemed as to have no prospect for improvement

(ii) Are deemed as to have no prospects for completion of the study because of inferior academic ability, etc.

(iii) Often do not attend school, giving no reasonable grounds for absence

(iv) Disturb the orders of the University and violate the duties of a student

(4) Necessary matters related to the disciplinary action procedures for students shall be provided for separately.

Guidelines for the Application of National University Corporation Nagaoka University of Technology Rules (Extract)

The application of the National University Corporation Nagaoka University of Technology Rules shall be determined by these guidelines.

Regarding Article 69 (Completion of Master's and Doctoral Programs):

1. The period for completing programs at the Graduate School is the end of the academic year as provided in Article 11, as well as the end of the terms as provided in Article 12.
2. Notwithstanding the provision of the preceding paragraph, the period for completing programs for students whose period of enrollment has exceeded the standard term of study due to absence from school or other unavoidable reasons as provided in Article 49 or students who have completed the program according to the provisions provided in Article 69, paragraph (1) and paragraphs (3) to (5) will also include the last day of June or September, in addition to the periods provided in the preceding paragraph.

Supplementary Provisions

(1) These guidelines shall be implemented from April 1, 2021.

National University Corporation Nagaoka University of Technology Degree Rules

April 1, 2004
Rules No. 38

(Purpose)

Article 1 These Rules prescribe necessary matters related to the conferral of degrees by Nagaoka University of Technology (hereinafter, the "University") based on the provisions of Article 13 of the Degree Rules (Ordinance of the Ministry of Education, Science and Culture No. 9 of 1953) as well as Article 47 and Article 70 of the National University Corporation Nagaoka University of Technology Rules (hereinafter, the "University Rules").

(Degree)

Article 2 (1) The University shall confer bachelor's, master's, and doctoral degrees.

(2) The name of the relevant major field shall be appended to the degree certificate in accordance with the following classifications.

Degree	Name of Major Field
Bachelor's Degree	Engineering
Master's Degree	Engineering
Doctoral Degree	Engineering

(Requirements for Degree Conferral)

Article 3 (1) The bachelor's degree shall be conferred to students who have graduated from the University.

(2) The master's degree shall be conferred to students who have completed a master's program at a graduate school of the University.

(3) The doctoral degree shall be conferred to students who have completed a doctoral program at a graduate school of the University.

(4) In addition to those prescribed in paragraph (3), the doctoral degree may also be conferred to persons who have passed the doctoral dissertation screening process conducted by the graduate school of the University and to persons who have been confirmed to have academic ability equivalent to or greater than a person who has completed a doctoral program at the graduate school of the University.

(Application for Thesis/Dissertation Screening, etc.)

Article 4 (1) When a student of a graduate school of the University applies for the screening of their thesis/dissertation, the student must submit the following documents to the President of the University (hereinafter, the "President") by the prescribed date.

(i) In the case of an application for master's thesis screening, the following documents are required: The designated application form for thesis screening and a master's thesis

(ii) In the case of an application for doctoral dissertation screening, the following documents are required: The designated application form for dissertation screening, a doctoral dissertation, an abstract of dissertation, and a list of papers

(2) The screening of the master's thesis prescribed in item (i) of the preceding paragraph may, when the President finds it appropriate after hearing opinions of the Faculty Meeting, be substituted with the screening of research outcomes on a specific topic.

(3) Applicants for the conferral of a doctoral degree under the provisions of paragraph (5) of the preceding article shall submit to the President the following documents: The designated application form for the degree, a doctoral dissertation, an abstract of dissertation, a list of papers, a curriculum vitae, and the dissertation screening fee of 57,000 yen. However, the dissertation screening fee shall be waived for students who have attended the doctoral program at the graduate school of the University for the designated number of years or more, obtained the required credits, had withdrawn from the program after receiving the necessary research guidance, and applied for doctoral dissertation screening within one year from the date of withdrawal.

(4) The submitted thesis/dissertation, etc. and the fee paid for the thesis/dissertation screening will not be returned.

(Thesis/Dissertation, etc.)

Article 5 (1) Only one thesis/dissertation, etc. shall be submitted for each applicant. Applicants shall submit one copy of the master's thesis or one item of the research outcomes on a specific topic, or one copy of the doctoral dissertation. However, other papers or results of research may also be submitted as supplementary materials.

(2) When it is deemed necessary for screening, the President may require the submission of translated versions of the thesis/dissertation, models, samples, or other materials.

(Screening Reference)

Article 6 After having accepted an application for the thesis/dissertation screening under the provisions of Article 4, the President shall refer the screening to the Faculty Meeting and hear their opinions related to conferral of the degree.

(Screening Committee)

Article 7 (1) When the screening is referred under the provisions of the preceding article, the Faculty Meeting shall establish a Screening Committee comprising three or more teaching faculty members in charge of the Graduate School of Engineering.

(2) When screening the thesis/dissertation or the research outcomes on a specific topic, the Screening Committee may, following discussion by the Faculty Meeting, obtain assistance from the teaching faculty members, etc. of institutions of higher education or research, and those who have such experience, as well as those who used to be the teaching faculty members of the University.

(Screening, etc. of Thesis/Dissertation, etc.)

Article 8 (1) The Screening Committee shall undertake the screening of the thesis/dissertation or the research outcomes on a specific topic, conduct final examinations, and confirm that the applicant has academic ability equivalent to or greater than a person who has completed the doctoral program in the graduate school of the University (hereinafter, "confirmation of academic ability") prescribed in the provisions of paragraph (4) of Article 3.

(2) Screening of the thesis/dissertation or the research outcomes on a specific topic shall be conducted in accordance with the criteria prescribed separately.

(3) The final examination shall be conducted as an oral or written examination, and shall focus mainly on the content of the thesis/dissertation or the research outcomes on a specific topic, on relevant subjects within the applicant's field of study, and when deemed necessary, on a foreign language subject designated by the Screening Committee.

(4) Confirmation of academic ability shall be conducted through an oral or written examination. In such cases, the evaluation of ability in a foreign language subject designated by the Screening Committee shall be administered.

(5) The final examination might be conducted instead of the confirmation of academic ability for students who fulfill the following criteria: students who have attended the doctoral program at the graduate school of the University for the designated number of years or more, obtained the required credits, had withdrawn from the program after receiving the necessary research guidance, and applied for doctoral dissertation screening within one year from the date of withdrawal.

(Screening Period)

Article 9 (1) The Screening Committee shall, in principle, complete the screening of the thesis/dissertation or the research outcomes on a specific topic, and conduct the final examination related to the application for the thesis/dissertation screening under the provisions of paragraph (1) of Article 4, during the period when the applicant is attending the University.

(2) The Screening Committee must complete the screening of the doctoral dissertation and the confirmation of academic ability related to the application for degree conferral under the provisions of paragraph (3) of Article 4, within one year from acceptance of the application. However, when there are special circumstances, the screening period might be extended following discussion by the Faculty Meeting.

(Report of Screening Results)

Article 10 After completing screening of the thesis/dissertation or the research outcomes on a specific topic, and the final examination or the confirmation of academic ability, the Screening Committee must immediately report to the Faculty Meeting with the following documents, along with the Committee's recommendations on whether or not the degree should be conferred.

(i) For a master's degree, the following documents are required: Screening results of the master's thesis or the research outcomes on a specific topic, and the results of the final examination

(ii) For a doctoral degree, the following documents are required: The abstract of the doctoral dissertation content, the abstract of the results of the dissertation screening, the screening results

of the doctoral dissertation, and the results of the final examination or the abstract of the results of the confirmation of academic ability

(Review of Degree Conferral)

Article 11 The Faculty Meeting shall review whether the degree should or should not be conferred based on the report described in the preceding article, and shall report the result to the President along with their opinions related to conferral of the degree.

(Conferral of Degree)

Article 12 Based on the opinions mentioned in the preceding article, the President shall confer the designated degree certificate to those on whom the degree should be conferred, and shall notify those who will not receive the degree.

(Publication of Doctoral Dissertation Abstracts, etc.)

Article 13 After having conferred a doctoral degree, the President shall publish the abstract of the dissertation contents and the abstract of the results of the dissertation screening via the internet within three months from the date on which the doctoral degree was conferred.

(Publication of Doctoral Dissertation)

Article 14 (1) A person to whom the doctoral degree has been conferred shall publish the full text of the dissertation within one year from the date on which the doctoral degree was conferred. However, this shall not apply if the dissertation has already been published before conferral of the degree.

(2) Despite the provisions of the preceding paragraph, for cases in which there are special circumstances, a person who has been conferred the doctoral degree may publish a summary of the contents instead of the full text of the dissertation with the approval of the University. In such cases, the University shall make the full text of the dissertation available upon request.

(3) The method of publication used by a person who has been conferred the doctoral degree under the provisions of preceding two paragraphs shall be that of online publication on the internet, in cooperation with the University.

(Title of Degree)

Article 15 A person who has been conferred a degree from the University shall append the name of the University when using the title of the degree.

(Report of Conferral of Doctoral Degree)

Article 16 After having conferred a doctoral degree, the President shall report conferral of the degree to the Minister of Education, Culture, Sports, Science and Technology within three months from the date on which the degree was conferred.

(Revocation of Degree)

Article 17 (1) When finding that a person who was conferred a degree has acquired the degree by dishonest means, the President shall, after hearing opinions of the Faculty Meeting, revoke the degree, have the degree certificate returned, and disclose the revocation of the degree.

(2) When a person to whom the degree was conferred is determined to have committed any disgraceful act upon the degree, the degree may be similarly revoked as described in the preceding paragraph.

Regulations of Handling of Thesis/Dissertation Screening of National University Corporation Nagaoka University of Technology

April 1, 2004
Regulations No. 28

(Purpose)

Article 1 These Regulations prescribe necessary matters related to the handling of thesis/dissertation screening based on the provisions of paragraph (2) of Article 8 and Article 19 of the National University Corporation Nagaoka University of Technology Degree Rules (hereinafter, the "Rules").

(Application for Thesis/Dissertation Screening, etc.)

Article 2 (1) An applicant for the screening of a master's thesis prescribed in paragraph (2) of Article 3 of the Rules or for the screening of a doctoral dissertation (hereinafter, a "course doctorate") prescribed in paragraph (3) of the same article shall submit the designated application form for thesis/dissertation screening to the President of the University (hereinafter, the "President") through the chair of the program or major after obtaining approval from the academic supervisor.

(2) An applicant for the conferral of a degree prescribed in paragraph (4) of Article 3 of the Rules (hereinafter, a "dissertation doctorate") shall submit the designated application form for the degree to the President through the chair of the major.

(3) The submission date for the application form for the thesis/dissertation screening in paragraph (1) shall be the date specified for each completion period.

(4) The application form for the degree in paragraph (2) might be submitted at any time.

(Submission of Thesis/Dissertation, etc.)

Article 3 (1) An applicant who submits the application form for master's thesis screening shall also submit documents specified in the table below to the President through the chair of the major after obtaining approval from the academic supervisor by the prescribed date.

Thesis or research outcomes on a specific topic	1 copy or 1 item
Summary of thesis or research outcomes on a specific topic (approx. 300 characters)	1 copy
Abstract of the thesis content or research outcomes on a specific topic (approx. 1,000 characters)	1 copy

(2) An applicant who submits the application form for dissertation screening of a course doctorate shall also submit the documents specified in the table below to the President through the chair of the program after obtaining approval from the academic supervisor by the prescribed date. An

applicant who submits the application form for the degree of a dissertation doctorate shall also simultaneously submit the documents specified in the table below to the President through the chair of the program.

	Course Doctorate	Dissertation Doctorate
Dissertation	1 copy	1 copy
Summary of dissertation (approx. 300 characters)	1 copy	1 copy
List of papers	1 copy	1 copy
Abstract of the content of dissertation (approx. 2,000 characters)	1 copy	1 copy
Curriculum vitae	1 copy	1 copy
Plagiarism Declaration Form for the Dissertation	1 copy	1 copy
Letter of Acceptance of Registration to the Institutional Repository	1 copy	1 copy
List of achievements	—	1 copy
Document certifying research experience	—	1 copy
Document certifying most recent academic background	—	1 copy

(Application Eligibility for Dissertation Doctorate)

Article 4 A person eligible to apply for the degree of dissertation doctorate shall be a person for whom any of the following items is applicable.

(i) Had withdrawn from the doctoral program of the graduate school of the University after attending the 5-year integrated doctoral program or a doctoral program for the prescribed number of years or more, obtained the required credits, and received the necessary research guidance

(ii) Has, in principle, a minimum of seven years of research experience after graduating from a university under the provisions of paragraph (1) of Article 83 of the School Education Law or who has, in principle, a minimum of four years of research experience after completing the first semester of a doctoral program or a master's program at a graduate school

(iii) Has research experience equivalent to or greater than that described in the preceding item

(Research Experience)

Article 5 The research experience in the preceding article shall refer to the experience that falls under any of the following items:

(i) Period of being engaged in research as a full-time university employee

(ii) Period of attendance at a graduate school for those who had withdrawn from graduate school

(iii) Other periods of experience recognized as equivalent to or greater than those in the preceding two items by the President after hearing opinions of the Faculty Meeting

(Screening Committee Composition)

Article 6 (1) The Screening Committee prescribed in Article 7 of the Rules shall be established for each application for thesis/dissertation screening, etc., and shall be composed of members comprising one chief examiner and two or more vice chair examiners.

(2) The chief examiner shall be a professor of the program. However, when the President finds it necessary after hearing opinions of the Faculty Meeting, the chief examiner might be an associate professor of the department.

(Candidates for Examiners)

Article 7 (1) After having accepted an application for thesis/dissertation screening, etc., the chair of the program shall compile a list of candidates for the Screening Committee and submit the list (hereinafter, the "candidate list for examiners") to the President after obtaining approval for the candidates at an academic major meeting. The list shall comprise the following:

(i) In the case of a master's degree application, three or more persons including the academic supervisor

(ii) In the case of a course doctoral degree application, five or more persons including the academic supervisor

(iii) In the case of a dissertation doctoral degree application, five or more persons

(2) Candidates for the examiners in the preceding paragraph may also include the teaching faculty members, etc. of institutions of higher education or research, and those who have such experience, as well as those who used to be the teaching faculty members of the University as candidates for the vice chair examiners. However, if a person who is not affiliated with an institution of higher education or research at that time of application is to be included as a candidate for the Screening Committee, the candidate must have had the experience of thesis/dissertation screening at the University in the past.

(Appointment of Examiners)

Article 8 The President shall appoint the chief examiner and vice chief examiners as the members of the Screening Committee prescribed in Article 7 of the Rules after having the Faculty Meeting review the candidate list for examiners and hear their opinions.

(Change of Examiners)

Article 9 When an appointed examiner cannot perform the thesis/dissertation screening as a result of unavoidable circumstances, the President may change the examiner after hearing opinions of the Faculty Meeting.

(Presentation of Thesis/Dissertation, etc.)

Article 10 (1) The chair of the program or major shall hold a presentation for the thesis/dissertation, etc. or the research outcomes on a specific topic submitted for the thesis/dissertation screening, etc. (hereinafter, the "presentation").

(2) The examiners shall attend the presentation in the preceding paragraph.

(Screening Criteria for Thesis/Dissertation, etc.)

Article 11 (1) The criteria for the screening of a master's thesis prescribed in paragraph (2) of Article 8 of the Rules shall be as described below.

Appropriateness of theme Selection	The selection of the theme for the thesis is appropriate and exhibits awareness of the related issues.
Academic Contribution	The thesis is sufficiently based on previous achievements in engineering and *Gigaku* (science related to technologies that further develop technological systems by reinterpreting diverse current technologies from a scientific aspect), and contains adequate logical considerations that are applicable to the theme for the thesis. The content is original and contributes to the development of engineering and *Gigaku*.
Appropriateness of Statements	Description of the thesis (e.g., text, figures, tables, and citations) is sufficient and appropriate, and possesses a consistent logical structure leading up to the Conclusion. The experimentally obtained results, etc. are consistent with the analysis and discussion.

(2) Criteria for the screening related to the research outcomes on a specific topic prescribed in paragraph (2) of Article 8 of the Rules shall be in accordance with the criteria of the preceding paragraph, with consideration devoted to the characteristics of the research topic.

(3) Criteria for the screening of a doctoral dissertation for a course doctorate or a dissertation doctorate as prescribed in paragraph (2) of Article 8 of the Rules shall be as described below.

Appropriateness of theme Selection	The selection of the theme for the dissertation is appropriate and exhibits the intent of writing the dissertation and the awareness of the issues.
Academic Contribution	The dissertation is sufficiently based on previous achievements in engineering and *Gigaku*, and contains adequate logical considerations that are applicable to the theme for the thesis. The content is original and contributes to the development of engineering and *Gigak*u that produces leading technologies.
Appropriateness of Statements	Descriptions of the dissertation (e.g., text, figures, tables, and citations) are sufficient and appropriate, and demonstrate a consistent logical structure leading up to the Conclusion. The experimentally obtained results, etc. are consistent with the

	analysis and discussion.

(Final Examination)

Article 12 (1) The final examination for the master's and course doctoral degrees prescribed in paragraph (3) of Article 8 of the Rules shall be conducted using the following methods:

(i) An oral or written examination focusing mainly on the content of the thesis/dissertation or the research outcomes on a specific topic, as well as on subjects related to the content

(ii) An oral or written examination of the applicant's foreign language ability as designated by the Screening Committee to ascertain whether or not a candidate possesses the foreign language skills necessary for completion of the master's or doctoral program

(2) The final examination in item (i) of the preceding paragraph might be substituted for the presentation.

(Confirmation of Academic Ability)

Article 13 (1) Confirmation of academic ability for a dissertation doctorate prescribed in paragraph (4) of Article 8 of the Rules shall be conducted using the following methods:

(i) An oral or written examination of subjects related to the dissertation content

(ii) An oral or written examination of the applicant's foreign language ability as designated by the Screening Committee to ascertain whether or not a candidate possesses the foreign language skills required for completion of the doctoral program

(iii) In addition to those specified in the preceding two items, an oral or written examination must be administered to confirm that students have an academic ability equivalent to or greater than a person who has completed the doctoral program

(2) Confirmation of the academic ability in item (i) of the preceding paragraph might be substituted for the presentation.

(Reporting of Screening Results)

Article 14 With regard to the reporting of the screening results to the Faculty Meeting prescribed in Article 10 of the Rules, the Screening Committee shall report these results following discussion at an academic major meeting.

(Review of Degree Conferral)

Article 15 When reviewing the conferral of a degree to a student prescribed in Article 11 of the Rules, the Faculty Meeting may require the attendance of the Screening Committee members as needed.

(Miscellaneous Provisions)

Article 16 In addition to the matters prescribed in these Regulations, necessary matters related to the handling of degree screening shall be addressed by the President after hearing opinions of the Faculty Meeting.

September 3, 1999

May 29, 2000 (Revised)

Approved by the Academic Affairs Committee

April 1, 2004 (Revised)

April 1, 2007 (Revised)

February 1, 2010 (Revised)

April 1, 2015 (Revised)

April 1, 2022 (Revised)

Agreement for the Administration of Academic Credits and Academic Achievements from Other Universities and Non-University Educational Institutions

The approval of academic credits earned from taking classes in other universities (including Nagaoka University of Technology [NUT]) (as provided by Articles 42 to 44 of the Rules of NUT) and other graduate schools (as provided by Articles 66 and 68 of the Rules s of NUT) and academic achievements from non-university educational institutions (hereinafter referred to as "credit approval") are as follows.

1. The credits and academic achievements eligible for credit approval are as follows:

i) Credits obtained from a university (including overseas universities) before admission to NUT or credits earned based on a credit transfer agreement.

ii) Academic achievements from non-university educational institutions before or after admission to NUT.

2. Students who intend to apply for credit approval (hereinafter referred to as "applicants") shall, in principle, submit the *Credit Approval Application Form* (Form 1) to the President of NUT during the first subject registration period after admission for the recognition of credits earned before admission, or during the subject registration period for the recognition of credits earned after admission. However, the conditions for credit approvals based on credit transfer agreements shall be provided separately.

3. For students who enroll into the third year of the undergraduate program, the number of transfer credits eligible for credit approval shall not exceed 30 credits (including credits earned before and after admission); the credit limit for each specific subject shall be determined by each program, major or the Language Center.

4. In cases of are applications as provided in paragraph (2), the President of NUT shall if deemed advantageous from an educational standpoint, approve the credits after consulting with the academic staff related to the relevant subject and after discussions with the Academic Affairs Committee and hearing opinions from faculty meetings.

2) The President of NUT shall notify the applicants regarding the results of the credit approval application through the *Credit Approval Notification Form* (Form 2).

3) The credit approval for subject used for major assignment shall be conducted through matching with corresponding NUT subjects.

4) Matters regarding the recording of approved subject names, number of credits, and performance evaluation to the results register are as follows:

i) Regarding subjects provided in paragraph (1), item (i), the relevant university name, subject name, credits, and performance evaluation shall be recorded.

ii) Regarding academic achievements as provided in paragraph (1), item (ii), the NUT subject name, credits, and performance evaluation of the approved achievements shall be recorded.

5) If NUT requires the raw numeric scores for graded assessments used in university performance evaluations, the minimum score for each particular grade shall be used. However, the raw numeric scores from the relevant universities shall be used for performance evaluations based on credit transfer agreements.

6) The criteria for credit approvals by the relevant program, major or the Language Center in charge of each subject shall be established after Academic Affairs Committee discussions.

(※Abbreviated Format)

Regarding Class Feedback Questionnaires

The class feedback questionnaires are for students taking the various types of classes (lectures, seminars, experiments/practical training). These questionnaires help to improve the classes by obtaining feedback from the students on each class. During the class period, there may sometimes be midterm questionnaires conducted, as well as attempts to improve classes as they progress. In addition, the questionnaire conducted before the final examination is used as a reference to make improvements to the class in the subsequent academic year. This questionnaire meant for you to answer how you feel about taking the subject as part of an educational program and the benefits you received during the class. The results of this questionnaire have no impact on your grade in the subject, so please give your honest opinions.

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