April 2025

2025
Revisions to the Curriculum Table

Graduate School
For students enrolled in/before 2025

Pages 1–36: For students who enrolled in AY 2022 to 2024

*except students who enrolled System Safety Engineering before AY 2023

Page 37: For students who enrolled before AY 2021

*including students who enrolled System Safety Engineering before AY 2023

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

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
Revision of Common Rules (5-Year Integrated Doctoral Program)									
1	Common	Diploma Policy	Revise the Diploma Policy of 5-Year Integrated Doctoral Program.						

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			○	○

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
2	Common	Curriculum Policy	Revise the Curriculum Policy of 5-Year Integrated Doctoral Program.						

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 in the first two years of study. From their third year, 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.

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
Revision of Common Rules (Master's Program)									
3	Common	Diploma Policy	Revise the Diploma Policy of Master's Program.						

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	○	○	○	○

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td>4</td><td>Common</td><td>Curriculum Policy</td><td colspan="8">Revise the Curriculum Policy of Master's Program.

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 offered in each major. In addition, students will receive research guidance for the preparation of their master's thesis through exercise subjects and experiment/practical training (or skills practice) subjects.
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.</td></tr>
<tr><td>5</td><td>Common</td><td>Diploma Policy</td><td colspan="8">Delete the Diploma Policy in eaeh major of Master's Program.</td></tr>
<tr><td>6</td><td>Common</td><td>Curriculum Policy</td><td colspan="8">Delete the Curriculum Policy in eaeh major of Master's Program.</td></tr>
<tr><td>7</td><td>Common</td><td>Education Goals</td><td colspan="8">Delete the Education Goals in eaeh major of Master's Program.</td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
Revision of Common Rules (Doctoral Program)									
8	Common	Diploma Policy	Revise the Diploma Policy of Doctoral Program.						

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			○	○

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
9	Common	Curriculum Policy	Revise the Curriculum Policy of Doctoral Program.						

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.

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5-year Integrated Doctoral Program (Science of Technology Innovation)									
10	Major	Education Goals	Delete the Education Goals in eaeh major of 5-year Integrated Doctoral Program.						
11	Major	Plan of Dissertation Research Guidance	Add the Plan of Dissertation Research Guidance. 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. 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. 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 July 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. From GD2 onwards, 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. March to April in the following year: Progress report sessions (For GD1–GD4) (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. 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. 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 October 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. From GD2 onwards, 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. 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						

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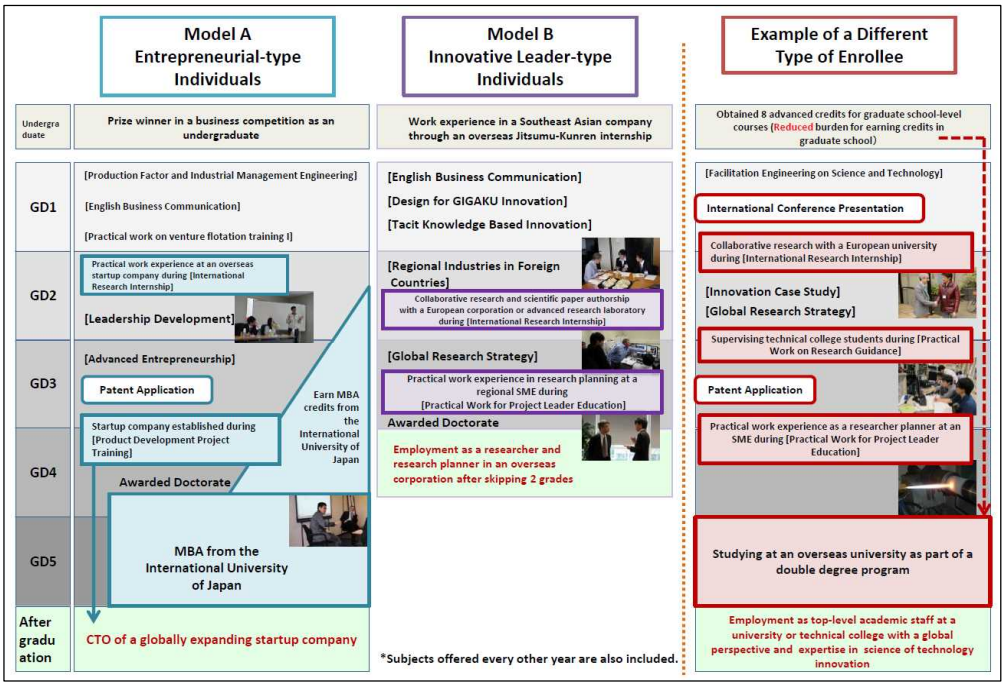
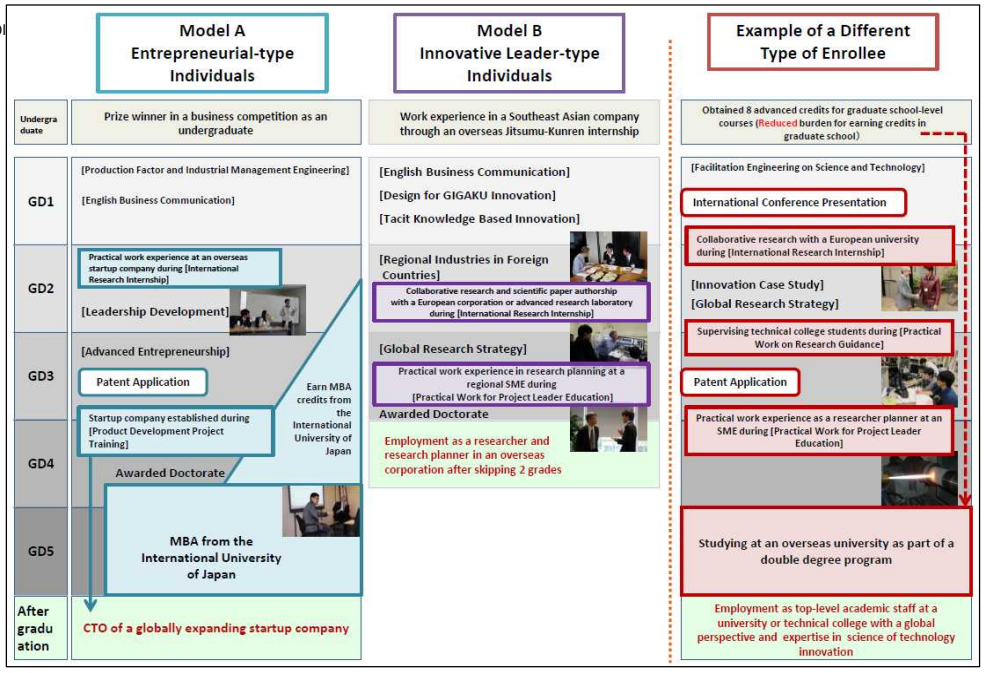
12	Major	Example of Education Model	Revise the Examples of Education Model. (New)  (Ol  		

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13	Major	Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation	Add the Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation.						

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 Robotic Proces Automation(RPA) 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 Cultural Intelligence(CQ) Design Thinking Robotic Process Automation(RPA) Social Innovation Technology Management Think Like A Futurist	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 Buisiness Communication Cultural Intelligence(CQ) Digital Communications Social Innovation	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 Buisiness Communication Creative Leadership Cultural Leadership Digital Communications Think Like A Futurist
		(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 Energy and Economy in Japan 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 Social Skills Considering from Diversity International Relations Introduction to the SDG Practice

14	Major	Elective	Cultural Intelligence (CQ)	2	1～5	1	Not Conducted in 2025	As shown in the left	N/A
15	Major	Elective	Cultural Leadership	2	1～5	2	Not Conducted in 2025	As shown in the left	N/A
16	Major	Elective	Social Innovation	2	1～5	2	Not Conducted in 2025	As shown in the left	N/A
17	Major	Common	Advanced Business Management	2	1～5	2	Change of Term	2nd Term→1st Term	N/A
18	Major	Common	Compliance of Corporation	2	1～5	1	Discontinuted		N/A

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Master's Program (Mechanical Engineering)									
19	Major	Discipline	Revise the 3 cources of Mechatronics Engineering, Smart Factory, and Environment Energy Engineering to 3 focuses.						
20	Major	Plan of Thesis Research Guidance	Revise the Plan of Thesis Research Guidance. 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. 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. From July onwards: Conduct research Students will carry out research in accordance with the research plan. During M1, th 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. 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 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. 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. 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. End of November to Early December: Submission of the Application Form for Thesis Screening for Master's Degree and other documents (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. 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. From October 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. 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 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. 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. 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. 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						

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
21	Major	subject figure	Revise the subject figure. (New)  (Old) 						

(New)

	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, Social Innovation, 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, Precise measurement engineering, Bioengineering Robot Dynamics and Control	Tribology, Advanced Construction Machinery Engineering, Fracture Mechanics, Engineering Ultrasound, Ultrasonic machining, Processing Technology on Advanced Single Crystals Physics of Laser Materials Processing	Advanced Thermal Engineering Advanced Compressible Fluid Dynamics, Advanced Course for Non-Newton Fluid, Radiative Heat Transfer and Solar Energy Engineering, High Energy Materials Engineering, Snow and Ice Technology

(Old)

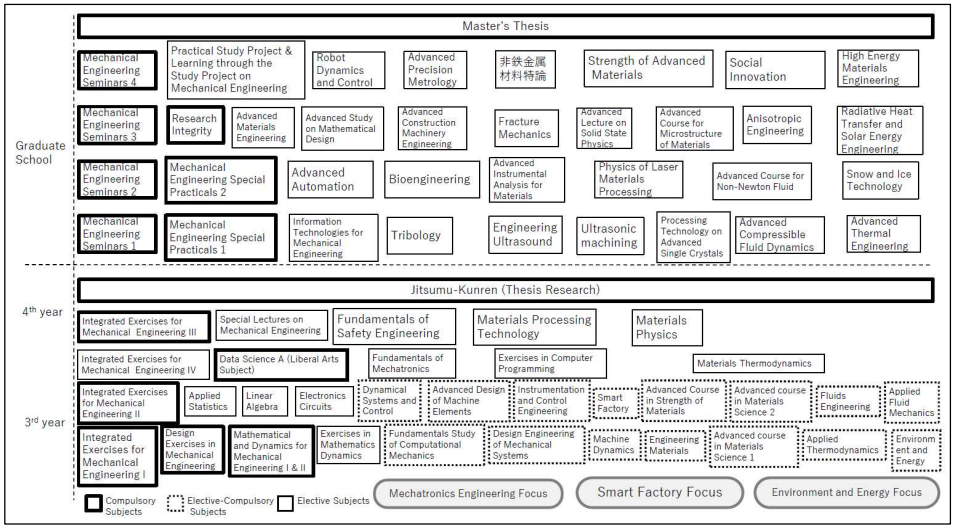
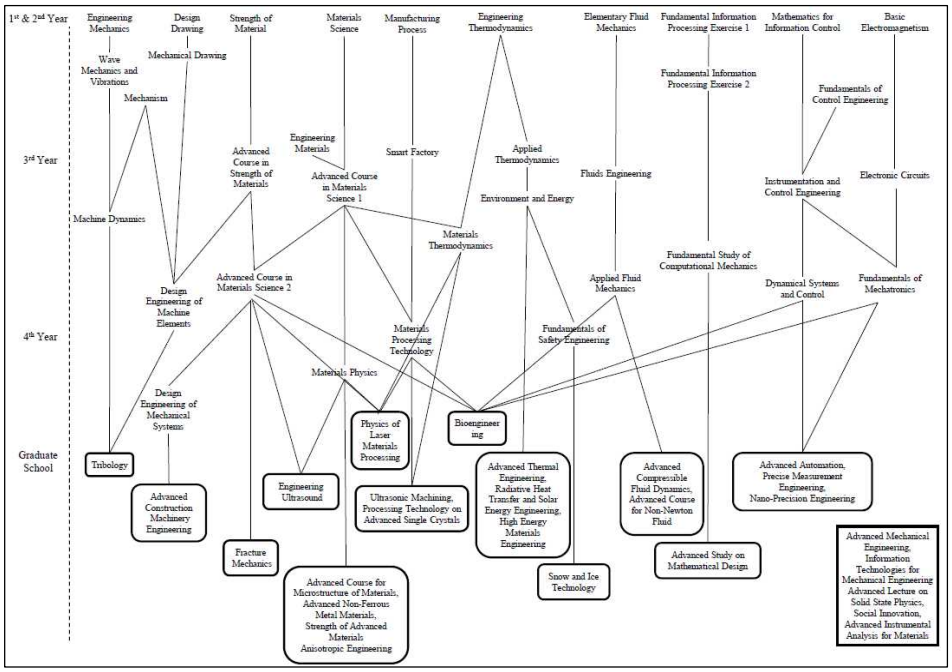
	Mechatronics Engineering Course	Smart Factory Course	Environment and Energy Course
Bachelor's Program in Engineering (Elective-Compulsory・General Elective)	〔Common/General Subjects〕 Exercises in Mathematics and Dynamics, Exercises in Computer Programming, Applied Statistics, Linear Algebra, Electronic 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, Social Innovation, 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, Precise measurement engineering, Bioengineering	Tribology, Advanced Construction Machinery Engineering, Fracture Mechanics, Engineering Ultrasound, Ultrasonic machining, Processing Technology on Advanced Single Crystals Physics of Laser Materials Processing	Advanced Thermal Engineering Advanced Compressible Fluid Dynamics, Advanced Course for Non-Newton Fluid, Radiative Heat Transfer and Solar Energy Engineering, High Energy Materials Engineering, Snow and Ice Technology

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
22	Major	Correspondence Table of Diploma Policy, Subjects and Master's Thesis	Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.						

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, Advanced Study on Mathematical Design (I), Advanced Precision Metrology, Bioengineering, Robot Dynamics and Control **Smart Factory Focus:** Tribology, Advanced Construction Machinery Engineering, Fracture Mechanics, Ultrasonic machining, Engineering Ultrasound, Processing Technology on Advanced Single Crystals, Physics of Laser Materials Processing **Environment and Energy Focus:** Advanced Thermal Engineering, Advanced Compressible Fluid Dynamics, Advanced Course for Non-Newton Fluid, Radiative Heat Transfer and Solar Energy Engineering, High Energy Materials Engineering, Snow and Ice Technology (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, Social Innovation 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 4Practical 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

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
23	Major	Subject Organizatio n Diagram	Revise the Subject Organization Diagram. (New)  (Old)  								
24	Major	Elective	Robot Dynamics and Control	2	1・2	1	Newly-Established	Endo ●	Students who enrolled in and before AY 2024 can take this subject.
25	Major	Elective	Advanced Study on Mathematical Design	2	1・2	2	Change in Notes Column	★→★ I	N/A

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory
/Elective必
修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name,
Lecturer-in-Charge and Term etc.
(Changes are shown as
[Before revision] → [After</th><th>Measures to
students在学生の
対応</th></tr>
<tr><td>26</td><td>Major</td><td>subject figure</td><td colspan="8">Revise the subject figure.

(New)

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

Mechanical Engineering - Recommended Subjects

<table><tr><th>Recommended major of Mechanical Engineering - Course Name</th><th>Electrical, Electronics and Information Engineering</th><th>Materials Science and Engineering/Bioengineering</th><th>Civil and Environmental Engineering</th></tr><tr><td>Mechatronics Engineering</td><td>Advanced Course of Digital Image Processing</td><td>Advances in cell motility</td><td></td></tr><tr><td>Smart Factory</td><td>Mathematical and Data Science</td><td>Electric Properties of Solids
Advanced Molecular</td><td>Advanced Structural Analysis</td></tr><tr><td>Environment and Energy Engineering</td><td>Energy Conversion and Control Engineering</td><td>Electric Properties of Solids
Advanced Molecular
Genetics</td><td>Advanced Hydraulics
Advanced Environmental Information
Survey Engineering
Advanced Topics on Atmospheric and Hydrospheric Sciences 2</td></tr></table>
(Old)

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

Mechanical Engineering - Recommended Subjects

<table><tr><th>Recommended major of Mechanical Engineering - Course Name</th><th>Electrical, Electronics and Information Engineering</th><th>Materials Science and Engineering/Bioengineering</th><th>Civil and Environmental Engineering</th></tr><tr><td>Mechatronics Engineering</td><td>Advanced Course of Digital Image Processing</td><td>Advances in cell motility</td><td></td></tr><tr><td>Smart Factory</td><td>Mathematical and Data Science</td><td>Electric Properties of Solids
Advanced Molecular</td><td>Advanced Structural Analysis</td></tr><tr><td>Environment and Energy Engineering</td><td>Energy Conversion and Control Engineering</td><td>Electric Properties of Solids
Advanced Molecular
Genetics</td><td>Advanced Hydraulics
Advanced Environmental Information
Survey Engineering
Advanced Topics on Atmospheric and Hydrospheric Sciences 2</td></tr></table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
Master's Program (Electircal, Electronics and Information Engineering)									
27	Major	Discipline	Revise the 3 cources of Electric Energy and Control Engineering, Electronic Devices and Light Wave Control Engineering and Information, Telecommunication and Control to 3 focuses.						
28	Major	Plan of Thesis Research Guidance	Revise the Plan of Thesis Research Guidance. 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. 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. 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 guidance based on their progress. 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. 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. The students will undergo periodic checks on their research progress by their academic supervisors, who will provide guidance based on their progress. 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 (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. 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. 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 guidance based on their progress. 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. 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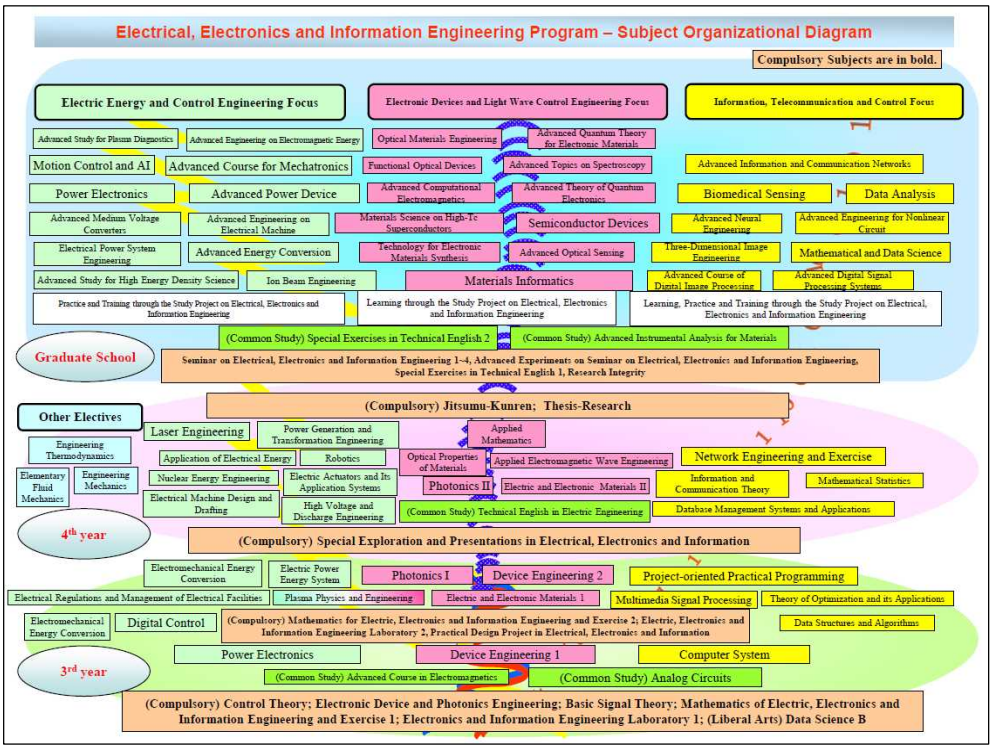
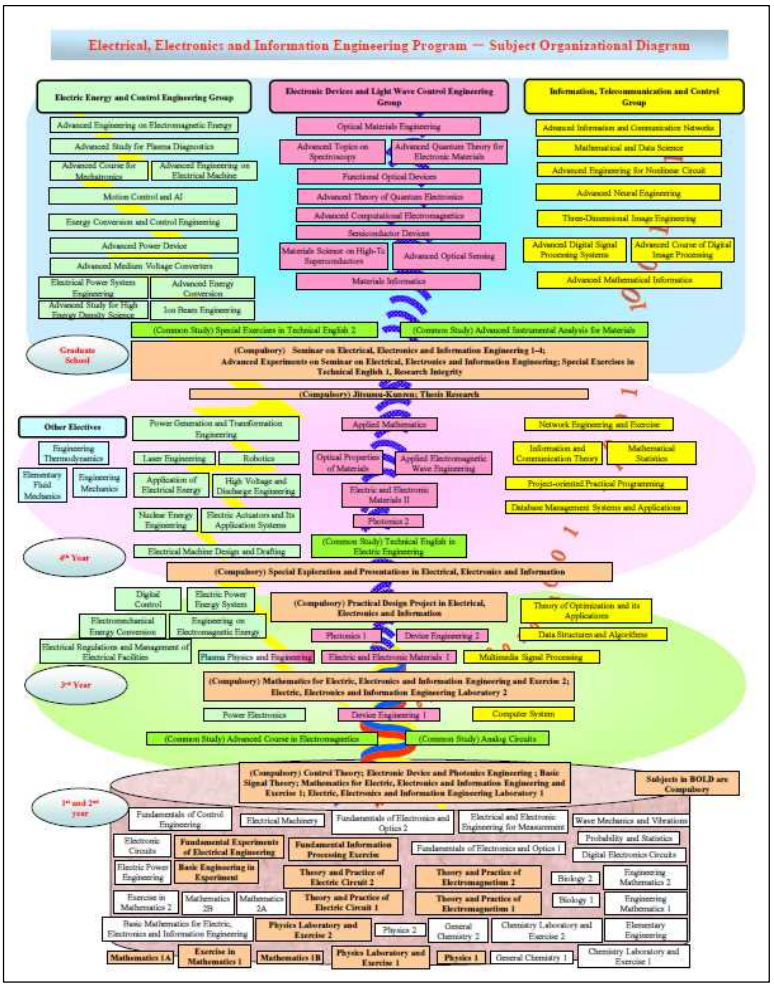
April: Preliminary screening of the master's thesis Mid-May: Submission of the Application Form for Thesis Screening for Master's Degree and other documents Mid-June to the Beginning of July: Submission of the master's thesis and thesis abstract (approximately 1,000 Japanese characters or 250 English 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								

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
29	Major	Correspondence Table of Diploma Policy, Subjects and Master's Thesis							

Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.

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

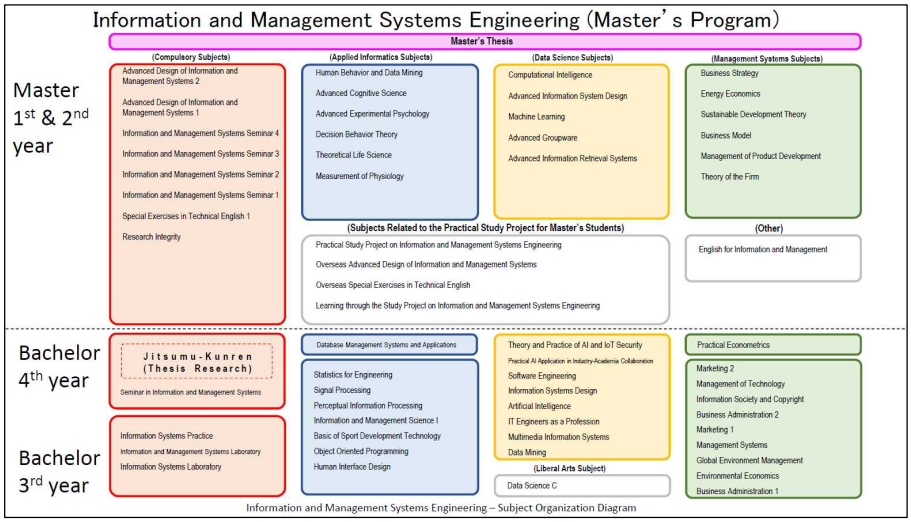
	Diploma Policy			
	1. Advanced expertise	**2. Flexible conceptualization abilities in science and technology**	**3. Strategic technological development and research abilities**	**4. Global leader in science and technology**
Master's Program 1st-2nd Grade	Master's Thesis **Electric Energy and Control 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 Engineering on Electrical Machine (Safety subject recommended to be taken), Advanced Energy Conversion, Ion Beam Engineering **Electronic Devices and Light Wave Control Engineering Focus:** Materials Science on Hirth-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, Functional Optical Devices, Advanced Computational Electromagnetics (Information subject recommended to be taken), Advanced Optical Sensing **Information Telecommunication and Control Focus:** Advanced Course of Digital Image Processing, Mathematical and Data Science (Information subject recommended to be taken), Advanced Information and Communication Networks, Advanced Engineering for Nonlinear Circuit, Three-Dimensional Image Engineering, 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 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

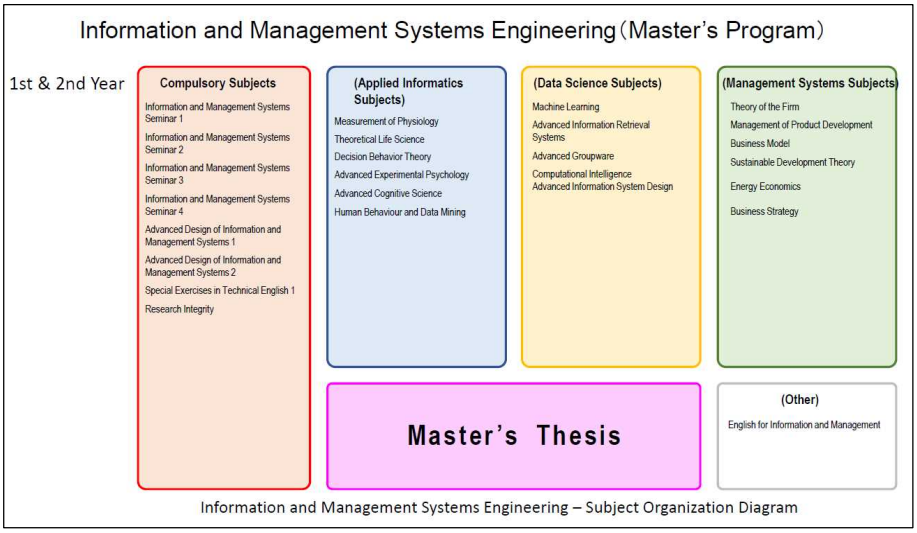
No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
30	Major	Subject Organization Diagram	Revise the subject figure. (New)  (Old)  						

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
31	Major	Elective	Energy Conversion and Control Engineering	2	1・2	1	Change of Subject Name	Energy Conversion and Control Engineering→Advanced Power Electronics	Students who have earned credits for Energy Conversion and Control Engineering cannot take this subject.
32	Major	Elective	Semiconductor Devices	2	1・2	1	Change of Term	1st Term→2nd Term	N/A
33	Major	Elective	Advanced Information and Communication Networks	2	1・2	2	Change of Term	2nd Term→1st Term	N/A
34	Major	Elective	Advanced Engineering for Nonlinear Circuit	2	1・2	1	Change in Notes Column	E A K→A K	N/A
35	Major	Elective	Advanced Digital Signal Processing Systems	2	1・2	1	Change in Notes Column	O A K→O A I K	N/A
36	Major	Elective	Advanced Neural Engineering	2	1・2	1	Change of Term Change in Notes Column	1st Term→2nd Term E A K→A K	N/A
37	Major	Elective	Biomedical Sensing	2	1・2	2	Newly-Established	Hirasawa O	Students who enrolled in and before AY 2024 can take this subject.
38	Major	Elective	Data Analysis	2	1・2	2	Newly-Established	Harakawa E I ★	Students who enrolled in and before AY 2024 can take this subject.

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
Master's Program (Information and Management Systems Engineering)									
39	Major	Plan of Thesis Research Guidance	Revise the Plan of Thesis Research Guidance. 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. 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. From July 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. 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. 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. 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 (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. 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. From October 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. 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. 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. 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						

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td>40</td><td>Major</td><td>Correspondence Table of Diploma Policy, Subjects and Master's Thesis</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.
Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Information and Management Systems Engineering<table><tr><th></th><th colspan="4">Diploma Policy</th></tr><tr><th></th><th>1. Advanced expertise</th><th>2. Flexible conceptualization abilities in science and technology</th><th>3. Strategic technological development and research abilities</th><th>4. Global leader in science and technology</th></tr><tr><td>Master's Program
1st, 2nd Grade</td><td>Master's Thesis
Applies Informatics Subjects:
Measurement of Physiology, Theoretical Life Science, Decision Behavior Theory, Advanced Experimental Psychology, Advanced Cognitive Science, Human Behavior and Data Mining
Data Science Subjects (Information subject recommended to be taken):
Machine Learning, Advanced Information Retrieval Systems, Advanced Groupware, Advanced Information System Design, Computational Intelligence
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</td><td>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</td><td>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</td><td>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</td></tr></table></td></tr>
<tr><td>41</td><td>Major</td><td>Subject Organization Diagram</td><td colspan="7">Revise the Subject Organization Diagram.

(New)
 

(Old) 
</td></tr>
<tr><td>42</td><td>Major</td><td>Elective</td><td>Advanced Information System Design</td><td>2</td><td>1・2</td><td>2</td><td>Change of Term</td><td>2nd Term→2nd & 3rd Term</td><td>N/A</td></tr>
</table>

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Master's Program (Materials Science and Bioengineering)</td></tr>
<tr><td>43</td><td>Major</td><td>Plan of Thesis Research Guidance</td><td colspan="7">Revise the Plan of Thesis Research Guidance.

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).)

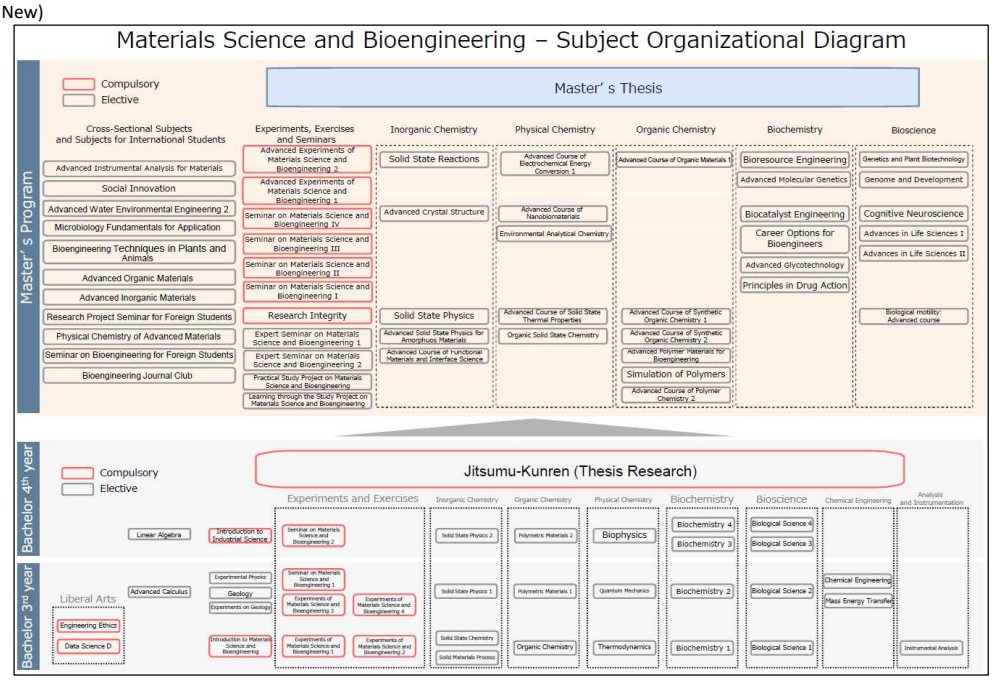
Master’s Program, First Year
April to May: Deciding on the research topic
Students consult with their academic supervisors to determine their research topics.
April to July: Development of the research plan
Students receive guidance from their academic supervisors on research methods, literature search methods, and literature reading comprehension methods. The students will organize the previous research, and develop a research plan together with their academic supervisors. 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.
From July 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. 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 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.
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. 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.
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</td></tr>
<tr><td>44</td><td>Major</td><td>Correspondence Table of Diploma Policy, Subjects and Master's Thesis</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.
Correspondence Table of Diploma Policy, Subjects and Master’s Thesis in Materials Science and Bioengineering
<table>
<tr><th></th><th colspan="4">Diploma Policy</th></tr>
<tr><th></th><th>1. Advanced expertise</th><th>2. Flexible conceptualization abilities in science and technology</th><th>3. Strategic technological development and research abilities</th><th>4. Global leader in science and technology</th></tr>
<tr><td>Master’s Program
1st-2nd Grade</td><td>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, 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), Advanced Course of Polymer Chemistry 2,
Bioresource Engineering, Advanced Molecular Genetics, Biocatalyst Engineering, Career Options for Bioengineers, Advanced Glycotechnology, Principles in Drug Action (Safety subject recommended to be taken),
Genetics and Plant Biotechnology, Genome and Development, Cognitive Neuroscience, Advances in Life Sciences 1, Advances in Life Sciences 2, Biological motility:Advanced course, Social Innovation, 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</td><td>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</td><td>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</td><td>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</td></tr>
</table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
45	Major	Subject Organizatio n Diagram							

Revise the Subject Organization Diagram.

(New)



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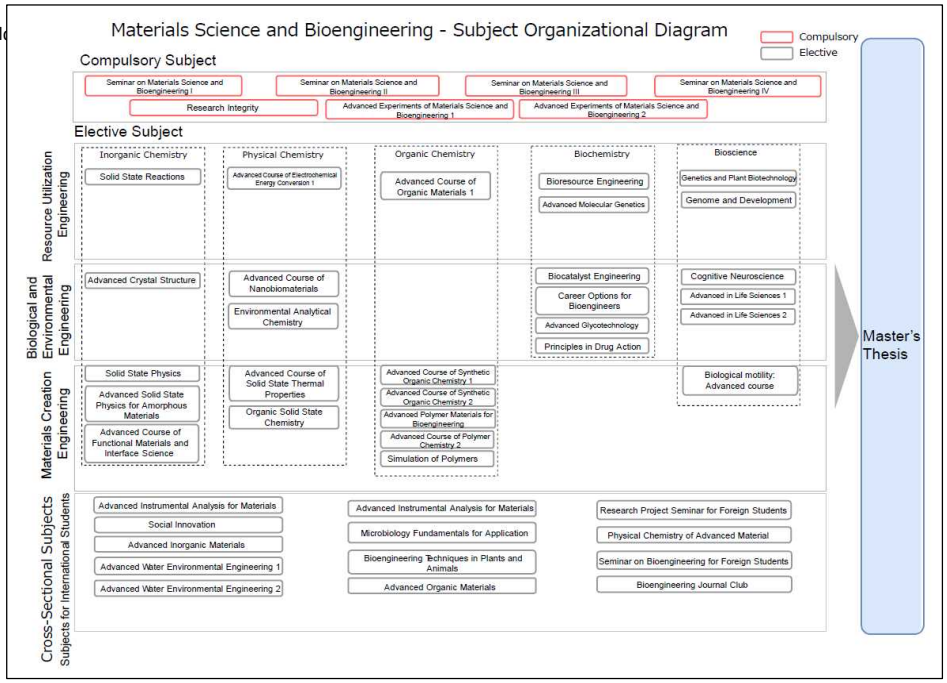


46	Major	Elective	Advanced Course of Solid State Thermal Properties	2	1・2	2	Change in Notes Column	E ★ K→★ K	N/A
47	Major	Elective	Advanced Solid State Physics for Amorphous Materials	2	1・2	2	Change in Notes Column	E ★ K→★ K	N/A
48	Major	Elective	Environmental Analytical Chemistry	2	1・2	1	Change in Notes Column	O ★→O ★ K	N/A

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Master's Program (Civil and Environmental Engineering)</td></tr>
<tr><td>49</td><td>Major</td><td>Plan of Thesis Research Guidance</td><td colspan="7">Revise the Plan of Thesis Research Guidance.

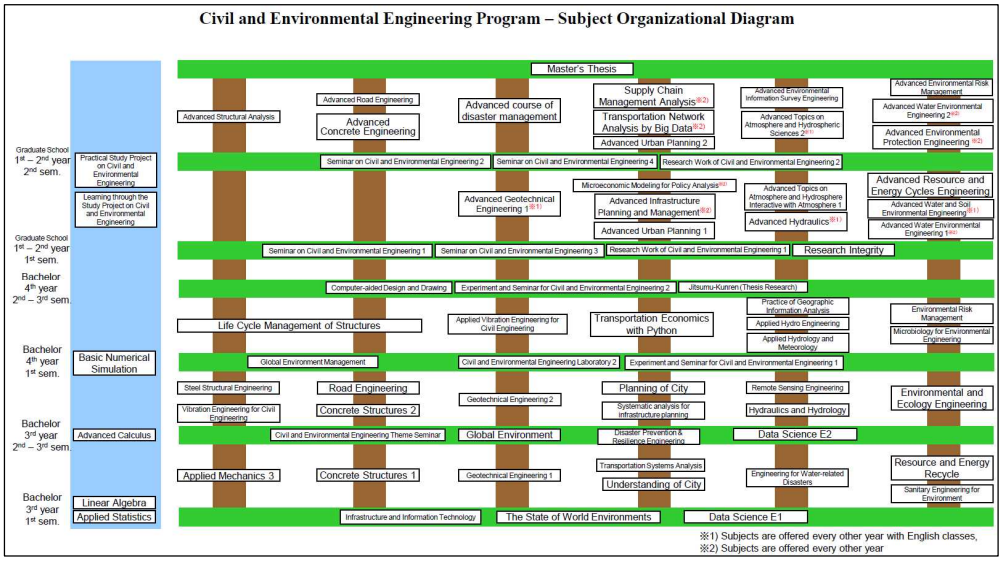
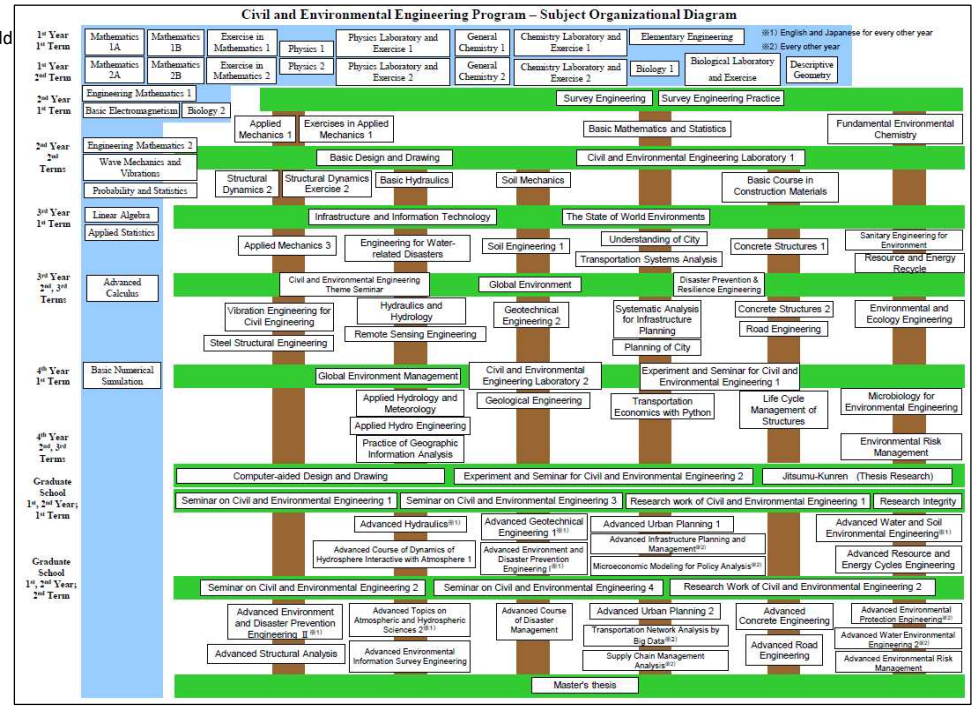
The master’s thesis will be based on the consolidated results of research conducted over the 2 years of the master’s program under the research guidance of the academic supervisor. Students are encouraged to present their master’s research content at scientific meetings and conferences in their field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

○ 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.
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.
From October 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.
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.
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.
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 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.
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</td></tr>
<tr><td>50</td><td>Major</td><td>Correspondence Table of Diploma Policy, Subjects and Master's Thesis</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.
Correspondence Table of Diploma Policy, Subjects and Master’s Thesis in Civil and Environmental Engineering
<table>
<tr><th></th><th colspan="4">Diploma Policy</th></tr>
<tr><th></th><th>1. Advanced expertise</th><th>2. Flexible conceptualization abilities in science and technology</th><th>3. Strategic technological development and research abilities</th><th>4. Global leader in science and technology</th></tr>
<tr><td>Master’s Program
1st-2nd year</td><td>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 Topics on Atmospheric and Hydrospheric Sciences 2, 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, 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</td><td>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</td><td>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</td><td>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</td></tr>
</table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
51	Major	Subject Organizatio n Diagram	Revise the Subject Organization Diagram. (New)  (Old  							
52	Major	Elective	Advanced Environment and Disaster Prevention Engineering I	2	1・2	1	Discontinued		N/A
53	Major	Elective	Advanced Environment and Disaster Prevention Engineering II	2	1・2	2	Discontinued		N/A

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Master's Program (Nuclear Technology)</td></tr>
<tr><td>54</td><td>Major</td><td>Plan of Thesis Research Guidance</td><td colspan="7">Revise the Plan of Thesis Research Guidance.

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. 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.
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. 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. 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.
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

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. 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.
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. 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. 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.
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; they will make a report during the Nuclear Safety Practical held in the final term (third term for those intending to complete the program in that term) of the second year. 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.</td></tr>
<tr><td>55</td><td>Major</td><td>Correspondence Table of Diploma Policy, Subjects and Master's Thesis</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.

Correspondence Table of Diploma Policy, Subjects and Master's Thesis in Nuclear Technology
<table>
<tr><td></td><td colspan="4">Diploma Policy</td></tr>
<tr><td></td><td>1. Advanced expertise</td><td>2. Flexible conceptualization abilities in science and technology</td><td>3. Strategic technological development and research abilities</td><td>4. Global leader in science and technology</td></tr>
<tr><td>Master's Program
1st-2nd year</td><td>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, Reactor Physics and Kinetics, 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), Advanced Safety and Crisis Management (Safety subject recommended to be taken), Advanced Lecture on Nuclear Regulation (Safety subject recommended to be taken), Advanced Seismic Safety Engineering and Community Disaster Management (Safety subject recommended to be taken), 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</td><td>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</td><td>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</td><td>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</td></tr>
</table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
56	Major	Subject Organizatio n Diagram							

Revise the Subject Organization Diagram.

(New)

	Master's Thesis writing, presentation				
	↑				
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 Seismic Safety Engineering and Community Disaster Management
	Seminar on Nuclear Technology 4		Computational Science	Nuclear Reactor Design	Nuclear Emergency Planning and Resilience Engineering
			Environmental Radioactivity and Biological Impact		
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	Reactor Physics and Kinetics	Advanced Safety and Crisis Management
	Nuclear Technology Laboratory		Advanced Engineering for Radiation Safety and Detection	Nuclear Materials and Fuels	Advanced Lecture on Nuclear Regulation
	Special Exercises in Technical English 1				
	Research Integrity				
Classification	Compulsory	Elective	Advanced Radiation Engineering	Nuclear System Engineering	Nuclear Safety Engineering

(Old)

Nuclear Technology - Subject Organizational Diagram

		1st Term	2nd Term	3rd Term	
Practice Subject		Seminar on Nuclear Technology 1	Seminar on Nuclear Technology 2	Nuclear Technology Practical	Master's thesis writing, presentation
		Seminar on Nuclear Technology 3	Seminar on Technology 4		
		Nuclear Technology Laboratory			
		Special Exercises in Technical English 1			
		Research Integrity			
Elective-Compulsory		Basics of Nuclear Technology	Special Exercises in Technical English 2		
	Advanced Radiation Engineering	Nuclear Fusion Systems	Advanced Engineering on Radiation Physics		
		Advanced Instrumental Analysis for Materials	Computational Science		
		Advanced Engineering for Radiation Safety and Detection	Environmental Radioactivity and Biological Impact		
	Nuclear System Engineering	Advanced Lecture on Nuclear and Radiochemistry	Nuclear Fuel Cycle Engineering		
		Reactor Physics and Kinetics	Nuclear Reactor Design		
		Nuclear Materials and Fuels			
	Nuclear Safety Engineering	Nuclear Pwer Reactor and Plant Systems	Advanced Seismic Safety Engineering and Community Disaster Management		
		Advanced Safety and Crisis Management	Nuclear Emergency Planning and Resilience Engineering		
		Advanced Lecture on Nuclear Regulation			

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Master's Program (System Safety Engineering)</td></tr>
<tr><td>57</td><td>Major</td><td>Plan of Thesis Research Guidance</td><td colspan="7">Revise the Plan of Thesis Research Guidance.

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.
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.
From July 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.
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.
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 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.
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.</td></tr>
<tr><td>58</td><td>Major</td><td>Correspondence Table of Diploma Policy, Subjects and Master's Thesis</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.
Correspondence Table of Diploma Policy, Subjects and Master's Thesis in System Safety Engineering
<table><tr><th></th><th colspan="4">Diploma Policy</th></tr><tr><th></th><th>1. Advanced expertise</th><th>2. Flexible conceptualization abilities in science and technology</th><th>3. Strategic technological development and research abilities</th><th>4. Global leader in science and technology</th></tr><tr><td>Master's Program
1st-2nd year</td><td>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</td><td>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</td><td>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</td><td>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</td></tr></table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
59	Major	Subject Organizatio n Diagram	Revise the Subject Organization Diagram.						

(New)

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)②		
	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(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.)

(Old)

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

Note) Earlier Term: Terms 1-2; Latter Term: Terms 2-3; Numbers in parentheses: Course term; Encircled numbers: Number of credits (if not written, the subject is worth 2 credits); Italics: Subjects offered every year; O: Subjects offered during odd-numbered years; E: Subjects offered during even-numbered years.

Attached Figure 2. Recommended program plan (Applicable to students who matriculated in AY2024)

<table>
<tr><th>No.</th><th>Classification 区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td>60</td><td>Major</td><td>Elective</td><td>System Safety Study IV</td><td>1</td><td>1・2</td><td>2・3</td><td>Change of Term</td><td>2nd Term & 3rd Term→1st Term & 2nd Term</td><td>N/A</td></tr>
<tr><td>61</td><td>Major</td><td>Elective</td><td>Advanced lecture on robotics</td><td>1</td><td>1・2</td><td>2</td><td>Change of Term</td><td>2nd Term→2nd Term & 3rd Term</td><td>N/A</td></tr>
<tr><td>62</td><td>Major</td><td>Elective</td><td>Advanced lecture on information security</td><td>1</td><td>1・2</td><td>1</td><td>Change of Term</td><td>1st Term→2nd Term</td><td>N/A</td></tr>
<tr><td colspan="10">Master's Program (Common Subject)</td></tr>
<tr><td>63</td><td>Common</td><td>Objectives of the Common Subjects</td><td colspan="7">Revise the Objectives of the Common Subjects.

(New)
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.

(Old)
In order to develop advanced leading engineers with the practical and creative abilities to bring about global technological development, NUT aims to instill program-specific expertise and technical skills, as well as the following 3 abilities and qualities: multifaceted and flexible thinking abilities in science and technology, strategic technological development abilities, and global engineer leadership skills. The common subjects are designed to teach students these abilities and qualities, and are offered to students from all programs.</td></tr>
<tr><td>64</td><td>Common</td><td>Subject Organization</td><td colspan="7">Revise the Subject Organization.

(New)
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.
〇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.
〇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.
〇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

(Old)
The common subjects are organized into the following 10 groups to support the development of the aforementioned abilities and qualities. Information in parentheses indicate the corresponding undergraduate and master's programs diploma policies (Degree Conferment Policies 1–4).
〇Multifaceted and flexible thinking abilities in science and technology (B1, M2)
A. Ability to utilize the concepts and techniques of science and mathematics that support technology.
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.
〇Strategic technological development abilities (B2, M3)
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, environment, and culture.
F. Trained to have technology management skills that can interpret trends in global society and industries.
〇Global engineer leadership skills (B4, M4)
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 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 "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.</td></tr>
<tr><td>65</td><td>Common</td><td>Correspondence Table of Diploma Policy, Subjects and Master's Thesis</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Master's Thesis.
<table>
<tr><th colspan="5">Correspondence Table of Diploma Policy and Subjects in Common Subjects and Special Subjects for International Students</th></tr>
<tr><td></td><td colspan="4">Diploma Policy</td></tr>
<tr><td></td><td>2. Flexible conceptualization abilities in science and technology</td><td>3. Strategic technological development and research abilities</td><td colspan="2">4. Global leader in science and technology</td></tr>
<tr><td></td><td colspan="3">Common Subjects</td><td>Special Subjects for International Students</td></tr>
<tr><td>Master's Program 1st-2nd year</td><td>Modern Mathematics, Theory of Mathematical Analysis, Sports Bio-mechanics, Social Welfare, Introduction of Cognitive Science, Language and Thought, Advanced Psychology</td><td>Advanced Safety Engineering, Advanced Safety and Information Security 1 & 2, Science and Technology in Modern Society, Energy and Economy in Japan, 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, SDGs -recognizing limitations and challenges-, Introduction to the SDG Practice</td><td>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, Social Skills Considering from Diversity, Role of Creativity and Leadership Development in Enterprise and Business, International Relations, SDGs -recognizing limitations and challenges, Introduction to the SDG Practice</td><td>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</td></tr>
</table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
66	Common	curriculum table	Add a description of the subjects marked with an "Information". (New) 【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 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 (Old) 【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 K: Industry-Associated Subject for Teacher's License Certification The subjects indicated below are elective and students are strongly recommended to take.						
67	Common	Elective	Modern Mathematics	2	1・2	2	Change in Notes Column	K→K Information	N/A
68	Common	Elective	Theory of Mathematical Analysis	2	1・2	1	Change in Notes Column	K→K Information	N/A
69	Common	Elective	Advanced Business Management	2	1・2	2	Change of Term	2nd Term→1st Term	N/A
70	Common	Elective	Compliance of Corporation	2	1・2	1	Discontinuted		N/A

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Doctoral Program (Energy Engineering)</td></tr>
<tr><td>71</td><td>Major</td><td>Plan of Dissertation Research Guidance</td><td colspan="7">Add the Plan of Dissertation Research Guidance.

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 July 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.
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.

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</td></tr>
<tr><td>72</td><td>Common</td><td>Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation.
<table>
<tr><th colspan="5">Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Energy Engineering</th></tr>
<tr><td></td><td colspan="4">Diploma Policy</td></tr>
<tr><td></td><td>1. Research implementation abilities</td><td>2. Ability to pioneer unexplored areas</td><td>3. Giving back to society through research findings</td><td>4. Leadership to guide research and development</td></tr>
<tr><td>Doctoral Program
1st-3rd Grade</td><td>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</td><td>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</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td></tr>
</table></td></tr>
<tr><td>73</td><td>Major</td><td>Elective</td><td>Advanced Engineering for Sound and Vibration Energy Control</td><td>2</td><td>1～3</td><td>1</td><td>Newly-Established</td><td>Kobayashi(Y)</td><td>Students who enrolled in and before AY 2024 can take this subject.</td></tr>
<tr><td>74</td><td>Major</td><td>Elective</td><td>Advanced Nuclear System Engineering</td><td>2</td><td>1～3</td><td>2</td><td>Newly-Established</td><td>Takezawa</td><td>Students who enrolled in and before AY 2024 can take this subject.</td></tr>
<tr><td>75</td><td>Major</td><td>Elective</td><td>Practical work for project leader education</td><td>3</td><td>1～3</td><td>1～3</td><td>Newly-Established</td><td>Staff</td><td>Students who enrolled in and before AY 2024 can take this subject.</td></tr>
</table>

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Doctoral Program (Information Science and Control Engineering)</td></tr>
<tr><td>76</td><td>Major</td><td>Plan of Dissertation Research Guidance</td><td colspan="7">Add the Plan of Dissertation Research Guidance.

(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.
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.
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.

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.
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.
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.
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.
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

(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.
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.
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.

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.
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.
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.
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.
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</td></tr>
<tr><td>77</td><td>Common</td><td>Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation.
Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Information Science and Control Engineering
<table><tr><th></th><th colspan="4">Diploma Policy</th></tr><tr><th></th><th>1. Research implementation abilities</th><th>2. Ability to pioneer unexplored areas</th><th>3. Giving back to society through research findings</th><th>4. Leadership to guide research and development</th></tr><tr><td>Doctoral Program
1st-3rd Grade</td><td>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 Super-precision Instrumentation, Advanced Topics in Control Systems Engineering, Feedforward Control Theory, Advanced Data Management, Advanced Precision Machining, Advanced Design of Machine Elements, Advanced Machine - Environment Design 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</td><td>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 Super-precision Instrumentation, Advanced Topics in Control Systems Engineering, Feedforward Control Theory, Advanced Data Management, Advanced Precision Machining, Advanced Design of Machine Elements, Advanced Machine - Environment Design 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</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td></tr></table></td></tr>
</table>

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
78	Major	Elective	Advanced Course of Chaos and Fractals Informatics	2	1～3	1	Discontinuted		N/A
79	Major	Elective	Advanced Network System	2	1～3	2	Discontinuted		N/A
80	Major	Elective	Advanced course for Machine and Motor Control	2	1～3	2	Newly-Established	Endo	Students who enrolled in and before AY 2024 can take this subject
81	Major	Elective	Advanced Living System	2	1～3	1	Newly-Established	Nishiyama	Students who enrolled in and before AY 2024 can take this subject
82	Major	Elective	Advanced Data Science and Management	2	1～3	1	Newly-Established	Kumoi	Students who enrolled in and before AY 2024 can take this subject
83	Major	Elective	Sports physiology and engineering	2	1～3	1	Newly-Established	Okushima & Ohashi	Students who enrolled in and before AY 2024 can take this subject
84	Major	Elective	Practical work for project leader education	3	1～3	1～3	Newly-Established	Staff	Students who enrolled in and before AY 2024 can take this subject
Doctoral Program (Materials Science)									
85	Major	Plan of Dissertation Research Guidance	Add the Plan of Dissertation Research Guidance. 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. 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. From July 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 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. 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 July 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, 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. 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 July 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 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. 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.						

<table>
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<tr><td>86</td><td>Common</td><td>Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation.
Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Materials Science
<table>
<tr><td></td><td colspan="4">Diploma Policy</td></tr>
<tr><td></td><td>1. Research implementation abilities</td><td>2. Ability to pioneer unexplored areas</td><td>3. Giving back to society through research findings</td><td>4. Leadership to guide research and development</td></tr>
<tr><td>Doctoral Program
1st-3rd Grade</td><td>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, Advanced Laser Processing, Practical work for project leader education
Researcher Ethics</td><td>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, Advanced Laser Processing, Practical work for project leader education</td><td>Doctoral Dissertation
Advanced Manufacturing DX System, System Design for Structural Safety, Practical work for project leader education
Researcher Ethics</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td></tr>
</table></td></tr>
<tr><td>87</td><td>Major</td><td>Elective</td><td>Advanced course of nondestructive materials characterizaion</td><td>2</td><td>1～3</td><td>1</td><td>Discontinuted</td><td></td><td>N/A</td></tr>
<tr><td>88</td><td>Major</td><td>Elective</td><td>Advanced Course of Precise Molecular Design I</td><td>2</td><td>1～3</td><td>1</td><td>Discontinuted</td><td></td><td>N/A</td></tr>
<tr><td>89</td><td>Major</td><td>Elective</td><td>Advanced Course of Precise Molecular Design II</td><td>2</td><td>1～3</td><td>1</td><td>Change of Subject Name</td><td>Advanced Course of Precise Molecular Design II→Advanced Course of Precise Molecular Design</td><td>Students who have earned credits for Advanced Course of Precise Molecular Design II cannot take this subject.</td></tr>
<tr><td>90</td><td>Major</td><td>Elective</td><td>Advanced Engineering for Sustainable Environmental Materials</td><td>2</td><td>1～3</td><td>2</td><td>Discontinuted</td><td></td><td>N/A</td></tr>
<tr><td>91</td><td>Major</td><td>Elective</td><td>Advanced Interface Science</td><td>2</td><td>1～3</td><td>2</td><td>Newly-Established</td><td>Funatsu</td><td>Students who enrolled in and before AY 2024 can take this subject</td></tr>
<tr><td>92</td><td>Major</td><td>Elective</td><td>Advanced materials informatics</td><td>2</td><td>1～3</td><td>2</td><td>Change of Subject Name</td><td>Advanced materials informatics→ Advanced Computational Materials Science</td><td>Students who have earned credits for Advanced materials informatics cannot take this subject.</td></tr>
<tr><td>93</td><td>Major</td><td>Elective</td><td>Practical work for project leader education</td><td>3</td><td>1～3</td><td>1～3</td><td>Newly-Established</td><td>Staff</td><td>Students who enrolled in and before AY 2024 can take this subject</td></tr>
</table>

<table>
<tr><th>No.</th><th>Classification
区分</th><th>Compulsory /Elective必修選択</th><th>Subject Name科目名</th><th>Credits単位</th><th>Year開講年</th><th>Term期間</th><th>Revisions改定区分</th><th>Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After</th><th>Measures to students在学生の対応</th></tr>
<tr><td colspan="10">Doctoral Program (Civil Engineering and Bioengineering)</td></tr>
<tr><td>94</td><td>Major</td><td>Plan of Dissertation Research Guidance</td><td colspan="7">Add the Plan of Dissertation Research Guidance.

○ 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, 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 July onwards: Conduct research
Students will carry out research in accordance with the research plan.

Second year, April: Review of academic supervisors and research topics
April to July: Review of the research plan
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.
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, 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.
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, 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 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, 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.
June: Interim presentation

Third year, September: Review of academic supervisors and research topics
September to December: Review of the research plan
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.
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)</td></tr>
<tr><td>95</td><td>Common</td><td>Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation</td><td colspan="7">Add the Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation.

Correspondence Table of Diploma Policy, Subjects and Doctoral Dissertation in Civil Engineering and Bioengineering
<table><tr><th></th><th colspan="4">Diploma Policy</th></tr><tr><th></th><th>1. Research implementation abilities</th><th>2. Ability to pioneer unexplored areas</th><th>3. Giving back to society through research findings</th><th>4. Leadership to guide research and development</th></tr><tr><td>Doctoral Program
1st-3rd Grade</td><td>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</td><td>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
Ion channels and excitable membrane
Biorefinery Development
Genetic Engineering - Advanced Course
Biological systems in molecular motility
Advanced Course of Microbiology for Environmental Engineering
Practical work for project leader education</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td><td>Doctoral Dissertation
Practical work for project leader education
Researcher Ethics</td></tr></table></td></tr>
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No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応
96	Major	Elective	Applied numerical methods for geotechnical engineering	2	1～3	1	Discontinuted		N/A
97	Major	Elective	Advanced Course of Engineering for Wildlife Management	2	1～3	1	Discontinuted		N/A
98	Major	Elective	Practical work for project leader education	2	1～3	1～3	Newly-Established	Staff	Students who enrolled in and before AY 2024 can take this subject.
Advanced Cource for Strategic Engineer Promotion									
99	Common	Elective	Compliance of Corporation	2	Master 1～2	1	Discontinuted		N/A
WISE Program (Course for the 5-year Integrated Doctoral Program)									
100	Major	Elective Compulsory	Cultural Intelligence (CQ)	2	1～5	1	Not Conducted in 2024	As shown in the left	N/A
101	Major	Elective Compulsory	Cultural Leadership	2	1～5	2	Not Conducted in 2024	As shown in the left	N/A
102	Major	Elective Compulsory	Social Innovation	2	1～5	2	Not Conducted in 2024	As shown in the left	N/A
WISE Program (Course for the Master's Program and Doctoral Program)									
103	Major	Elective Compulsory	Cultural Intelligence (CQ)	2	Master 1～2 Doctor 1～3	1	Not Conducted in 2024	As shown in the left	N/A
104	Major	Elective Compulsory	Cultural Leadership	2	Master 1～2 Doctor 1～3	2	Not Conducted in 2024	As shown in the left	N/A
105	Major	Elective Compulsory	Social Innovation	2	Master 1～2 Doctor 1～3	2	Not Conducted in 2024	As shown in the left	N/A
Applied Safety Engineering Course									
106	Common	Overview and Objectives	Revise the Overview and Objectives. (New) 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. (Old) 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. Course graduates should aim to obtain System Safety Sub-Engineer certification (System Safety Engineer Certification System).						

No.	Classification 区分	Compulsory /Elective必修選択	Subject Name科目名	Credits単位	Year開講年	Term期間	Revisions改定区分	Subject name, Lecturer-in-Charge and Term etc. (Changes are shown as [Before revision] → [After	Measures to students在学生の対応

【The following is for students enrolled before AY 2021.】

*including students who enrolled System Safety Engineering before AY 2023

Master's Program (System Safety Engineering)									
1	Major	Compulsory	System Safety Study 4	1	1・2	2・3	Change of Term	2nd & 3rd Term→1st & 2nd Term	N/A
2	Major	Elective	Advanced lecture of robotics	1	1・2	2	Change of Term	2nd Term→2nd & 3rd Term	N/A
3	Major	Elective	Advanced lecture on information security	1	1・2	1	Change of Term	1st Term→2nd Term	N/A
Doctoral Program (Information Science and Control Engineering)									
4	Major	Elective	Advanced Network System	2	1～3	2	Discontinuted		N/A
5	Major	Elective	Advanced course for Machine and Motor Control	2	1～3	2	Newly-Established	Endo	Students who enrolled in and before AY 2024 can take this subject.
6	Major	Elective	Advanced Living System	2	1～3	1	Newly-Established	Nishiyama	Students who enrolled in and before AY 2024 can take this subject.
7	Major	Elective	Advanced Data Science and Management	2	1～3	1	Newly-Established	Kumoi	Students who enrolled in and before AY 2024 can take this subject.
8	Major	Elective	Sports physiology and engineering	2	1～3	1	Newly-Established	Okushima & Ohashi	Students who enrolled in and before AY 2024 can take this subject.
Doctoral Program (Materials Science)									
9	Major	Elective	Advanced course of nondestructive materials characterizaion	2	1～3	1	Discontinuted		N/A
10	Major	Elective	Advanced Course of Precise Molecular Design I	2	1～3	1	Discontinuted		N/A
11	Major	Elective	Advanced Course of Precise Molecular Design II	2	1～3	1	Change of Subject Name	Advanced Course of Precise Molecular Design Ⅱ→Advanced Course of Precise Molecular Design	Student who have earned credits for Advanced Course of Precise Molecular Design II cannot take this subject.
12	Major	Elective	Advanced Interface Science	2	1～3	2	Newly-Established	Funatsu	N/A
13	Major	Elective	Advanced materials informatics	2	1～3	2	Change of Subject Name	Advanced materials informatics→ Advanced Computational Materials Science	Student who have earned credits for Advanced materials informatics cannot take this subject.
Doctoral Program (Energy and Environment Science)									
14	Major	Elective	Advanced Engineering for Sustainable Environmental Materials	2	1～3	2	Discontinuted		N/A
15	Common	Elective	Advanced Engineering for Prevention of Natural Disaster	2	1～3	1	Discontinuted		N/A
16	Major	Elective	Advanced Engineering for Sound and Vibration Energy Control	2	1～3	1	Newly-Established	Kobayashi(Y)	Students who enrolled in and before AY 2024 can take this subject.
17	Common	Elective	Advanced Nuclear System Engineering	2	1～3	2	Newly-Established	Takezawa	Students who enrolled in and before AY 2024 can take this subject.
Doctoral Program (Integrated Bioscience and Technology)									
18	Major	Elective	Advanced Course of Engineering for Wildlife	2	1～3	1	Discontinuted		N/A
19	Major	Elective	Advanced Course of Chaos and Fractals Informatics	2	1～3	1	Discontinuted		N/A