Student Handbook

-English Translation-

2024年度

学 生 便 覧

Graduate School of Science,
Tohoku University

東北大学大学院
理 学 研 究 科

Overview

About School of Science

The Faculty of Science came into being as the College of Science of Tohoku Imperial University in 1907. The Departments of Mathematics, Physics, and Chemistry began offering courses in 1911, followed by the Department of Geology the next year. The College of Science was renamed the Faculty of Science in 1919. Many departments and research laboratories have been added since then.

Tohoku University is committed, first and foremost, to excellence based on the principles of its foundation, i.e., "Research First" and "Open-door" policies. The School of Science has been playing important roles in the university to achieve these goals. The principle of "primary emphasis on research" is based on the belief that leading researchers can provide the best education. This ideology has remained the basis of education and research with an emphasis on creativity within our faculty for more than 90 years. An example of our "open-door" policy can be seen in the break with tradition in the era of modernization in Japan, the Meiji and early Taisho Periods, by our accepting female students and students graduating from schools not affiliated with the faculty based on their individual ability. Chika Kuroda, Ume Tange, and Raku Makita to join us as the first three Japanese female students, and Kaya Seiji, who graduated from Tokyo Technical College (later renamed Tokyo Institute of Technology) and became president of Tokyo University are excellent examples.

These two principles have been upheld since the foundation of the College of Science and have been the driving force behind our research. However, recent global changes have required universities in Japan to establish new objectives based on globalization and their contribution to society. The new objectives of the Faculty of Science, which can be achieved by promoting creative research and training new researchers, should be for it to gain recognition throughout the world for higher levels of research and for it to play a major global role in the advancement and propagation of new scientific technology. To achieve these objectives, steps were taken in 1994 and 1995 toward expanding the graduate schools of the university and giving them greater importance. This shift toward emphasis on graduate school study started with the reorganization of the Faculty of Science into the Graduate School of Science, which was aimed at achieving higher levels of research and education. The Graduate School of Science was reorganized with six departments, mathematics, physics, astronomy, geophysics, chemistry and geoenvironmental science, and affiliated research centers and facilities had been rearranged to 8 affiliated research centers and facilities.

History

"Research first" and "Open-door."

Tohoku Imperial University, College of Science (the former Faculty of Science) was incepted in 1907 (Meiji 40), as the third Imperial University next to Tokyo and Kyoto. Since then, it has made remarkable achievements in research and has provided important human resources to our society.

Of special note in our history are the ideas of "Research first" and "Open-door."

We always assign top priority to research: "Research first." That makes research our ultimate mission. We think it is possible to bestow true education to students based on research. This longstanding philosophy of creativity and originality has been proved by producing many recipients of Order of Culture, the Japan Academy Medal, and others.

Our door is widely open to the outer world at any time: we have an "Open-door." We are most willing to give our educational and research resources back to society, which in turn helps us to find undiscovered genius and develop it.

During the Meiji and Taisho eras, we accepted, by selection according to competence and ability without adhering to custom, female students and those who had not graduated from high schools of the old education system, technical institutes, for example. The latter were called "collateral" at that era. This is an example of the "Open-door" policy. This system allowed KURODA Chika, TANGE Ume, and MAKITA Rakura to join us as the first three Japanese female students. KAYA Seiji, former President of the University of Tokyo, is an example of "collateral" and is a graduate from the Kuramae Institute of Technology (the former Tokyo Institute of Technology). In addition, Professors Cheng Jian Gong and Su Bu Qing, leaders of mathematics in China, are both graduates from our Faculty and the first two foreign people to obtain doctorate degrees in Japan.

Those two philosophies are indispensable to distinguished and productive research. Some 40-45% of our teaching staff each year are not graduates from Tohoku University-another example of "Open-door."

Introduction of Faculty of Science

The Faculty of Science is responsible for education and research of basic science. It encompasses all disciplines of natural science. Our activity is rooted in original questions about nature and in a strong appetite for learning. The outcomes of our activities do contribute to the welfare of humankind after their application to technologies. Original and creative research done in the Faculty of Science is going to be the most important in coming age as society increasingly emphasizes other concerns aside from strictly economic ones, such as sustainable global environment and improved quality of life. The possible scenes of your activities are open wide before you.

Introduction of Graduate School of Science

We are providing high-quality education and high-level studies to foster professionals who are acquainted with both sufficient specialized knowledge and research methodology. Scholars from Research Institutes of Tohoku

University, other research institutions, domestic and foreign, are working jointly with us.

All of our six Departments were nominated as "COE* bases for 21st century" in 2002, the Department of Chemistry as "Global COE" in 2007, and the other five Departments in 2008. We are working hard to develop an "attractive campus" and make our School a supreme center of education and research of science in the world based on the fruits of these COE programs.

* COE is the acronym for Center Of Excellence. A focused system of budget allocation executed by Ministry of Education, Culture, Sports, Science and Technology to develop high-level global centers for education and research and to cultivate creative youth.

History of Graduate School of Science and Faculty of Science	
1907	Tohoku Imperial University founded
1911	Departments Mathematics, Physics, Chemistry and Geology established Tohoku Imperial University, College of Science public notification
1916	The first three Bachelor degrees awarded to Japanese women (Mathematics 1 and Chemistry 2)
1917	Chair of Applied Chemistry established
1919	College of Science renamed as the Faculty of Science, with transfer in accordance with establishment of Faculty of Engineering
1922	Department of Biology established Albert Einstein visited
1924	Department of Geology divided into the Department of Geology and Paleontology and Department of Rock and Mineral Deposits
1934	Chair of Astronomy established
1937	Niels Bohr visited
1945	Department of Geophysics established
1946	Department of Geography established
1949	Faculty of Science, Tohoku University was initiated under the new university system
1953	Graduate School of Science (six Departments of Mathematics, Physics, Chemistry, Geology, Biology and Geophysics) established
1993	Faculty of General Education abolished Four year consecutive system started
1995	Graduate School of Science reformed to an Agency
2001	Graduate School of Life Science established
2002 - 2003	Three programs nominated as "COE* bases for the 21st century"
2004	Tohoku University, a National University Corporation started
2007	Programs proposed by Fields of Chemistry and Biology nominated as "Global COE" Centenary Anniversary of Tohoku University
2008	Programs proposed by Fields of Physics, GeoScience, and Biology nominated as "Global COE"

※These articles are taken from the website of the School of Science; the contents are slightly different from the articles in the Japanese “Student Handbook”.

[Diploma Policy: Faculty of Science]
School of Students will acquire fundamental knowledge in various fields of science and obtain advanced education needed for graduate school, and they will gain the ability to apply fundamental knowledge of science in order to play an important role in various areas of society. In particular, students will acquire the required number of credits to satisfy graduation requirements, including those from compulsory courses specified by each department.

[Curriculum Policy: Faculty of Science]
The Faculty of Science of Tohoku University organizes and implements curriculums on the basis of the following policies so that students can achieve the goals set out in the Degree Policy.
1. Up to the first half of the second year, students will be educated in each department to acquire a wide range of education, including humanities and social sciences, natural sciences, and foreign languages, as well as the skills for using English and information processing. Moreover, they will be provided a basic education in science necessary for receiving specialized education in higher grades. From the second half of the second year, specialized education is conducted by combining lectures, exercises, experiments, and practical training by department.
2. In accordance with the philosophy of the “research first” principle, students will join a laboratory from the second half of the third year or the fourth year, begin research, and develop the ability to actively study both inside and outside the class.
3. Through the evaluation of the results of learning outcomes and individual feedback and the utilization of the results, students' ability to learn autonomously and to conduct research independently will be cultivated.

[Diploma Policy: Master’s Program, Graduate School of Science]
In accordance with the philosophy/purpose of the Graduate School of Science, a degree is awarded according to the following policy
Students will learn advanced knowledge in each field of science, become skillful in the general science and acquire the ability to play a leading role in society as well as science.
In particular, students must earn the required number of credits that satisfy the completion requirements, including compulsory courses specified by each major, and pass the final exam, including the master's thesis.

[Diploma Policy: Doctoral Program, Graduate School of Science]
In accordance with the philosophy/purpose of the Graduate School of Science, a degree is awarded according to the following policy
Students will become equipped with outstanding research capabilities and academic knowledge in each field of science and science in general and acquire the same level of skill as researchers

[Curriculum Policy: Master’s Program, Graduate School of Science]
In the Master’s Program of the Graduate School of Science, Tohoku University, the curriculum will be organized and implemented on the basis of the following policies so that students can achieve the goals set out in the Degree Policy.
1. Students must acquire advanced knowledge and cultivate problem-solving abilities, international communication skills, the ability to write academic papers and presentation abilities through advanced and interdisciplinary subjects in various fields of science and guided research. Furthermore, they must develop the ability to play a leading role in a wide range of fields of society, including the field of science.
2. Students will be provided with the opportunities to gain practical skills and the ability to develop original ideas for research subjects, to develop high ethical standards and leadership abilities required to carry out research, and to obtain cutting-edge research results in Japan and overseas, as well as opportunities for social experience.
3. Individual feedback and evaluations of learning outcomes will be utilized to cultivate students' abilities to learn autonomously and to conduct research independently. Appropriate review and defense processes will be conducted for the research results presented in the master's thesis.

[Curriculum Policy: Doctoral Program, Graduate School of Science]
The curriculum is organized and implemented on the basis the following policies so that students can achieve the goals set out in the Degree Policies in the Doctoral Program of the Graduate School of Science, Tohoku University.
1. Through cutting-edge research in various fields of science, students will be taught to write doctoral thesis, develop the abilities required of researchers leading science and technology fields, and improve their universal competence, including that in advanced science.
2. Students will be provided with the opportunities to gain practical skills and the ability to develop original ideas for research subjects, to develop high ethical standards and leadership abilities required to carry out research, and to obtain cutting-edge research results in Japan and overseas, as well as opportunities for social experience.
3. Individual feedback and evaluations of learning outcomes will be utilized to cultivate students' abilities to conduct research independently. Appropriate review and defense processes will be conducted for the research results presented in the doctoral thesis.

AY 2024
(Reiwa 6)

（April 2024-March 2025）

●: National Holidays

Apr.

日	月	火	水	木	金	土
…	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	●29	30	…	…	…	…
…	…	…	…	…	…	…

May

日	月	火	水	木	金	土
…	…	…	1	2	●3	●4
●5	●6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	…
…	…	…	…	…	…	…

June

日	月	火	水	木	金	土
…	…	…	…	…	…	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	…	…	…	…	…	…

July

日	月	火	水	木	金	土
…	1	2	3	4	5	6
7	8	9	10	11	12	13
14	●15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	…	…	…
…	…	…	…	…	…	…

Aug.

日	月	火	水	木	金	土
…	…	…	…	1	2	3
4	5	6	7	8	9	10
●11	●12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
…	…	…	…	…	…	…

Sept.

日	月	火	水	木	金	土
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	●16	17	18	19	20	21
●22	●23	24	25	26	27	28
29	30	…	…	…	…	…
…	…	…	…	…	…	…

Oct.

日	月	火	水	木	金	土
…	…	1	2	3	4	5
6	7	8	9	10	11	12
13	●14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	…	…
…	…	…	…	…	…	…

Nov.

日	月	火	水	木	金	土
…	…	…	…	…	1	2
●3	●4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	●23
24	25	26	27	28	29	30
…	…	…	…	…	…	…

Dec.

日	月	火	水	木	金	土
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	…	…	…	…
…	…	…	…	…	…	…

2025 (Reiwa 7) Jan.

日	月	火	水	木	金	土
…	…	…	●1	2	3	4
5	6	7	8	9	10	11
12	●13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	…
…	…	…	…	…	…	…

Feb.

日	月	火	水	木	金	土
…	…	…	…	…	…	1
2	3	4	5	6	7	8
9	10	●11	12	13	14	15
16	17	18	19	20	21	22
●23	●24	25	26	27	28	…
…	…	…	…	…	…	…

Mar.

日	月	火	水	木	金	土
…	…	…	…	…	…	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	●20	21	22
23	24	25	26	27	28	29
30	31	…	…	…	…	…

AY 2025
(Reiwa 7)

（April 2025-March 2026）

●: National Holidays

Apr.

日	月	火	水	木	金	土
…	…	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	● 29	30	…	…	…
…	…	…	…	…	…	…

May

日	月	火	水	木	金	土
…	…	…	…	1	2	● 3
● 4	● 5	● 6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
…	…	…	…	…	…	…

June

日	月	火	水	木	金	土
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	…	…	…	…	…
…	…	…	…	…	…	…

July

日	月	火	水	木	金	土
…	…	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	● 21	22	23	24	25	26
27	28	29	30	31	…	…
…	…	…	…	…	…	…

Aug.

日	月	火	水	木	金	土
…	…	…	…	…	1	2
3	4	5	6	7	8	9
10	● 11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	…	…	…	…	…	…

Sept.

日	月	火	水	木	金	土
…	1	2	3	4	5	6
7	8	9	10	11	12	13
14	● 15	16	17	18	19	20
21	22	● 23	24	25	26	27
28	29	30	…	…	…	…
…	…	…	…	…	…	…

Oct.

日	月	火	水	木	金	土
…	…	…	1	2	3	4
5	6	7	8	9	10	11
12	● 13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	…
…	…	…	…	…	…	…

Nov.

日	月	火	水	木	金	土
…	…	…	…	…	…	1
2	● 3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
● 23	● 24	25	26	27	28	29
30	…	…	…	…	…	…

Dec.

日	月	火	水	木	金	土
…	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	…	…	…
…	…	…	…	…	…	…

2026 (Reiwa 8) Jan.

日	月	火	水	木	金	土
…	…	…	…	● 1	2	3
4	5	6	7	8	9	10
11	● 12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
…	…	…	…	…	…	…

Feb.

日	月	火	水	木	金	土
1	2	3	4	5	6	7
8	9	10	● 11	12	13	14
15	16	17	18	19	20	21
22	● 23	24	25	26	27	28
…	…	…	…	…	…	…
…	…	…	…	…	…	…

Mar.

日	月	火	水	木	金	土
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	● 20	21
22	23	24	25	26	27	28
29	30	31	…	…	…	…
…	…	…	…	…	…	…

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Academic Schedule

<First (spring) Semester>

Month	Academic Matters	Academic Fees & Scholarships	Other
April	•First (spring) semester (April 1st to September 30th) •Guidance for newly enrolled students •Distribution of course schedule and course syllabus •Course registration •Registration for related courses	•Result notification of application for deferment or monthly installment of tuition fee payment for the spring semester	•Nominations for the Student Representative Council
May	•Deadline for reporting thesis titles (September completion) *schedule: depending on the department	•Deadline for payment of spring semester tuition fees	•Annual Medical check-up
June	•University foundation day (June 22)		•Special health examination for RI handler
July	•Submission of applications for advancement into the Doctoral program (October enrollment)	•Result notification of admission fee waiver application (April enrollment) •Result notification of tuition fee waiver application (of the spring semester)	•Recruitment of teaching assistants (for the fall semester) •Special health check-up for those handling organic solvents and specified chemical agents
August	•Confirmation of full-name and address/nationality of expected graduates (September completion) •Semester-end vacation	•Distribution of application form for tuition fee waiver (for the fall semester)	
September	•Commencement (for those graduating between April and September) •Issue of certificate of admission, advancement, or transfer permission (October enrollment)	(In early September) •Application for tuition fee waiver for the fall semester •Application for deferment or monthly installment of tuition fee payment for the fall semester	

<Second (fall) Semester>

Month	Academic Matters	Academic Fees & Scholarships	Other
October	•Second (fall) semester (October 1st to March 31st) •Course registration •Registration for related courses	•Deadline for payment of the fall semester tuition fees •Result notification of application for deferment or monthly installment of tuition fee payment for the fall semester	
November	•Confirmation of full-name and address/nationality of expected graduates (March completion)		•University Festival •Special health examination for those handling organic solvents and specified chemical agents
December	•Deadline for reporting thesis titles (March completion) *schedule: depending on the department •Winter vacation	•Result notification of admission fee waiver application (October enrollment) •Result notification of tuition fee waiver application (of the fall semester)	•Special health examination for RI handler
January	•Submission of applications for advancement into the Doctoral program (April enrollment)		
February	•Preparation of theses	•Distribution of application form for tuition fee waiver (for the spring semester)	•Recruitment of research assistants
March	•Issue of certificate of admission, advancement, or transfer permission (April enrollment) •Commencement (For those graduating between October and March)	(In early March) •Application for tuition fee waiver for the spring semester •Application for deferment or monthly installment of tuition fee payment for the spring semester	•Recruitment of teaching assistants (for the spring semester) •Application for JSPS research fellowship (application accepted after April) •Assessment of employment and/or educational situation of graduating students

***Abbreviations:**

RI: Radio Isotopes

JSPS: the Japan Society for the Promotion of Science

Teaching Methods and Details

[Note]

The graduate programs generally recognized as “Master’s program” and “Doctoral program” are referred to with different terminology mainly due to the variation of required accuracy of the document, corresponding to their original Japanese word usages.

Some of the examples are as shown below.:

- **Master’s program:** first two years of doctoral program (博士課程前期２年の課程), two-year first-stage program (前期２年の課程), first phase course (前期課程)
- **Doctoral program**: last three years of doctoral program (博士課程後期３年の課程), three-year second-stage program (後期３年の課程), latter phase course (後期課程)

1. Education

① The graduate program of the Graduate School of Science is comprised of six majors — Mathematics, Physics, Astronomy, Geophysics, Chemistry and Earth Sciences. The program is categorized either as a two-year first–stage program or a three-year second stage program (hereinafter referred to as the "master's program" and "doctoral program", respectively). Education in the Graduate School of Science is carried out mainly by the faculty members of the Graduate School of Science, with the cooperation of the members of the Research Institutes and the Inter-Departmental Institutes for Education and Research.

② Education in the master's program is carried out through lectures, seminars and research guidance. In order to complete the program, students must be enrolled for two or more years, and obtain 30 or more credits. (22 or more of these credits must come from specialized courses) All students must receive the required research guidance, submit and successfully defend their master's thesis and pass a final examination. Those who have completed the program will be awarded a master's degree.
Those who have completed the master's program and wish to advance to the doctoral program must submit an application and pass the selection process.

③ Education in the doctoral program is mainly carried out using research guidance but is also carried out using lectures and seminars. In order to complete the program, students must be enrolled for three or more years, obtain 20 or more credits. (Of these credits, 16 or more must be from specialized courses, except for students who are physics majors. Physics majors need 18 or more credits from specialized courses.) They must receive the required research guidance, submit and successfully defend their doctoral thesis, and pass a final examination. Those who have completed the program will be awarded a doctoral degree.
However, those who have been recognized to possess an exceptionally high academic capability may be allowed to complete the program in less than the required minimum enrollment period.

④ Credits are awarded upon completion of courses, and after passing an examination. Teaching is carried out in the form of lectures, class exercises, laboratory experiments, and practicals (training). The credits for each course are determined by the type of teaching and the following criteria:

- Lectures and class exercises: 1 or 2 credits upon completion of 15 weeks of lectures, 2 hours per week
- Laboratory experiments and practicals (training): 1 or 1.5 credits upon completion of 15 weeks of lectures, 3 hours per week

Lectures are usually carried out once a week (two hours) over one semester consisting of 15 weeks. However, according to each course, lectures may be spread out over a longer period of time or over several semesters, or additional lectures may take place. Lectures may also be scheduled in a shorter period of time (intensive course). In Tohoku University, a 90-minute-lecture is regarded as a lecture of 2 hours.
Related courses in the list are courses offered by other majors or graduate schools; students may be approved of their registration for these courses upon request, only when they are particularly related to the student's major research.

⑤ If it is deemed educationally beneficial, students may be allowed to take courses or receive research guidance in other universities or may be allowed to study in an overseas university. Credits obtained or research guidance received may be transferred to this Graduate School.

International Graduate Program for Advanced Science (IGPAS)

The International Graduate Program for Advanced Science (IGPAS) was initiated in October 2004. The courses are taught in English and the students can receive research supervision in English. Courses offered for IGPAS students are available to other graduate students.

[Courses with a ※ sign in the “Note” section in the table of courses]
A course with a ※ sign marks a course taught in English for the International Graduate Program for Advanced Science (IGPAS).
For students who are Mathematics majors, the sign means that the course is offered in English to IGPAS students, whereas to other graduate students this will be taught in Japanese.
For students who are Physics majors, basic lectures (courses with a ※※ sign) are taught in English to IGPAS students and in Japanese to other graduate students.
For the details, refer to the “Course Schedule”.

2. Table of courses for the master's program

(1) Mathematics

Category	Course	Type	Credit	Note
Specialized Courses	Survey in Algebra	Lecture	2	
	Survey in Geometry	〃	2	
	Survey in Analysis	〃	2	
	Survey on Manifolds	〃	2	
	Survey in Applied Mathematics	〃	2	
	Advanced Introduction in Algebra	〃	2	
	Advanced Introduction in Geometry	〃	2	
	Advanced Introduction in Analysis	〃	2	
	Advanced Introduction in Manifolds	〃	2	
	Advanced Introduction in Applied Mathematics	〃	2	
	Advanced Topics in Algebra A	〃	2	
	Advanced Topics in Algebra B	〃	2	※
	Advanced Topics in Algebra C	〃	2	
	Advanced Topics in Algebra D	〃	2	※
	Advanced Topics in Geometry A	〃	2	
	Advanced Topics in Geometry B	〃	2	※
	Advanced Topics in Geometry C	〃	2	
	Advanced Topics in Geometry D	〃	2	※
	Advanced Topics in Analysis A	〃	2	
	Advanced Topics in Analysis B	〃	2	※
	Advanced Topics in Analysis C	〃	2	
	Advanced Topics in Analysis D	〃	2	※
	Advanced Topics on Manifolds A	〃	2	
	Advanced Topics on Manifolds B	〃	2	※
	Advanced Topics on Manifolds C	〃	2	
	Advanced Topics on Manifolds D	〃	2	※
	Advanced Topics in Applied Mathematics A	〃	2	
	Advanced Topics in Applied Mathematics B	〃	2	※
	Advanced Topics in Applied Mathematics C	〃	2	
	Advanced Topics in Applied Mathematics D	〃	2	※
	Advanced Topics in Algebraic Geometry	〃	2	
	Advanced Topics in Number Theory	〃	2	
	Advanced Topics in Arithmetic Geometry	〃	2	
	Advanced Topics in Differential Geometry	〃	2	
	Advanced Topics in Algebraic Topology	〃	2	
	Advanced Topics in Differential Topology	〃	2	
	Advanced Topics in Complex Analysis	〃	2	
	Advanced Topics in Real Analysis	〃	2	
	Advanced Topics in Harmonic Analysis	〃	2	
	Advanced Topics in Functional Analysis	〃	2	
	Advanced Topics on Operator Algebras	〃	2	
	Advanced Topics on Complex Manifolds	〃	2	
	Advanced Topics in Global Analysis	〃	2	
	Advanced Topics in Representation Theory	〃	2	
	Advanced Topics on Automorphic Functions	〃	2	
	Advanced Topics in Algebraic Analysis	〃	2	
	Advanced Topics in Mathematical Physics	〃	2	

2. 前期課程の授業科目表 Table of courses for the master's program

	Advanced Topics on Ordinary Differential Equations	Lecture	2	
	Advanced Topics on Partial Differential Equations	〃	2	
	Advanced Topics on Dynamical Systems	〃	2	
	Advanced Topics in Nonlinear Analysis	〃	2	
	Advanced Topics in Numerical Analysis	〃	2	
	Advanced Topics on Stochastic Processes	〃	2	
	Advanced Topics in Foundations of Mathematics	〃	2	
	Advanced Topics in Theory of Computation	〃	2	
	Advanced Topics in Mathematical Logic	〃	2	
	Advanced Course in Mathematics A	〃	2	
	Advanced Course in Mathematics B	〃	2	
	Advanced Course in Mathematics C	〃	2	
	Advanced Course in Mathematics D	〃	2	
	Advanced Course in Mathematics E	〃	2	
	Advanced Course in Mathematics F	〃	2	
	Advanced Course in Mathematics G	〃	2	
	Advanced Course in Mathematics H	〃	2	
	Advanced Course in Mathematics I	〃	2	
	Advanced Course in Mathematics J	〃	2	
	Advanced Course in Mathematics K	〃	2	
	Advanced Topics in Modern Mathematics A	〃	1	
	Advanced Topics in Modern Mathematics B	〃	1	
	Advanced Topics in Modern Mathematics C	〃	1	
	Advanced Topics in Modern Mathematics D	〃	1	
	Advanced Topics in Modern Mathematics E	〃	1	
	Advanced Topics in Modern Mathematics F	〃	1	
	Advanced Topics in Modern Mathematics G	〃	1	
	Advanced Topics in Modern Mathematics H	〃	1	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science A I	〃	2	※
	Advanced Topics of Bridging Particle-Matter Hierarchy Science A II	〃	2	※
	Advanced Topics of Bridging Particle-Matter Hierarchy Science A III	〃	2	※
	Advanced Topics of Bridging Particle-Matter Hierarchy Science A IV	〃	2	※
	Advanced Topics of Bridging Particle-Matter Hierarchy Science A V	〃	2	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science A VI	〃	2	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science B I	〃	1	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science B II	〃	1	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science B III	〃	1	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science B IV	〃	1	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science B V	〃	1	
	Advanced Topics of Bridging Particle-Matter Hierarchy Science B VI	〃	1	
	Internship Training	Training	2	
	Short-Term Internship Training	〃	1	
	Overseas Internship	〃	2	
	Seminar I	Seminar	4	Compulsory
	Seminar II	〃	4	Compulsory
	Research	Training	8	Compulsory
Inter-disciplinary Study Courses	Frontiers in Science I	Lecture	2	※ IGPAS Students
	Frontiers in Science II	〃	2	※ should select
	Internship Training	Training	2	※ one course
	Information Sciences	Lecture	2	※ from the left
Related Courses	Science and Society	Lecture	1	Up to two credits of "Graduate School Common Subjects" may be included in the completion requirement credits
	Science Communication *Other than the above, the following can be certified as related courses: - Graduate School Common Subjects - Courses approved by the Graduate School Committee	〃	1	

(2) Physics

Category	Course	Type	Credit	Note
Specialized courses	Lecture on Basic Quantum Field Theory	Lecture	2	※※
	Lecture on Advanced Quantum Field Theory	〃	2	※
	Lecture on Elementary Particle Theory	〃	2	
	Lecture on Nuclear Theory	〃	2	※
	Lecture on Mathematical Quantum Physics	〃	2	
	Lecture on Cosmology and Fundamental Physics	〃	2	
	Lecture on Basic Elementary Particle Physics	〃	2	※※
	Lecture on Nuclear Physics	〃	2	※
	Lecture on High Energy Physics	〃	2	※
	Lecture on Basic Nuclear Physics	〃	2	※※
	Lecture on Physics of Electrons	〃	2	※In a two-year period, two courses of these four will be offered in English.
	Lecture on Condensed Matter Physics	〃	2	
	Lecture on Solid State Physics	〃	2	
	Lecture on Advanced Strongly Correlated Systems in Solid State	〃	2	
	Lecture on Basic Materials Science	〃	2	※※
	Lecture on Basic Solid State Spectroscopy	〃	2	※※
	Lecture on Solid State Spectroscopy I	〃	2	
	Lecture on Solid State Spectroscopy II	〃	2	※
	Lecture on Chemical Physics	〃	2	
	Lecture on Theory of Electrons in Solid	〃	2	※
	Lecture on Statistical Physics	〃	2	※
	Lecture on Basic Solid State Physics and Statistical Physics	〃	2	※※
	Lecture on Biomaterial Physics	〃	2	※
	Lecture on Soft Matter Physics	〃	2	
	Lecture on Advanced Physics of Beams	〃	2	
	Lecture on Electron Beam Nuclear Physics	〃	2	
	Lecture on Advanced Quark Nuclear Physics	〃	2	
	Lecture on Non Accelerator Physics	〃	2	※
	Lecture on Physics of Crystals	〃	2	
	Lecture on Surface Physics	〃	2	
	Lecture on Physics of Metals	〃	2	
	Lecture on Magnetism	〃	2	
	Lecture on Electron Theory of Metals	〃	2	
	Lecture on Spectroscopy in Physics	〃	2	
	Lecture on Diffraction and Spectroscopy	〃	2	
	Lecture on Nuclear Radiation Physics	〃	2	
	Lecture on Accelerator Physics	〃	1	
	Lecture on Advanced Condensed Matter Physics	〃	1	
	Lecture on Advanced Quantum Sensing and Measurements	〃	1	
	Special Lecture on Physics Condensed Matter Physics I	〃	1	
	Special Lecture on Physics Condensed Matter Physics II	〃	1	
	Special Lecture on Physics Condensed Matter Physics III	〃	1	
	Special Lecture on Physics Condensed Matter Physics IV	〃	1	
	Special Lecture on Physics Condensed Matter Physics V	〃	1	
	Special Lecture on Physics Condensed Matter Physics VI	〃	1	
	Special Lecture on Physics Condensed Matter Physics VII	〃	1	
	Special Lecture on Physics Condensed Matter Physics VIII	〃	1	
	Special Lecture on Particle and Nuclear Physics I	〃	1	
	Special Lecture on Particle and Nuclear Physics II	〃	1	

2. 前期課程の授業科目表 Table of courses for the master's program

	Special Lecture on Particle and Nuclear Physics III	Lecture	1	
	Special Lecture on Particle and Nuclear Physics IV	〃	1	
	Special Lecture on Particle and Nuclear Physics V	〃	1	
	Special Lecture on Particle and Nuclear Physics VI	〃	1	
	Special Lecture on Particle and Nuclear Physics VII	〃	1	
	Special Lecture on Particle and Nuclear Physics VIII	〃	1	
	Special Lecture on Particle and Nuclear Physics IX	〃	1	
	Special Lecture on Particle and Nuclear Physics X	〃	1	
	Lecture on Bridging Particle-Matter Hierarchy science A I	〃	2	※
	Lecture on Bridging Particle-Matter Hierarchy science A II	〃	2	※
	Lecture on Bridging Particle-Matter Hierarchy science A III	〃	2	※
	Lecture on Bridging Particle-Matter Hierarchy science A IV	〃	2	※
	Lecture on Bridging Particle-Matter Hierarchy science A V	〃	2	※
	Lecture on Bridging Particle-Matter Hierarchy science A VI	〃	2	※
	Lecture on Bridging Particle-Matter Hierarchy science B I	〃	1	※
	Lecture on Bridging Particle-Matter Hierarchy science B II	〃	1	※
	Lecture on Bridging Particle-Matter Hierarchy science B III	〃	1	※
	Lecture on Bridging Particle-Matter Hierarchy science B IV	〃	1	※
	Lecture on Bridging Particle-Matter Hierarchy science B V	〃	1	※
	Lecture on Bridging Particle-Matter Hierarchy science B VI	〃	1	※
	Basic Spintronics and Material Science I	〃	2	※
	Basic Spintronics and Material Science II	〃	2	※
	Global Communication	〃	2	
	Survey on Physics for the Universe	〃	2	*Up to two credits in total for "training" in specialized courses, interdisciplinary study courses, and related courses may be included in the completion requirements.
	Special Seminar on Physics for the Universe	Seminar	2	
	Special Lecture on Physics for the Universe	Lecture	2	
	International Training on Physics for the Universe	Training	2	
	Internship Training	〃	2	
	Overseas Internship	〃	2	
	Seminar I	Seminar	3	Compulsory
	Seminar II	〃	3	Compulsory
	Research Work I	Training and Experiments	5	Compulsory
	Research Work II	〃	5	Compulsory
Inter-disciplinary Study Courses	Frontiers in Science I	Lecture	2	※ IGPAS Students
	Frontiers in Science II	〃	2	※ should select
	Internship training	Training	2	※ one course
	Information Science	Lecture	2	※ from the left
Related Courses	Science and Society	Lecture	1	
	Science Communication	〃	1	
	Materials Science International I	〃	2	
	*Other than the above, the following can be certified as related courses: - Specialized Courses from Astronomy major - Graduate School Common Subjects - Courses approved by the Graduate School Committee			

(3) Astronomy

Category	Course	Type	Credit	Note
Specialized Courses	Advanced Course on Physics of Stars I	Lecture	2	
	Advanced Course on Physics of Stars II	〃	2	
	Advanced Course on Physics of Stars III	〃	2	
	Advanced Course on Interstellar Physics I	〃	2	
	Advanced Course on Interstellar Physics II	〃	2	
	Advanced Course on Interstellar Physics III	〃	2	
	Advanced Course on Physics of Galaxies I	〃	2	※
	Advanced Course on Physics of Galaxies II	〃	2	※
	Advanced Course on Physics of Galaxies III	〃	2	
	Advanced Course on Theoretical Astrophysics I	〃	2	
	Advanced Course on Theoretical Astrophysics II	〃	2	
	Advanced Course on Theoretical Astrophysics III	〃	2	※
	Advanced Course on Theoretical Astrophysics IV	〃	2	
	Advanced Course on Radio Astronomy I	〃	2	※
	Advanced Course on Radio Astronomy II	〃	2	
	Advanced Course on Radio Astronomy III	〃	2	
	Advanced Course on Radio Astronomy IV	〃	2	
	Advanced Course on Observational Astronomy I	〃	2	
	Advanced Course on Observational Astronomy II	〃	2	
	Advanced Course on Observational Astronomy III	〃	2	
	Advanced Course on Relativistic Astrophysics I	〃	2	
	Advanced Course on Relativistic Astrophysics II	〃	2	
	Advanced Course on Relativistic Astrophysics II	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science A I	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science A II	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science A III	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science A IV	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science A V	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science A VI	〃	2	
	Advanced Course on Bridging Particle-Matter Hierarchy Science B I	〃	1	
	Advanced Course on Bridging Particle-Matter Hierarchy Science B II	〃	1	
	Advanced Course on Bridging Particle-Matter Hierarchy Science B III	〃	1	
	Advanced Course on Bridging Particle-Matter Hierarchy Science B IV	〃	1	
	Advanced Course on Bridging Particle-Matter Hierarchy Science B V	〃	1	
	Advanced Course on Bridging Particle-Matter Hierarchy Science B VI	〃	1	
	Advanced Course on Natural Disaster Science I	〃	2	
	Advanced Course on Natural Disaster Science II	〃	2	
	Survey on Physics for the Universe	〃	2	
	Special Seminar on Physics for the Universe	Seminar	2	
	Special Lecture on Physics for the Universe	Lecture	2	
	International Training on Physics for the Universe	Training	2	
	Internship Training	〃	2	
	Overseas Internship	〃	2	
	Seminar	Seminar	8	Compulsory
	Research	Training and Experiments	8	Compulsory
Inter-disciplinary Study Courses	Frontiers in Science I	Lecture	2	※ IGPAS Students
	Frontiers in Science II	〃	2	※ should select
	Internship training	Training	2	※ one course
	Information Sciences	Lecture	2	※ from the left
Related Courses	Science and Society	Lecture	1	
	Science Communication	〃	1	
	Other than the above, the following can be certified as related courses: -Specialized Courses from Physics, Geophysics, and Earth Science major - Graduate School Common Subjects - Courses approved by the Graduate School Committee			

(4) Geophysics

Category	Course	Type	Credit	Note
Specialized courses	Advanced Seismology I	Lecture	2	
	Advanced Seismology II	〃	2	
	Advanced Physics of Earthquake Source	〃	2	
	Advanced Crust Physics I	〃	2	
	Advanced Crust Physics II	〃	2	
	Advanced Lecture on Seismological and Volcanological Measure	〃	2	
	Advanced Physical Volcanology	〃	2	
	Advanced Lecture on Solid Earth Physics I	〃	2	※
	Advanced Lecture on Solid Earth Physics II	〃	2	※
	Advanced Solar System Physics	〃	2	※
	Advanced Space Plasma Physics I	〃	2	
	Advanced Space Plasma Physics II	〃	2	※
	Advanced Planetary Atmosphere Physics	〃	2	
	Advanced Ionospheric and Magnetospheric Physics	〃	2	
	Advanced Upper Atmosphere Physics	〃	2	
	Advanced Planetary Radio Wave Physics	〃	2	
	Advanced Observation Technics in Space Research I	〃	2	
	Advanced Observation Technics in Space Research II	〃	2	
	Advanced Atmospheric Physics	〃	2	
	Advanced Meteorology	〃	2	※
	Advanced Atmospheric Dynamics	〃	2	
	Advanced Physical Oceanology I	〃	2	
	Advanced Physical Oceanology II	〃	2	
	Advanced Air-Sea Interaction	〃	2	
	Advanced Atmospheric Radiation	〃	2	
	Advanced Physical Climatology	〃	2	
	Advanced Satellite Oceanography	〃	2	
	Advanced Ocean Environmental Science	〃	2	
	Atmospheric Science	〃	2	
	Advanced Physical Oceanology	〃	2	※
	Special Lecture on Earth and Planetary Dynamics	〃	1	
	Earth and Planetary Dynamics Special Training I	Seminar	1	
	Earth and Planetary Dynamics Special Training II	〃	1	
	Earth and Planetary Dynamics Special Training III	〃	1	
	Special Lecture on Earth and Planetary Physics I	Lecture	1	
	Special Lecture on Earth and Planetary Physics II	〃	1	
	Special Lecture on Earth and Planetary Physics III	〃	1	
	Special Lecture on Earth and Planetary Physics IV	〃	1	
	Special Lecture on Earth and Planetary Physics V	〃	1	
	Special Lecture on Earth and Planetary Physics VI	〃	1	

2. 前期課程の授業科目表 Table of courses for the master's program

	Earth and Planetary Physics Special Training I	Seminar	1	
	Earth and Planetary Physics Special Training II	〃	1	
	Earth and Planetary Physics Special Training III	〃	1	
	Earth and Planetary Physics Special Training IV	〃	1	
	Earth and Planetary Physics Special Training V	〃	1	
	Earth and Planetary Physics Special Training VI	〃	1	
	Special Lecture on Atmospheric and Oceanic Sciences I	Lecture	1	
	Special Lecture on Atmospheric and Oceanic Sciences II	〃	1	
	Internship Training I	Training	1	
	Internship Training II	〃	1	
	Overseas Internship I	〃	1	
	Overseas Internship II	〃	1	
	Introduction Lecture on Environmental and Earth Science I	Lecture	2	
	Introduction Lecture on Environmental and Earth Science II	〃	2	
	Seminar in Geophysics I	Seminar	2	Compulsory
	Seminar in Geophysics II	〃	2	Compulsory
	Seminar in Geophysics III	〃	2	Compulsory
	Seminar in Geophysics IV	〃	2	Compulsory
	Research for Master's Thesis in Geophysics I	Training	2	Compulsory
	Research for Master's Thesis in Geophysics II	〃	2	Compulsory
	Research for Master's Thesis in Geophysics III	〃	2	Compulsory
	Research for Master's Thesis in Geophysics IV	〃	2	Compulsory
Inter-disciplinary Study Courses	Frontiers in Science I	Lecture	2	※ IGPAS Students
	Frontiers in Science II	〃	2	※ should select
	Internship Training	Training	2	※ one course
	Information Science	Lecture	2	※ from the left
Related courses	Science and Society	Lecture	1	
	Science Communication	〃	1	
	*Other than the above, the following can be certified as related courses - Specialized Courses from Astronomy and Earth Science major - Basic Lectures offered in the field of Specialization and Lectures offered in the field of Specialization from the Graduate School of Environmental Studies - Courses offered for WISE Program for Sustainability in the Dynamic Earth (SyDE) - Graduate School Common Subjects - Courses approved by the Graduate School Committee			

(5) Chemistry

Category	Course	Type	Credit	Note
Specialized courses	Topics in Inorganic and Analytical Chemistry I A	Lecture	1	
	Topics in Inorganic and Analytical Chemistry I B	〃	1	
	Topics in Inorganic and Analytical Chemistry II A	〃	1	
	Topics in Inorganic and Analytical Chemistry II B	〃	1	
	Topics in Inorganic and Analytical Chemistry III A	〃	1	
	Topics in Inorganic and Analytical Chemistry III B	〃	1	
	Topics in Inorganic and Analytical Chemistry IV A	〃	1	
	Topics in Inorganic and Analytical Chemistry IV B	〃	1	
	Current Topics in Inorganic and Analytical Chemistry A	〃	1	
	Current Topics in Inorganic and Analytical Chemistry B	〃	1	
	Topics in Organic Chemistry I A	〃	1	
	Topics in Organic Chemistry I B	〃	1	
	Topics in Organic Chemistry II A	〃	1	
	Topics in Organic Chemistry II B	〃	1	
	Topics in Organic Chemistry III A	〃	1	
	Topics in Organic Chemistry III B	〃	1	
	Topics in Organic Chemistry IV A	〃	1	
	Topics in Organic Chemistry IV B	〃	1	
	Topics in Organic Chemistry V A	〃	1	
	Topics in Organic Chemistry V B	〃	1	
	Current Topics in Organic Chemistry A	〃	1	
	Current Topics in Organic Chemistry B	〃	1	
	Topics in Physical Chemistry I A	〃	1	
	Topics in Physical Chemistry I B	〃	1	
	Topics in Physical Chemistry II A	〃	1	
	Topics in Physical Chemistry II B	〃	1	
	Topics in Physical Chemistry III A	〃	1	
	Topics in Physical Chemistry III B	〃	1	
	Topics in Physical Chemistry IV A	〃	1	
	Topics in Physical Chemistry IV B	〃	1	
	Topics in Physical Chemistry V A	〃	1	
	Topics in Physical Chemistry V B	〃	1	
	Current Topics in Physical Chemistry A	〃	1	
	Current Topics in Physical Chemistry B	〃	1	
	Topics in Interdisciplinary Chemistry I A	〃	1	
	Topics in Interdisciplinary Chemistry I B	〃	1	
	Topics in Interdisciplinary Chemistry II A	〃	1	
	Topics in Interdisciplinary Chemistry II B	〃	1	
	Topics in Interdisciplinary Chemistry III A	〃	1	
	Topics in Interdisciplinary Chemistry III B	〃	1	
	Topics in Interdisciplinary Chemistry IV A	〃	1	
	Topics in Interdisciplinary Chemistry IV B	〃	1	
	Topics in Interdisciplinary Chemistry V A	〃	1	
	Topics in Interdisciplinary Chemistry V B	〃	1	
	Current Topics in Interdisciplinary Chemistry A	〃	1	
	Current Topics in Interdisciplinary Chemistry B	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry I A	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry I B	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry II A	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry II B	〃	1	

2. 前期課程の授業科目表 Table of courses for the master's program

	Topics in Advanced Atomic and Molecular Chemistry Ⅲ A	Lecture	1	
	Topics in Advanced Atomic and Molecular Chemistry Ⅲ B	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry Ⅲ C	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry Ⅲ D	〃	1	
	Topics in Advanced Atomic and Molecular Chemistry Ⅲ E	〃	1	
	Current Topics in Advanced Atomic and Molecular Chemistry A	〃	1	
	Current Topics in Advanced Atomic and Molecular Chemistry B	〃	1	
	Topics in Reaction Mechanism and Dynamics I A	〃	1	
	Topics in Reaction Mechanism and Dynamics I B	〃	1	
	Topics in Reaction Mechanism and Dynamics II A	〃	1	
	Topics in Reaction Mechanism and Dynamics III A	〃	1	
	Topics in Reaction Mechanism and Dynamics III B	〃	1	
	Topics in Reaction Mechanism and Dynamics IV A	〃	1	
	Topics in Reaction Mechanism and Dynamics IV B	〃	1	
	Topics in Reaction Mechanism and Dynamics V A	〃	1	
	Topics in Reaction Mechanism and Dynamics V B	〃	1	
	Topics in Reaction Mechanism and Dynamics VI A	〃	1	
	Topics in Solid State Chemistry I A	〃	1	
	Topics in Solid State Chemistry II A	〃	1	
	Topics in Solid State Chemistry III A	〃	1	
	Topics in Solid State Chemistry III B	〃	1	
	Topics in Biofunctional Chemistry I A	〃	1	
	Topics in Biofunctional Chemistry II A	〃	1	
	Topics in Biofunctional Chemistry III A	〃	1	
	Topics in Biofunctional Chemistry IV A	〃	1	
	Topics in Separation Chemistry I A	〃	1	
	Topics in Separation Chemistry I B	〃	1	
	Topics in Chemistry of Heavy Elements I A	〃	1	
	Topics in Chemistry of Heavy Elements I B	〃	1	
	Advanced Inorganic Chemistry I	〃	2	※
	Advanced Inorganic Chemistry II	〃	2	※
	Advanced Inorganic Chemistry III	〃	2	※
	Advanced Inorganic Chemistry IV	〃	2	※
	Advanced Analytical Chemistry I	〃	2	※
	Advanced Analytical Chemistry II	〃	2	※
	Advanced Organic Chemistry I	〃	2	※
	Advanced Organic Chemistry II	〃	2	※
	Advanced Organic Chemistry III	〃	2	※
	Advanced Organic Chemistry IV	〃	2	※
	Advanced Organic Chemistry V	〃	2	※
	Advanced Organic Chemistry VI	〃	2	※
	Advanced Physical Chemistry I	〃	2	※
	Advanced Physical Chemistry II	〃	2	※
	Advanced Physical Chemistry III	〃	2	※
	Advanced Physical Chemistry IV	〃	2	※
	Advanced Physical Chemistry V	〃	2	※
	Advanced Physical Chemistry VI	〃	2	※
	Advanced Biochemistry I	〃	2	※
	Advanced Biochemistry II	〃	2	※
	Advanced Biochemistry III	〃	2	※
	Advanced Chemistry International I	〃	2	
	Practical English Presentation I	〃	2	
	Advanced Chemistry Special Training I	Training	1	
	Internship Training	〃	2	
	Overseas Internship	〃	2	

2. 前期課程の授業科目表 Table of courses for the master's program

	Seminar I	Seminar	1	Compulsory
	Seminar II	〃	1	Compulsory
	Seminar III	〃	2	Compulsory
	Seminar IV	〃	2	Compulsory
	Research I	Training and Experiments	2	Compulsory
	Research II	〃	2	Compulsory
	Research III	〃	3	Compulsory
	Research IV	〃	3	Compulsory
Inter-disciplinary Study Courses	Frontiers in Science I	Lecture	2	※ IGPAS Students
	Frontiers in Science II	〃	2	※ should select
	Internship Training	Training	2	※ one course
	Information Science	Lecture	2	※ from the left
Related Courses	Science and Society	Lecture	1	
	Science Communication	〃	1	
	Materials Science International I	〃	2	
	*Other than the above, the following can be certified as related courses - Major Basic Subjects provided for the Department of Applied Chemistry, Chemical Engineering, and Biomolecular Engineering from the Graduate School of Engineering - Graduate School Common Subjects - Courses approved by the Graduate School Committee			
Free Auditing Courses	Advanced Chemistry Practice I	Training	1	

(6) Earth Science

Category	Course	Type	Credit	Note
Specialized courses	Advanced Lecture on Geodynamics I	Lecture	2	
	Advanced Lecture on Geodynamics II	〃	2	
	Advanced Lecture on Geohistory I	〃	2	
	Advanced Lecture on Geohistory II	〃	2	
	Advanced Lecture on Environmental Geology I	〃	2	
	Advanced Lecture on Environmental Geology II	〃	2	Offered in even-numbered years
	Advanced Lecture on Reef Evolution	〃	2	
	Advanced Lecture on Coral Reef Science	〃	2	Offered in odd-numbered years
	Advanced Lecture on Paleoceanography	〃	2	Offered in even-numbered years
	Advanced Lecture on Evolutionary Paleobiology	〃	2	Offered in odd-numbered years
	Advanced Lecture on Bioevent Geology	〃	2	
	Advanced Lecture on Environmental Dynamics I	〃	2	
	Advanced Lecture on Environmental Dynamics II	〃	2	
	Advanced Lecture on Environmental Dynamics III	〃	2	
	Advanced Lecture on Geomorphology I	〃	2	
	Advanced Lecture on Geomorphology II	〃	2	
	Advanced Lecture on Climatology I	〃	2	
	Advanced Lecture on Climatology II	〃	2	
	Advanced Lecture on Human Geography I	〃	2	
	Advanced Lecture on Human Geography II	〃	2	
	Advanced Lecture on Regional System	〃	2	

	Advanced Lecture on Regional Environment	Lecture	2	
	Advanced Lecture on Environmental Geography I	〃	2	
	Advanced Lecture on Environmental Geography II	〃	2	
	Advanced Lecture on Environmental Geochemistry	〃	2	
	Advanced Lecture on Mineral Texture I	〃	2	
	Advanced Lecture on Mineral Texture II	〃	2	
	Advanced Lecture on Mineral Structure I	〃	2	
	Advanced Lecture on Mineral Structure II	〃	2	
	Advanced Lecture on Petrology I	〃	2	
	Advanced Lecture on Petrology II	〃	2	
	Advanced Lecture on Metamorphic Rock I	〃	2	
	Advanced Lecture on Metamorphic Rock II	〃	2	
	Advanced Lecture on Geoscience of Origin and Evolution of Life I	〃	2	
	Advanced Lecture on Geoscience of Origin and Evolution of Life II	〃	2	
	Advanced Lecture on Resource Geochemistry	〃	2	
	Advanced Lecture on Primitive Solar System Material I	〃	2	
	Advanced Lecture on Primitive Solar System Material II	〃	2	
	Advanced Lecture on Physical Chemistry of the Earth's Interior I	〃	2	
	Advanced Lecture on Physical Chemistry of the Earth's Interior II	〃	2	
	Special Lecture on Quantum-beam Earth Science I	〃	2	
	Special Lecture on Quantum-beam Earth Science II	〃	2	
	Advanced Lecture on Volcanology and Geofluid Sciences I	〃	2	
	Advanced Lecture on Volcanology and Geofluid Sciences II	〃	2	
	Advanced Lecture on applied mineralogy	〃	2	
	Advanced Lecture on Material Transport in the Earth I	〃	2	
	Advanced Lecture on Material Transport in the Earth II	〃	2	
	Advanced Lecture on Solid Planetology I	〃	2	
	Advanced Lecture on Solid Planetology II	〃	2	
	Advanced Lecture on Earth and Planetary Materials I	〃	1	
	Advanced Lecture on Earth and Planetary Materials II	〃	1	
	Advanced Lecture on Earth and Planetary Materials III	〃	1	
	Fundamentals of Earth and Planetary Materials I	〃	1	
	Fundamentals of Earth and Planetary Materials II	〃	1	
	Fundamentals of Earth and Planetary Materials III	〃	1	
	Fundamentals of Earth and Planetary Materials IV	〃	1	
	Special Lecture on Tectonics I	〃	1	
	Special Lecture on Tectonics II	〃	1	
	Special Lecture on Environmental Geology I	〃	1	
	Special Lecture on Environmental Geology II	〃	1	
	Special Lecture on Paleontology I	〃	1	
	Special Lecture on Paleontology II	〃	1	
	Special Lecture on Environmental Dynamics I	〃	1	
	Special Lecture on Environmental Dynamics II	〃	1	
	Special Lecture on Physical Geography I	〃	1	
	Special Lecture on Physical Geography II	〃	1	

	Special Lecture on Human Geography I	Lecture	1	
	Special Lecture on Human Geography II	〃	1	
	Special Lecture on Environmental Geography I	〃	1	
	Special Lecture on Environmental Geography II	〃	1	
	Special Lecture on Environmental Geochemistry I	〃	1	
	Special Lecture on Environmental Geochemistry II	〃	1	
	Special Lecture on Environmental Geochemistry III	〃	1	
	Special Lecture on Environmental Geochemistry IV	〃	1	
	Special Lecture on Mineralogy I	〃	1	
	Special Lecture on Mineralogy II	〃	1	
	Special Lecture on Petrology I	〃	1	
	Special lecture on Petrology II	〃	1	
	Special Lecture on Resource Geochemistry I	〃	1	
	Special Lecture on Resource Geochemistry II	〃	1	
	Special Lecture on Early Solar System Evolution I	〃	1	
	Special Lecture on Early Solar System Evolution II	〃	1	
	Special Lecture on Earth and Planetary Physics I	〃	1	
	Special Lecture on Earth and Planetary Physics II	〃	1	
	Special Lecture on Volcanology and Geofluid Sciences I	〃	1	
	Special Lecture on Volcanology and Geofluid Sciences II	〃	1	
	Special Lecture on Comparative Solid Planetology I	〃	1	
	Special Lecture on Comparative Solid Planetology II	〃	1	
	Special Lecture on Crustal Geochemistry I	〃	1	
	Special Lecture on Crustal Geochemistry II	〃	1	
	Special Lecture on Frontier Earth Sciences	〃	1	
	Special Lecture on Earth Science I	〃	2	
	Special Lecture on Earth Science II	〃	2	
	Special Lecture on Earth Science III	〃	2	
	Special Lecture on Frontiers of Earth Sciences I	〃	1	
	Special Lecture on Frontiers of Earth Sciences II	〃	1	
	Special Lecture on Frontiers of Earth Sciences III	〃	1	
	Special Lecture on Frontiers of Earth Sciences IV	〃	1	
	Special Lecture on Earth and Planetary Dynamics	〃	1	
	Earth and Planetary Dynamics Special Training I	Seminar	1	
	Earth and Planetary Dynamics Special Training II	〃	1	
	Earth and Planetary Dynamics Special Training III	〃	1	※
	Rock and Mineral Science I	Lecture	2	※
	Rock and Mineral Science II	〃	2	※
	Rock and Mineral Science III	〃	2	※
	Origin of the Earth and Life I	〃	2	※
	Origin of the Earth and Life II	〃	2	※
	Origin of the Earth and Life III	〃	2	※
	Origin of the Earth and Life IV	〃	2	※
	Field Science I	〃	1	※
	Field Science II	〃	1	※
	Tectonics and Geodynamics	〃	2	※
	Environmental Science	〃	2	※
	Geography	〃	2	
	Bio-geological Science	〃	2	
	Internship Training	Training	2	

	Overseas Internship	Training	2	
	Advanced Lecture on Natural Hazards	Lecture	2	
	Earthquakes and Volcanoes	〃	2	
	International Mechanism of Natural Disaster	〃	2	
	Ecosystem and Global Environmental Change	〃	2	
	Natural Disaster Science Special Training	Seminar	2	
	International Lecture on Global Disaster Mitigation I	Lecture	2	
	International Lecture on Global Disaster Mitigation II	〃	2	
	Industry-Academia Partnership Seminar I	〃	1	
	Industry-Academia Partnership Seminar II	〃	1	
	Practice on Global Safety I	Seminar	1	
	Practice on Global Safety II	〃	1	
	Practice on Global Safety III	〃	1	
	Practice on Global Safety IV	〃	1	
	Seminar on Earth Science I	Lecture	1	
	Seminar on Earth Science II	〃	1	
	Seminar on Earth Science III	〃	1	
	Seminar on Earth Science IV	〃	1	
	Seminar on Earth Science V	〃	1	
	Introduction Lecture on Environmental and Earth Science I	〃	2	
	Introduction Lecture on Environmental and Earth Science II	〃	2	
	Seminar	〃	8	Compulsory
	Research	Experiment	8	Compulsory
Inter-disciplinary Study Courses	Frontiers in Science I	Lecture	2	※ IGPAS Students
	Frontiers in Science II	〃	2	※ should select
	Internship training	Training	2	※ one course
	Information Science	Lecture	2	※ from the left
Related Courses	Science and Society	Lecture	1	Up to two credits of "Graduate School Common Subjects" may be included in the completion requirement credits
	Science Communication	〃	1	
	Lecture on Disaster Mitigation I	〃	1	
	Lecture on Disaster Mitigation II	〃	1	
	Lecture on Disaster Mitigation III	〃	1	
	Lecture on Disaster Mitigation IV	〃	1	
	Lecture on Disaster Mitigation V	〃	1	
	Lecture on Disaster Mitigation VI	〃	1	
	Lecture on Disaster Mitigation VII	〃	1	
	Lecture on Disaster Mitigation VIII	〃	1	
	* Other than the above, the following can be certified as related courses: - Specialized Courses from Geophysics major - Basic Lectures offered in the field of Specialization and Lectures offered in the field of Specialization from the Graduate School of Environmental Studies - Courses offered for WISE Program for Sustainability in the Dynamic Earth (SyDE) - Graduate School Common Subjects - Courses approved by the Graduate School Committee			

(7) Common

Category	Course	Type	Credit	Note
Free Auditing Course	Cross-Disciplinary Studies I	Lecture	2	Credits obtained do not count as requirements for program completion

3. Table of courses for the doctoral program

(1) Mathematics

Category	Course	Type	Credit	Note
Specialized Courses	Special Topics in Algebra A	Lecture	2	
	Special Topics in Algebra B	〃	2	
	Special Topics in Algebra C	〃	2	
	Special Topics in Algebra D I	〃	2	
	Special Topics in Algebra D II	〃	2	
	Special Topics in Algebra D III	〃	2	
	Special Topics in Algebra E I	〃	2	
	Special Topics in Algebra E II	〃	2	
	Special Topics in Algebra E III	〃	2	
	Special Topics in Algebra F I	〃	2	
	Special Topics in Algebra F II	〃	2	
	Special Topics in Algebra F III	〃	2	
	Special Topics in Algebra G I	〃	2	
	Special Topics in Algebra G II	〃	2	
	Special Topics in Algebra G III	〃	2	
	Special Topics in Algebra H I	〃	2	
	Special Topics in Algebra H II	〃	2	
	Special Topics in Algebra H III	〃	2	
	Special Topics in Geometry A	〃	2	
	Special Topics in Geometry B	〃	2	
	Special Topics in Geometry C	〃	2	
	Special Topics in Geometry D I	〃	2	
	Special Topics in Geometry D II	〃	2	
	Special Topics in Geometry D III	〃	2	
	Special Topics in Geometry E I	〃	2	
	Special Topics in Geometry E II	〃	2	
	Special Topics in Geometry E III	〃	2	
	Special Topics in Geometry F I	〃	2	
	Special Topics in Geometry F II	〃	2	
	Special Topics in Geometry F III	〃	2	
	Special Topics in Geometry G I	〃	2	
	Special Topics in Geometry G II	〃	2	
	Special Topics in Geometry G III	〃	2	
	Special Topics in Geometry H I	〃	2	
	Special Topics in Geometry H II	〃	2	
	Special Topics in Geometry H III	〃	2	
	Special Topics in Analysis A	〃	2	

	Special Topics in Analysis B	Lecture	2	
	Special Topics in Analysis C	〃	2	
	Special Topics in Analysis D I	〃	2	
	Special Topics in Analysis D II	〃	2	
	Special Topics in Analysis D III	〃	2	
	Special Topics in Analysis E I	〃	2	
	Special Topics in Analysis E II	〃	2	
	Special Topics in Analysis E III	〃	2	
	Special Topics in Analysis F I	〃	2	
	Special Topics in Analysis F II	〃	2	
	Special Topics in Analysis F III	〃	2	
	Special Topics in Analysis G I	〃	2	
	Special Topics in Analysis G II	〃	2	
	Special Topics in Analysis G III	〃	2	
	Special Topics in Analysis H I	〃	2	
	Special Topics in Analysis H II	〃	2	
	Special Topics in Analysis H III	〃	2	
	Special Topics on Manifolds A	〃	2	
	Special Topics on Manifolds B	〃	2	
	Special Topics on Manifolds C	〃	2	
	Special Topics on Manifolds D I	〃	2	
	Special Topics on Manifolds D II	〃	2	
	Special Topics on Manifolds D III	〃	2	
	Special Topics on Manifolds E I	〃	2	
	Special Topics on Manifolds E II	〃	2	
	Special Topics on Manifolds E III	〃	2	
	Special Topics on Manifolds F I	〃	2	
	Special Topics on Manifolds F II	〃	2	
	Special Topics on Manifolds F III	〃	2	
	Special Topics on Manifolds G I	〃	2	
	Special Topics on Manifolds G II	〃	2	
	Special Topics on Manifolds G III	〃	2	
	Special Topics on Manifolds H I	〃	2	
	Special Topics on Manifolds H II	〃	2	
	Special Topics on Manifolds H III	〃	2	
	Special Topics in Applied Mathematics A	〃	2	
	Special Topics in Applied Mathematics B	〃	2	
	Special Topics in Applied Mathematics C	〃	2	
	Special Topics in Applied Mathematics D I	〃	2	
	Special Topics in Applied Mathematics D II	〃	2	
	Special Topics in Applied Mathematics D III	〃	2	
	Special Topics in Applied Mathematics E I	〃	2	
	Special Topics in Applied Mathematics E II	〃	2	
	Special Topics in Applied Mathematics E III	〃	2	
	Special Topics in Applied Mathematics F I	〃	2	
	Special Topics in Applied Mathematics F II	〃	2	
	Special Topics in Applied Mathematics F III	〃	2	
	Special Topics in Applied Mathematics G I	〃	2	
	Special Topics in Applied Mathematics G II	〃	2	

3. 後期課程の授業科目表 Table of courses for the doctoral program

	Special Topics in Applied Mathematics G III	Lecture	2	
	Special Topics in Applied Mathematics H I	〃	2	
	Special Topics in Applied Mathematics H II	〃	2	
	Special Topics in Applied Mathematics H III	〃	2	
	Special Topics in Modern Mathematics I	〃	1	
	Special Topics in Modern Mathematics II	〃	1	
	Special Topics in Modern Mathematics III	〃	1	
	Special Topics in Modern Mathematics IV	〃	1	
	Special Topics in Modern Mathematics V	〃	1	
	Special Topics in Modern Mathematics VI	〃	1	
	Special Topics in Modern Mathematics VII	〃	1	
	Special Topics in Modern Mathematics VIII	〃	1	
	Special Topics in Modern Mathematics IX	〃	1	
	Special Topics in Modern Mathematics X	〃	1	
	Special Topics of Bridging Particle-Matter Hierarchy Science A I	〃	2	
	Special Topics of Bridging Particle-Matter Hierarchy Science A II	〃	2	
	Special Topics of Bridging Particle-Matter Hierarchy Science A III	〃	2	
	Special Topics of Bridging Particle-Matter Hierarchy Science A IV	〃	2	
	Special Topics of Bridging Particle-Matter Hierarchy Science A V	〃	2	
	Special Topics of Bridging Particle-Matter Hierarchy Science A VI	〃	2	
	Special Topics of Bridging Particle-Matter Hierarchy Science B I	〃	1	
	Special Topics of Bridging Particle-Matter Hierarchy Science B II	〃	1	
	Special Topics of Bridging Particle-Matter Hierarchy Science B III	〃	1	
	Special Topics of Bridging Particle-Matter Hierarchy Science B IV	〃	1	
	Special Topics of Bridging Particle-Matter Hierarchy Science B V	〃	1	
	Special Topics of Bridging Particle-Matter Hierarchy Science B VI	〃	1	
	Special Topics of Multiscale Natural Science I	〃	2	※
	Special Topics of Multiscale Natural Science II	〃	2	※
	Special Topics of Multiscale Natural Science III	〃	2	※
	Special Topics of Multiscale Natural Science IV	〃	2	※
	Special Topics of Multiscale Natural Science V	〃	2	※
	Special Training in Internship	Training	2	
	Special Training in Short-Term Internship	〃	1	
	Special Training in Long-Term Internship	〃	3	
	Special Overseas Internship	〃	2	
	Research Seminar in Algebra	Seminar	6	It is compulsory to select one course from the left
	Research Seminar in Geometry	〃	6	
	Research Seminar in Analysis	〃	6	
	Research Seminar on Manifolds	〃	6	
	Research Seminar in Applied Mathematics	〃	6	
	Thesis Research in Algebra	Training	10	It is compulsory to select one course from the left
	Thesis Research in Geometry	〃	10	
	Thesis Research in Analysis	〃	10	
	Thesis Research on Manifolds	〃	10	
	Thesis Research in Applied Mathematics	〃	10	
Related Courses	*The following can be certified as related courses - Graduate School Common Subjects - Courses approved by the Graduate School Committee			

(2) Physics

Category	Course	Type	Credit	Note
Specialized courses	Advanced Lecture on Quantum fundamental Physics	Lecture	2	
	Advanced Lecture on Particle and Nuclear Physics	〃	2	
	Advanced Lecture on Physics of Electron	〃	2	
	Advanced Lecture on Quantum Condensed Matter Physics	〃	2	
	Advanced Lecture on Condensed Matter Theory	〃	2	
	Advanced Lecture on Physics of Strongly Correlated Material	〃	2	
	Advanced Lecture on Interdisciplinary Physics	〃	2	
	Advanced Lecture on Experimental Nuclear Science	〃	2	
	Advanced Lecture on High Energy Physics	〃	2	
	Advanced Lecture on Physics of Crystals	〃	2	
	Advanced Lecture on Physics of Metals	〃	2	
	Advanced Lecture on Spectroscopy in Physics	〃	2	※
	Advanced Lecture on Nuclear Radiation Physics	〃	2	
	Advanced Lecture on Particle Physics I	〃	1	
	Advanced Lecture on Particle Physics II	〃	1	
	Advanced Lecture on Particle Physics III	〃	1	
	Advanced Lecture on Particle Physics IV	〃	1	
	Advanced Lecture on Particle Physics V	〃	1	
	Advanced Lecture on Particle Physics VI	〃	1	
	Advanced Lecture on Particle Physics VII	〃	1	
	Advanced Lecture on Particle Physics VIII	〃	1	
	Advanced Lecture on Particle Physics IX	〃	1	
	Advanced Lecture on Particle Physics X	〃	1	
	Advanced Lecture on Nuclear Physics I	〃	1	
	Advanced Lecture on Nuclear Physics II	〃	1	
	Advanced Lecture on Nuclear Physics III	〃	1	
	Advanced Lecture on Nuclear Physics IV	〃	1	
	Advanced Lecture on Nuclear Physics V	〃	1	
	Advanced Lecture on Nuclear Physics VI	〃	1	
	Advanced Lecture on Nuclear Physics VII	〃	1	
	Advanced Lecture on Nuclear Physics VIII	〃	1	
	Advanced Lecture on Nuclear Physics IX	〃	1	
	Advanced Lecture on Nuclear Physics X	〃	1	
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science A I	〃	2	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science A II	〃	2	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science A III	〃	2	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science A IV	〃	2	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science A V	〃	2	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science A VI	〃	2	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science B I	〃	1	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science B II	〃	1	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science B III	〃	1	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science B IV	〃	1	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science B V	〃	1	※
	Advanced Lecture on Bridging Particle-Matter Hierarchy Science B VI	〃	1	※

3. 後期課程の授業科目表 Table of courses for the doctoral program

	Advanced Multiscale Natural Science I	Lecture	2	※
	Advanced Multiscale Natural Science II	〃	2	※
	Advanced Multiscale Natural Science III	〃	2	※
	Advanced Multiscale Natural Science IV	〃	2	※
	Advanced Multiscale Natural Science V	〃	2	※
	Basic Spintronics and Material Science I	〃	2	※
	Basic Spintronics and Material Science II	〃	2	※
	Basic Spintronics and Material Science III	〃	1	※
	Basic Spintronics and Material Science IV	〃	1	※
	Applied Spintronics I	Seminar	1	※
	Applied Spintronics II	〃	1	※
	Practical Spintronics I	〃	1	※
	Practical Spintronics II	〃	1	※
	Spintronics Overseas Training	Training	4	※
	Global Communication	Lecture	2	
	Advanced Lecture on Physics for the Universe I	〃	2	
	Advanced Lecture on Physics for the Universe II	〃	2	*Up to two credits in total for "training" in specialized courses and related courses may be included in the completion requirements.
	Advanced Experiments on Physics for the Universe	Training	2	
	Advanced International Training on Physics for the Universe	〃	2	
	Special Training in Internship	〃	2	
	Special Overseas Internship	〃	2	
	Advanced Seminar I	Seminar	2	Compulsory
	Advanced Seminar II	〃	2	Compulsory
	Advanced Seminar III	〃	2	Compulsory
	Advanced Research I	Training	3	Compulsory
	Advanced Research II	〃	3	Compulsory
	Advanced Research III	〃	4	Compulsory
Related Courses	Materials Science International II *The following can be certified as related courses - Specialized Courses of Astronomy major - Graduate School Common Subjects - Courses approved by the Graduate School Committee	Lecture	1	

(3) Astronomy

Category	Course	Type	Credit	Note
Specialized Courses	Special Lecture on Physics of Stars I	Lecture	2	
	Special Lecture on Physics of Stars II	〃	2	
	Special Lecture on Interstellar Physics I	〃	2	
	Special Lecture on Interstellar Physics II	〃	2	
	Special Lecture on Physics of Galaxies I	〃	2	
	Special Lecture on Physics of Galaxies II	〃	2	
	Special Lecture on Physics of Galaxies III	〃	2	
	Special Lecture on Theoretical Astrophysics I	〃	2	
	Special Lecture on Theoretical Astrophysics II	〃	2	
	Special Lecture on Theoretical Astrophysics III	〃	2	
	Special Lecture on Radio Astronomy I	〃	2	
	Special Lecture on Radio Astronomy II	〃	2	
	Special Lecture on Relativistic Astrophysics I	〃	2	
	Special Lecture on Relativistic Astrophysics II	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science A I	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science A II	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science A III	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science A IV	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science A V	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science A VI	〃	2	
	Special Lecture on Bridging Particle-Matter Hierarchy Science B I	〃	1	
	Special Lecture on Bridging Particle-Matter Hierarchy Science B II	〃	1	
	Special Lecture on Bridging Particle-Matter Hierarchy Science B III	〃	1	
	Special Lecture on Bridging Particle-Matter Hierarchy Science B IV	〃	1	
	Special Lecture on Bridging Particle-Matter Hierarchy Science B V	〃	1	
	Special Lecture on Bridging Particle-Matter Hierarchy Science B VI	〃	1	
	Special Lecture on Multiscale Natural Science I	〃	2	※
	Special Lecture on Multiscale Natural Science II	〃	2	※
	Special Lecture on Multiscale Natural Science III	〃	2	※
	Special Lecture on Multiscale Natural Science IV	〃	2	※
	Special Lecture on Multiscale Natural Science V	〃	2	※
	Special Lecture on Natural Disaster Science I	〃	2	
	Special Lecture on Natural Disaster Science II	〃	2	
	Advanced Lecture on Physics for the Universe I	〃	2	
	Advanced Lecture on Physics for the Universe II	〃	2	
	Advanced Experiments on Physics for the Universe	Training	2	
	Advanced International Training on Physics for the Universe	〃	2	
	Special Training in Internship	〃	2	
	Special Overseas Internship	〃	2	It is compulsory
	Advanced Seminar of Astronomy	Seminar	6	to select
	Advanced Seminar of Theoretical Astrophysics	〃	6	one course
	Advanced Seminar of Radio Astronomy	〃	6	from the left
	Advanced Seminar of Observational Astronomy	〃	6	
	Advanced Researches of Astronomy	Training	10	It is compulsory
	Advanced Researches of Theoretical Astrophysics	〃	10	to select
	Advanced Researches of Radio Astronomy	〃	10	one course
	Advanced Researches of Observational Astronomy	〃	10	from the left
Related Courses	*The following can be certified as related courses: -Specialized Courses of Physics, Geophysics, and Earth Science major - Graduate School Common Subjects - Courses approved by the Graduate School Committee			

(4) Geophysics

Category	Course	Type	Credit	Note
Specialized Courses	Topics in Solid Earth Physics I	Lecture	2	
	Topics in Solid Earth Physics II	〃	2	※
	Topics in Solar Planetary Physics I	〃	2	
	Topics in Solar Planetary Physics II	〃	2	
	Topics in Fluid Geophysics I	〃	2	
	Topics in Fluid Geophysics II	〃	2	
	Topics in Climate System Physics I	〃	2	
	Topics in Climate System Physics II	〃	2	
	Topics in Atmospheric and Oceanic Variability	〃	2	
	Special Lecture on Advanced Earth Science I	〃	2	
	Special Lecture on Advanced Earth Science II	〃	2	
	Special Advanced Lecture on Earth and Planetary Dynamics	〃	1	
	Earth and Planetary Dynamics Special Advanced Training I	Seminar	1	
	Earth and Planetary Dynamics Special Advanced Training II	〃	1	
	Earth and Planetary Dynamics Special Advanced Training III	〃	1	
	Special Advanced Lecture on Earth and Planetary Physics I	Lecture	1	
	Special Advanced Lecture on Earth and Planetary Physics II	〃	1	
	Special Advanced Lecture on Earth and Planetary Physics III	〃	1	
	Special Advanced Lecture on Earth and Planetary Physics IV	〃	1	
	Special Advanced Lecture on Earth and Planetary Physics V	〃	1	
	Special Advanced Lecture on Earth and Planetary Physics VI	〃	1	
	Earth and Planetary Physics Special Advanced Training I	Seminar	1	
	Earth and Planetary Physics Special Advanced Training II	〃	1	
	Earth and Planetary Physics Special Advanced Training III	〃	1	
	Earth and Planetary Physics Special Advanced Training IV	〃	1	
	Earth and Planetary Physics Special Advanced Training V	〃	1	
	Earth and Planetary Physics Special Advanced Training VI	〃	1	
	Special Training in Internship I	Training	1	
	Special Training in Internship II	〃	1	
	Special Overseas Internship I	〃	1	
	Special Overseas Internship II	〃	1	
	Special Advanced Lecture on Environmental and Earth Science I	Lecture	2	
	Special Advanced Lecture on Environmental and Earth Science II	〃	2	
	Special Advanced Lecture on Environmental and Earth Science III	〃	1	
	Practical Course on Environmental and Earth Science I	Seminar	2	
	Practical Course on Environmental and Earth Science II	〃	2	
	Practical Course on Environmental and Earth Science III	〃	2	
	Advanced Experiment on Environmental and Earth Science I	Experiment	2	

3. 後期課程の授業科目表 Table of courses for the doctoral program

	Advanced Experiment on Environmental and Earth Science II	〃	2	
	Special Seminar in Geophysics I	Seminar	1	Compulsory
	Special Seminar in Geophysics II	〃	1	Compulsory
	Special Seminar in Geophysics III	〃	1	Compulsory
	Special Seminar in Geophysics IV	〃	1	Compulsory
	Special Seminar in Geophysics V	〃	1	Compulsory
	Special Seminar in Geophysics VI	〃	1	Compulsory
	Research for Doctor's Thesis in Geophysics I	Training	1	Compulsory
	Research for Doctor's Thesis in Geophysics II	〃	1	Compulsory
	Research for Doctor's Thesis in Geophysics III	〃	2	Compulsory
	Research for Doctor's Thesis in Geophysics IV	〃	2	Compulsory
	Research for Doctor's Thesis in Geophysics V	〃	2	Compulsory
	Research for Doctor's Thesis in Geophysics VI	〃	2	Compulsory
Related Courses	*The following can be certified as related courses - Specialized Courses of Astronomy and Earth Science major -Lectures offered in Interdisciplinary Field and Basic Lectures offered in Interdisciplinary Field from the Graduate School of Environmental Studies - Courses offered for WISE Program for Sustainability in the Dynamic Earth (SyDE) - Graduate School Common Subjects -Courses approved by the Graduate School Committee			

(5) Chemistry

Category	Course	Type	Credit	Note
Specialized Courses	Special Lecture in Chemistry I	Lecture	2	
	Special Lecture in Chemistry II	〃	2	
	Special Lecture in Chemistry III	〃	2	
	Special Lecture in Chemistry IV	〃	2	
	Special Lecture in Chemistry V	〃	2	
	Special Lecture in Chemistry VI	〃	2	
	Advanced Chemistry and Biochemistry I A	〃	2	※
	Advanced Chemistry and Biochemistry I B	〃	2	※
	Advanced Chemistry and Biochemistry II A	〃	2	※
	Advanced Chemistry and Biochemistry II B	〃	2	※
	Advanced Chemistry and Biochemistry III A	〃	2	※
	Advanced Chemistry and Biochemistry III B	〃	2	※
	Advanced Chemistry and Biochemistry III C	〃	2	※
	Advanced Chemistry and Biochemistry IV A	〃	2	※
	Advanced Chemistry and Biochemistry IV B	〃	2	※
	Advanced Chemistry International II	〃	1	
	Advanced Chemistry Special Training II	Training	4	
	Special Training in Internship	〃	2	
	Special Overseas Internship	〃	2	
	Special Seminar in Chemistry I	Seminar	1	Compulsory
	Special Seminar in Chemistry II	〃	1	Compulsory
	Special Seminar in Chemistry III	〃	1	Compulsory
	Special Seminar in Chemistry IV	〃	1	Compulsory
	Special Seminar in Chemistry V	〃	1	Compulsory
	Special Seminar in Chemistry VI	〃	1	Compulsory
	Special Research in Chemistry I	Training	1	Compulsory
	Special Research in Chemistry II	〃	1	Compulsory
	Special Research in Chemistry III	〃	2	Compulsory
	Special Research in Chemistry IV	〃	2	Compulsory
	Special Research in Chemistry V	〃	2	Compulsory
	Special Research in Chemistry VI	〃	2	Compulsory
Related Courses	*The following can be certified as related courses: - Interdisciplinary Basic Subjects provided for Department of Applied Chemistry, Chemical Engineering, and Biomolecular Engineering from the Graduate School of Engineering			
	Advanced Course in Atoms and Molecules Control Engineering	Lecture	2	
	Advanced Process Analysis and Modeling	Lecture	2	
	Advanced Biomolecular Engineering	Lecture	2	
	Practical English Presentation II	Seminar	2	
	- Graduate School Common Subjects - Courses approved by the Graduate School Committee			
Free Auditing Courses	Advanced Chemistry Practice II	Training	1	

(6) Earth Science

Category	Course	Type	Credit	Note
Specialized Courses	Special Advanced Lecture on Tectonics	Lecture	2	
	Special Advanced Lecture on Environmental Geology	〃	2	
	Special Advanced Lecture on Paleontology	〃	2	
	Special Advanced Lecture on Environmental Dynamics	〃	2	
	Special Advanced Lecture on Physical Environmental Geography I	〃	2	
	Special Advanced Lecture on Physical Environmental Geography II	〃	2	
	Special Advanced Lecture on Human Environmental Geography I	〃	2	
	Special Advanced Lecture on Human Environmental Geography II	〃	2	
	Special Advanced Lecture on Environmental Geography I	〃	1	
	Special Advanced Lecture on Environmental Geography II	〃	1	
	Special Advanced Lecture on Environmental Geography III	〃	1	
	Special Advanced Lecture on Environmental Geography IV	〃	1	
	Special Advanced Lecture on Environmental Geochemistry	〃	2	
	Special Advanced Lecture on Geohistory	〃	2	
	Advanced Mineralogy	〃	2	
	Advanced Petrology	〃	2	
	Special Topics in Petrotectonics	〃	2	
	Advanced Resource and Environmental Geochemistry	〃	2	
	Special Advanced Lecture on Early Solar System Evolution	〃	2	
	Special Advanced Lecture on Quantum-beam Earth Science	〃	2	
	Special Advanced Lecture on Volcanology and Geofluid Science	〃	2	
	Special Topics in global crystal sciences	〃	2	
	Advanced Comparative Planetology	〃	2	
	Special Advanced Lecture on Ultrahigh-pressure Mineral Physics	〃	2	
	Special Advanced Lecture on Earth and Planetary Materials I	〃	1	
	Special Advanced Lecture on Earth and Planetary Materials II	〃	1	
	Special Advanced Lecture on Earth and Planetary Materials III	〃	1	
	Advanced Earth and Planetary Science I	〃	1	
	Advanced Earth and Planetary Science II	〃	1	
	Advanced Earth and Planetary Science III	〃	1	
	Advanced Earth and Planetary Science IV	〃	1	
	Special Advanced Lecture on Earth and Planetary Dynamics	〃	1	
	Earth and Planetary Dynamics Special Advanced Training I	Seminar	1	
	Earth and Planetary Dynamics Special Advanced Training II	〃	1	
	Earth and Planetary Dynamics Special Advanced Training III	〃	1	
	Advanced Earth Science I	Lecture	2	※
	Advanced Earth Science II	〃	2	※
	Advanced Earth Science III	〃	2	※
	Advanced Earth Science IV	〃	2	※
	Advanced Earth Science V	〃	2	※
	Special Training in Internship	Training	2	
	Special Overseas Internship	〃	2	

3. 後期課程の授業科目表 Table of courses for the doctoral program

	Special Advanced Lecture on Environmental and Earth Science I	Lecture	2	
	Special Advanced Lecture on Environmental and Earth Science II	〃	2	
	Special Advanced Lecture on Environmental and Earth Science III	〃	1	
	Practical Course on Environmental and Earth Science I	Seminar	2	
	Practical Course on Environmental and Earth Science II	〃	2	
	Practical Course on Environmental and Earth Science III	〃	2	
	Advanced Experiment on Environmental and Earth Science I	Experiment	2	
	Advanced Experiment on Environmental and Earth Science II	〃	2	
	Special Seminar on Earth Science I	Seminar	1	
	Special Seminar on Earth Science II	〃	1	
	Special Seminar on Earth Science III	〃	1	
	Special Seminar on Earth Science IV	〃	1	
	Special Seminar on Earth Science V	〃	1	
	Special Advanced Lecture Earth and Planetary Dynamics	Lecture	2	
	International Special Lecture on Natural Disasters	〃	2	
	Factors to Change of Earth Surface Environment	〃	2	
	Advanced Natural disaster Science Special Training	Seminar	2	
	Industry-Academia Partnership Seminar III	Lecture	1	
	Industry-Academia Partnership Seminar IV	〃	1	
	Special Seminar in Geohistory	Seminar	6	It is compulsory to select one course from the left
	Special Seminar in Environmental Geography	〃	6	
	Special Seminar in Environmental Geochemistry	〃	6	
	Special Seminar on Earth and Planetary Materials	〃	6	
	Special Seminar in Environmental Dynamics	〃	6	
	Special Seminar in Comparative Planetology	〃	6	
	Special Research in Geohistory	Training	10	It is compulsory to select one course from the left
	Special Research in Environmental Geography	〃	10	
	Special Research in Environmental Geochemistry	〃	10	
	Special Research on Earth and Planetary Materials	〃	10	
	Special Research in Environmental Dynamics	〃	10	
	Special Research in Comparative Planetology	〃	10	
Related Courses	*The following can be certified as related courses -Specialized Courses of Geophysics major -Subjects for Specialized Fields and Basic Subjects for Interdisciplinary Fields from the Graduate School of Environmental Studies - Courses offered for WISE Program for Sustainability in the Dynamic Earth (SyDE) - Graduate School Common Subjects -Courses approved by the Graduate School Committee			Up to one credit of "Graduate School Common Subjects" may be included in the completion requirement credits

(7) Common

Category	Course	Type	Credit	Note
Free Auditing Courses	Science and Society Science Communication	Lecture 〃	1 1	Credits obtained do not count as requirements for program completion

4. Courses, Divisions, Members, and Research Topics

Abbreviations 1 (General)

Collab.: Collaboration, Comm.: Commissioned, Conc.: Concurrent, Vis.: Visiting, S.A.: Specially Appointed, GS: Graduate School

Abbreviations 2 (Affiliations)

->Refer to the list on the last page of this chapter

(1) Mathematics

Course	Division and Member	Affiliation	Research topic
(Master's course)	Algebra		
Advanced Topics in Algebra	Prof. Masaki Hanamura	GS of Science	Algebraic Geometry
Advanced Topics in Algebraic Geometry	Prof. Nobuo Tsuzuki	GS of Science	Number theory, Arithmetic Geometry
Advanced Topics in Number Theory	Prof. Yasuo Ohno	GS of Science	Number Theory
Advanced Topics in Arithmetic Geometry	Assoc. Prof. Isamu Iwanari	GS of Science	Algebraic Geometry
Advanced Topics in Algebraic Analysis Advanced	Assoc. Prof. Takuya Yamauchi	GS of Science	Number Theory
Topics on Automorphic Functions	Assoc. Prof. Yoshinori Mishiba	GS of Science	Number Theory
(Doctoral course)			
Special Topics in Algebra			
(Master's course)	Geometry		
Advanced Topics in Geometry	Prof. Takashi Shioya	GS of Science	Differential Geometry and Global Analysis
Advanced Topics in Differential Geometry	Prof. Yuji Terashima	GS of Science	Topology, Mathematical Physics
Advanced Topics in Differential Topology	Prof. Jun Masamune	GS of Science	Global Analysis
Advanced Topics on Dynamical Systems	Prof. Shinichi Matsumura	GS of Science	Complex Geometry
(Doctoral course)	Assoc. Prof. Tsukasa Iwabuchi	GS of Science	Real Analysis, Partial Differential Equations
Special Topics in Geometry	Assoc. Prof. Masato Mimura	GS of Science	Geometric Group Theory
	Assoc. Prof. Takumi Yokota	GS of Science	Riemannian Geometry
(Master's course)	Analysis		
Advanced Topics in Analysis	Prof. Hiroyuki Takamura	GS of Science	Nonlinear Evolution Equations
Advanced Topics in Complex Analysis	Prof. Satoshi Tanaka	GS of Science	Nonlinear Analysis
Advanced Topics in Real Analysis	Prof. Fumihiko Nakano	GS of Science	Mathematical Physics, Probability Theory
Advanced Topics in Harmonic Analysis	Prof. Yuu Hariya	GS of Science	Stochastic Processes
Advanced Topics on Operator Algebras	Assoc. Prof. Yoji Akama	GS of Science	Computer Mathematics
(Doctoral course)	Assoc.Prof. Kentaro Fujie	GS of Science	Partial Differential Equations
Special Topics in Analysis	Assoc.Prof. Yoshihiro Abe	GS of Science	Stochastic Processes
(Master's course)	Manifold theory		
Advanced Topics on Complex Manifold Theory	Prof. Tatsuya Tate	GS of Science	Global Analysis
Advanced Topics in Global Analysis	Prof. Kiyoshi Takeuchi	GS of Science	Algebraic analysis, Singularity theory
Advanced Topics in Representation Theory	Prof. Kazuhiko Yamaki	GS of Science	Algebraic Geometry
Advanced Topics in Mathematical Physics	Assoc. Prof. Shinya Okabe	GS of Science	Nonlinear Analysis, Variational Problem
(Doctoral course)	Assoc. Prof. Koji Hasegawa	GS of Science	Representation Theory and Mathematical Physics
Special Topics on Manifold Theory			
(Master's course)	Applied Mathematics		
Advanced Topics in Applied Mathematics	Prof. Goro Akagi	GS of Science	Functional Analysis, Evolution Equations
Advanced Topics on Ordinary Differential Equations	Prof. Keita Yokoyama	GS of Science	Logic and Foundations of Mathematics
Advanced Topics on Partial Differential Equations	Assoc. Prof. Takeshi Yamazaki	GS of Science	Logic and Foundations of Mathematics
Advanced Topics in Nonlinear Analysis	Assoc. Prof. Norisuke Ioku	GS of Science	Partial Differential Equations, Functional Inequalities
Advanced Topics in Foundations of Mathematics			
(Doctoral course)			
Special Topics in Applied Mathematics			

(Master's course)	Integrative Applied Analysis and Computation		
Advanced Topics of Bridging Particle-Matter Hierarchy Science	Prof. Hiroshi Suito	AIMR	Applied Mathematical Analysis
(Doctoral course)	Prof. Motoko Kotani	AIMR	Differential Geometry, Global Analysis
Special Topics of Bridging Particle-Matter Hierarchy Science	Prof. Hayato Chiba	AIMR	Dynamical Systems Theory
	Prof. Hiroyasu Ando	AIMR	Mathematical Engineering

(2) Physics

Course	Field and Instructors	Affiliation	Research topic
(Master's course)	Theoretical Nuclear and Particle Physics		1. Models of elementary particles
Lecture on Basic Quantum Field Theory	Prof. Masahiro Yamaguchi	GS of Science	including supersymmetry, Grand
Lecture on Advanced Quantum Field Theory	Prof. Fuminobu Takahashi	GS of Science	Unified Theory, and extra spacetime
Lecture on Elementary Particle Theory	Prof. Emiko Hiyama	GS of Science	dimensions
Lecture on Nuclear Theory	Prof. Yukinari Sumino	GS of Science	2. Superstring theory, Quantum
Lecture on Mathematical Quantum Physics	Assoc. Prof. Hiroshi Ishikawa	GS of Science	gravity, non-commutative geometry,
Lecture on Cosmology and Fundamental Physics	Assoc. Prof. Shoichi Sasaki	GS of Science	mathematical physics
(Doctoral course)	Assoc. Prof. Kazuya Yonekura	GS of Science	3. High energy phenomenology,
Advanced Lecture on Quantum Fundamental Physics	Assoc. Prof. Kazunori Nakayama	GS of Science	collider physics
	Assoc. Prof. Toru Kojo	GS of Science	4. Particle cosmology
	Lecturer Daisuke Yoshida	GS of Science	5. Field theory and its application
			6. Theoretical research on the structure and reactions of hadronic many-body systems
			7. Theoretical research on hypernuclei, unstable nuclei and multi-quark systems
(Master's course)	Experimental Nuclear and Particle Physics		1. Experimental research on nuclei
Lecture on Basic Elementary Particle Physics	Prof. Hirokazu Tamura	GS of Science	and hadrons
Lecture on Basic Nuclear Physics	Prof. (Comm.) Satoshi N Nakamura	GS of Science	2. Experimental research on
Lecture on High Energy Physics	Prof. Atsuko Ichikawa	GS of Science	hypernuclear and strange particle
Lecture on Nuclear Physics	Prof. (Comm.) Kimiko Sekiguchi	GS of Science	physics.
(Doctoral course)	Prof. Koji Miwa	GS of Science	3. Experimental research on 3-body
Advanced Lecture on Particle and Nuclear Physics	Assoc. Prof. Naohito Iwasa	GS of Science	nuclear force
	Assoc. Prof. Tomoyuki Sanuki	GS of Science	4. Experimental research on
	Assoc. Prof. Yudai Ichikawa	GS of Science	intermediate energy nuclear physics
	Assoc. Prof. Masashi Kaneta	GS of Science	5. Experimental research on
	Assoc. Prof. Kenjiro Miki	GS of Science	neutrino physics
	Assoc. Prof. Mifuyu Ukai	GS of Science	
(Master's course)	Condensed Matter Physics		1. Angle-resolved photoemission
Lecture on Basic Material Science	Prof. Kenya Ohgushi	GS of Science	spectroscopy study of high-
Lecture on Physics of Electrons	Prof. (Conc.) Takafumi Sato	GS of Science	temperature superconductors,
Lecture on Condensed Matter Physics	Prof. Yusuke Wakabayashi	GS of Science	graphene, and topological insulators
Lecture on Solid State Physics	Prof. Noriaki Kimura	GS of Science	2. Research on quantum
Lecture on Advanced Strongly Correlated Systems in Solid State	Assoc. Prof. Hiroshi Matsui	GS of Science	phenomena of low-dimensional
(Doctoral course)	Assoc. Prof. Hidekazu Shimotani	GS of Science	conducting systems with wide range
Advanced Lecture on Physics of Electron	Assoc. Prof. Katsuaki Sugawara	GS of Science	of electromagnetic waves
Advanced Lecture on Physics of Strongly Correlated Material	Assoc. Prof. Yoshinori Imai	GS of Science	3. Research on static and dynamical
	Assoc. Prof. Makina Saito	GS of Science	properties of condensed matters by
	Assoc. Prof. Yuta Mizukami	GS of Science	means of x-ray diffraction technique
			4. Research on electronic properties of strongly correlated electron systems under extreme conditions
			5. Exploratory synthesis and

			characterization of strongly correlated materials
(Master's course) Lecture on Basic Solid State Spectroscopy Lecture on Solid State Spectroscopy I, II Lecture on Chemical Physics (Doctoral course) Advanced Lecture on Quantum Condensed Matter Physics	Quantum Condensed Matter Physics Prof. Shinichiro Iwai Prof. Go Yusa Prof. Fumihiro Kaneda Prof. Masayuki Yoshizawa Assoc. Prof. Masakazu Matsubara Assoc. Prof. Yohei Kawakami	 GS of Science GS of Science GS of Science GS of Science GS of Science GS of Science	1. Femto-Attosecond dynamics of correlated electrons using ultrashort pulse laser 2. Experimental research on quantum dynamics in low-dimensional quantum many-body systems 3. Quantum optics and foundations of quantum physics with photonic quantum entanglement 4. Experimental research on solid state photo-physics
(Master's course) Lecture on Basic Solid State Physics and Statistical Physics Lecture on Theory of Electrons in Solids Lecture on Statistical Physics (Doctoral course) Advanced Lecture on Condensed Matter Theory	Theoretical Condensed Matter and Statistical Physics Prof. Toshihiro Kawakatsu Prof. Naokazu Shibata Prof. Takashi Koretsune Assoc. Prof. Nariya Uchida Assoc. Prof. Joji Nasu	 GS of Science GS of Science GS of Science GS of Science GS of Science	Theoretical researches of structural and physical properties in condensed matters based on the quantum mechanics, statistical mechanics, and numerical physics. 1. Emergent quantum phenomena in strongly correlated electron systems 2. Electronic states of nanostructures and design of new materials 3. Structure and dynamics in soft-matters and active- matters 4. Foundations of statistical mechanics and quantum phase transitions
	Strongly Interacting Many Particle Quantum Systems		
(Master's course) Lecture on Biomaterial Physics Lecture on Soft Matter Physics (Doctoral course) Advanced Lecture on Interdisciplinary Physics Advanced Lecture on Quantum Condensed Matter Physics	Soft Matter and Biophysics Prof. Masayuki Imai Lecturer Yuka Sakuma	 GS of Science GS of Science GS of Science	1. Biophysical experiments, research on the correlation of the structure, properties and function of biological membranes 2. Research on the structure and properties of biological membranes from softmatter physics point of view
(Master's course) Lecture on Advanced Quark Nuclear Physics Lecture on Electron Beam Nuclear Physics Lecture on Advanced Physics of Beams (Doctoral course) Advanced Lecture on Experimental Nuclear Science	Nuclear Science Prof. Toshimi Suda Prof. Hiroaki Ohnishi Assoc. Prof. Shigeru Kashiwagi Assoc. Prof. Norihito Muramatsu Assoc. Prof. Fujio Hinode Assoc. Prof. Hidetoshi Kikunaga	 RARIS RARIS RARIS RARIS RARIS RARIS	1. Experimental research on quark nuclear physics by GeV photon beams 2. Beam dynamics in classical many-body systems and electromagnetic radiation from charged particles 3. Experimental research on proton radius and short-lived unstable nuclei by electron scattering 4. Experimental research on chemical effect in nuclear
Master's course) Lecture on Basic Elementary Particle Physics	High Energy Physics Prof. Kunio Inoue	 RCNS	1. Experimental research of high energy physics using a large

Lecture on Cosmology and Fundamental Physics Lecture on Non-Accelerator Physics (Doctoral course) Advanced Lecture on High Energy Physics Advanced Lecture on Particle Physics	Prof. Yasuhiro Kishimoto Assoc. Prof. Masayuki Koga Assoc. Prof. Tadao Mitsui Assoc. Prof. Itaru Shimizu Assoc. Prof. Koji Ishidoshiro	RCNS RCNS RCNS RCNS RCNS	elementary particle detector, neutrino physics, neutrino astronomy 2. Experimental research of elementary particles in an extremely low radiation environment, cosmic matter, antimatter asymmetry, and cosmic dark matter
(Master's course) Lecture on Physics of Crystals Lecture on Surface Physics (Doctoral course) Advanced Lecture on Physics of Crystals	Crystal Physics Prof. Kozo Fujiwara Prof. Yoshinori Onose Assoc. Prof. Haruhiko Morito Assoc. Prof. Yoichi Nii	 IMR IMR IMR IMR	1.Research on the nuclear structure, dynamic state, reactions and electron structure of the lattice defect of semiconductive crystallization 2. Exploration of new quantum phenomena and new material functionalities induced by topology and/or symmetry breaking in magnetic materials 3.Research on the quantum electric properties, structural properties, optical property physics of thin-film crystals, and nanostructure of crystals
(Master's course) Lecture on Physics of Metals Lecture on Magnetism Lecture on Electron Theory of Metals (Doctoral course) Advanced Lecture on Physics of Metals	Metal Physics Prof. Hiroyuki Noriji Prof. Takahiko Sasaki Prof. Masaki Fujita Prof. Yusuke Nomura Assoc. Prof. Tsutomu Nojima Assoc. Prof. Satoshi Iguchi Assoc. Prof. Yusuke Nambu Assoc. Prof. Motoi Kimata	 IMR IMR IMR IMR IMR IMR IMR IMR	1. Research on metallic, semiconducting, organic, and other compounds using neutron, X-ray, light, magnetic and transport measurements 2. Research on strongly correlated electron and topological electron systems 3. Research on superconductivity and related electronic states 4. Research on spintronics and related phenomena 5. Theoretical Investigation of Quantum Many-Body Physics
(Master's course) Lecture on Spectroscopy in Physics Lecture on Diffraction and Spectroscopy (Doctoral course) Advanced Lecture on Spectroscopy in Physics	Solid State Spectroscopy Prof. Masami Terauchi Prof. Taku J Sato Prof. Tadashi Abukawa Assoc. Prof. Yohei Sato Assoc. Prof. Kazuhiro Nawa	 IMRAM IMRAM IMRAM IMRAM IMRAM	1. Experimental research on nanoscale matter by electron spectroscopy, diffraction, and soft X-ray emission 2. Experimental research on spin dynamics in condensed matter using neutron scattering 3. Experimental research on the surface structures and structure dynamics by electron diffraction and electron spectroscopy
(Master's course) Lecture on Nuclear Radiation Physics (Doctoral course) Advanced Lecture on Nuclear Radiation Physics	Nuclear Radiation Physics Prof. Masatoshi Itoh Prof. Atuski Terakawa Prof. (Vis.) Yasuhiro Sakemi	 RARIS RARIS CNS	1. Study of cluster structures and search for a new excitation mode in nuclei 2. Research and development of the

			AVF cyclotron accelerator for a high intensity beam 3. Research of fundamental symmetries and interactions with laser-cooled radioactive atoms and related developments of radiation detection and measurement
(Master's course) Lecture on Accelerator Physics	Accelerator Science (Collab.Comm.) Prof. (Vis.) Michikazu Kinsho	 JAEA	Development of proton accelerators
(Master's course) Lecture on Advanced Condensed Matter Physics	Strongly Correlated Electron Physics (Collab. Comm.) Prof. (Vis.) Shinichi Fujimori Prof. (Comm.) Satoshi Kera Prof. (Vis.) Yuka Ikemoto	 JAEA IMS JASRI	1. Research on electronic states of strongly correlated electron systems using photoemission spectroscopy 2. Experimental study of band structure of organic semiconductors 3. Condensed matter physics study using infrared synchrotron
(Master's course) Lecture on Advanced Quantum Sensing and Measurements	Quantum Measurement and Functional Sensing (Collab.Comm.) Prof. (Vis.) Chiko Otani	 RIKEN	1. Cell Morphology and Pathology 2. Quantum measurement using Terahertz

(3) Astronomy

Course	Field and instructors	Affiliation	Research topic
(Master's course)	Astronomy		
Advanced Course on Physics of Stars	Prof. Masashi Chiba	GS of Science	Galactic Physics
Advanced Course on Interstellar Physics	Prof. Hidekazu Tanaka	GS of Science	Planet Formation Theory, Planetary Astronomy
Advanced Course on Physics of Galaxies	Prof. Masayuki Akiyama	GS of Science	Galactic physics, Astronomical instrumentation
Advanced Course on Radio Astronomy	Prof. Tadayuki Kodama	GS of Science	Galaxy evolution, Astronomy of galaxies and clusters
Advanced Course on Theoretical Astrophysics	Prof. Masaomi Tanaka	GS of Science	Time-domain astronomy
Advanced Course on Relativistic Astrophysics	Assoc. Prof. Makoto Hattori	GS of Science	mm-wavelength astronomy
Advanced Course on Observational Astronomy	Assoc. Prof. Takashi Murayama	GS of Science	Observational studies of active galactic nuclei
	Assoc. Prof. Hirofumi Noda	GS of Science	X-ray astronomy, development of instruments onboard satellites
(Doctoral course)	Theoretical Astrophysics		
Special Lecture on Physics of Stars	Prof. Kazuyuki Omukai	GS of Science	Astrophysics, Astrophysical Cosmology
Special Lecture on Interstellar Physics	Prof. (Conc.) Kenji Toma	FRIS	Computational Astrophysics, Star and planet Formation
Special Lecture on Physics of Galaxies	Assoc. Prof. Kengo Tomida	GS of Science	Astrophysics, Multi-messenger astronomy
Special Lecture on Theoretical Astrophysics	Assoc. Prof. Kazumi Kashiyama	GS of Science	High-energy Astrophysics
Special Lecture on Radio Astronomy			
Special Lecture on Relativistic Astrophysics			

(4) Geophysics

Course	Field and instructors	Affiliation	Research topic
(Master's course)	Solid Earth Physics		We aim to focus on the heterogeneity and complexity of the solid Earth and to clarify the rules governing the various phenomena of the solid Earth such as fault motions, seismic wave propagation, and volcanic eruptions. We are also carrying out a broad range of research on the solid Earth and related fields.
Advanced Seismology	※Seismology & Volcanology		
Advanced Physics of Earthquake Source	Prof. Takeshi Nishimura	GS of Science	
Advanced Crust Physics	Assoc. Prof. Hisashi Nakahara	GS of Science	
Advanced Lecture on Seismological and Volcanological Measure	Prof. (Vis.) Shuichi Kodaira	JAMSTEC	
Advanced Physical Volcanology	Prof. (Comm.) Hiroyuki Fujiwara	NIED	
Advanced Lecture on Solid Earth Physics	Assoc. Prof. (Comm.) Taku Ozawa	NIED	
(Doctoral course)			
Topics in Solid Earth Physics			

	Crustal Physics ※Physics of Subduction Zones Prof. Dapeng Zhao Prof. Ryota Hino Prof. Tomomi Okada Prof. (Conc.) Motoyuki Kido Assoc. Prof. Yasuo Yabe Assoc. Prof. Mare Yamamoto Assoc. Prof. Yusaku Ota Assoc. Prof. Naoki Uchida Assoc. Prof. (Conc.) Yo Fukushima	 GS of Science GS of Science GS of Science IRIDeS GS of Science GS of Science GS of Science GS of Science IRIDeS	We study earthquakes and volcanic eruptions which are associated with plate subduction processes and whole-Earth dynamics. We conduct research and education using data recorded by the observational facilities for earthquakes and volcanoes in the Tohoku district. We also develop and use ocean bottom equipment. We study structure of the crust, mantle, and core, mechanism of earthquakes, magmatic processes, origin of volcanism, as well as the approach for prediction of earthquakes and volcanic eruptions.
(Master's course) Advanced Meteorology Advanced Atmospheric Physics Advanced Atmospheric Dynamics Advanced Physical Oceanography Advanced Air-Sea Interaction Advanced Atmospheric Radiation Advanced Physical Climatology Advanced Satellite Oceanography Advanced Ocean Environmental Science Advanced Physical Oceanology (Doctoral course) Topics in Fluid Geophysics Topics in Climate System Physics	Atmospheric Science ※Meteorology Prof. Takeshi Yamazaki ※Atmospheric Dynamics Assoc. Prof. Imei Shiya Assoc. Prof. Junshi Ito	 GS of Science GS of Science GS of Science	In the meteorology branch, we conduct research and education on the interaction between the atmosphere and land surface, water cycle, local meteorology, vegetation, and glaciology. In the atmospheric dynamics branch, we conduct research of meteorological phenomena from turbulence to general atmospheric circulation by numerical simulation.
	Physical Oceanography ※Physical Oceanography Prof. Toshio Suga Assoc. Prof. Shoichi Kizu Assoc. Prof. Shusaku Sugimoto	 GS of Science GS of Science GS of Science	Research and lectures are conducted on general physical oceanography in general; the role of ocean in global-scale climate variability which is deeply related to the global environment; physical processes of the large-scale atmosphere-ocean interaction; large-scale ocean variability associated with atmosphere.
	Atmospheric and Oceanic Studies ※Atmospheric Trace Gas Prof. Shinji Morimoto Prof. (Comm.) Prabir K. Patra ※Radiation & Climate Physics Prof. Tadahiro Hayasaka Assoc. Prof. Hironobu Iwabuchi ※Satellite Oceanography Prof. Sayaka Yasunaka Assoc. Prof. Futoki Sakaida	 GS of Science JAMSTEC GS of Science GS of Science GS of Science GS of Science	Research and lectures are conducted in order to understand the actual situation and the change of the climate and Earth's environment in terms of the dynamics, physics, and biogeochemistry of the atmosphere-ocean system; the changing composition of the atmosphere (e.g. green house gases, clouds, aerosols), the feedback to the climate change, the variability of the atmosphere and ocean.
(Master's course) Advanced Solar System Physics Advanced Space Plasma Physics	Planetary and Space Physics ※Space and Terrestrial Plasma Physics Prof. Yuto Katoh	 GS of Science	•Space and Terrestrial Plasma Physics We conduct research and lectures in order to understand the evolution of

Advanced Planetary Atmosphere Physics Advanced Ionospheric and Magnetospheric Physics Advanced Upper Atmosphere Physics Advanced Planetary Radio Wave Physics Advanced Observation Techniques in Space Research (Doctoral course) Topics in Solar Planetary Physics	Assoc. Prof. Atsushi Kumamoto Assoc. Prof. Yuka Sato ※Planetary Atmosphere Physics Prof. Naoki Terada Assoc. Prof. Hiromu Nakagawa Assoc. Prof. (Conc.) Isao Murata Planetary Plasma-Atmospheric Physics ※Planetary Radio-Physics Prof. Yasumasa Kasaba Prof. Fuminori Tsuchiya Assoc. Prof. Hiroaki Misawa Assoc. Prof. Takeshi Sakanoi Prof. (Comm.) Yasuhito Sekine	GS of Science GS of Science/ NIT GS of Science GS of Science GS of Environmental Studies GS of Science GS of Science GS of Science GS of Science Tokyo Inst. Tech.	plasma environment and related electromagnetism occurring in space, terrestrial, and planetary plasma by observational, theoretical, and simulation studies. •Planetary Atmosphere Physics Research and lectures are conducted in order to understand terrestrial and planetary atmospheres; their structures, compositions, dynamics, and evolutions, by using observational and numerical studies. Research and lectures are conducted on remote sensing from the Earth using electric waves and light for the observation of plasma and atmospheric phenomenon caused by the planetary magnetosphere and aerosphere; acceleration process of high energy particles, the origins, heating and acceleration process of plasma, and interaction of plasma and atmosphere

(5) Chemistry

Course	Field and instructors	Affiliation	Research Topic
(Master's course) Topics in Inorganic and Analytical Chemistry IA Topics in Inorganic and Analytical Chemistry IB	Inorganic and Analytical Chemistry Prof. Hisako Hashimoto Lecturer Takashi Komuro	 GS of Science GS of Science	1. Research on the synthesis of transition-metal complexes bearing novel bonding and structures 2. Development of highly active metal catalysts and activation of small molecules 3. Synthesis of metal clusters based on ubiquitous elements and investigation of their functions 4. Synthesis of metal clusters and investigation of their functions
Topics in Inorganic and Analytical Chemistry IIA Topics in Inorganic and Analytical Chemistry IIB	Prof. Seiichi Nishizawa Assoc. Prof. Yusuke Sato Assoc. Prof. Shinichi Morita	GS of Science GS of Science GS of Science	Development of analytical methods for extracellular vesicles
Topics in Inorganic and Analytical Chemistry IIIA Topics in Inorganic and Analytical Chemistry IIIB	Prof. Ryota Sakamoto Assoc. Prof. Shinya Takaishi	GS of Science GS of Science	1. Metal-Organic Frameworks 2. Energy storage and conversion based on the coordination chemistry
(Doctoral course) Special Lecture in Chemistry Special Lecture in Chemistry II Special Lecture in Chemistry V	Members from Division of Inorganic and Analytical Chemistry		

Special Lecture in Chemistry VI			
(Master's course) Topics in Organic Chemistry I A Topics in Organic Chemistry I B	Organic Chemistry Prof. Minoru Ueda Assoc. Prof. Yousuke Takaoka	 GS of Science GS of Science	1. Chemical biology of circadian rhythmic plant behavior (nyctinasty) 2. Chemical biology of a steroid hormone inducing hypertension in mammals 3. Development of new strategy for target ID of natural products
Topics in Organic Chemistry II A Topics in Organic Chemistry II B	Prof. Takeaki Iwamoto Assoc. Prof. Shintaro Ishida	GS of Science GS of Science	• Organic main group element chemistry, especially development of novel compounds bearing unusual bonding between heavy main group elements
Topics in Organic Chemistry III A Topics in Organic Chemistry III B	Prof. Yujiro Hayashi Lecturer Naoki Mori	GS of Science GS of Science	1 Total synthesis of natural product: The synthesis of biologically active natural products via original method. 2 The development of new synthetic reactions: especially using organocatalysis and environmentally begin method.
Topics in Organic Chemistry IV A Topics in Organic Chemistry IV B	Prof. Kozo Toyota Assoc. Prof. Shigeru Sasaki	GS of Science	1 Research on construction of large molecular systems and ligands using sulfur-containing heterocyclic compounds as molecular scaffold 2 Research on synthesis, properties, and reactivities of organophosphorus compounds having unique structures 3 Research on synthesis of oligoarenes bearing various substituents
（Doctoral course） Special Lecture in Chemistry	Members from Division of Organic Chemistry		
(Master's course) Topics in Physical Chemistry I A Topics in Physical Chemistry I B	Physical Chemistry Prof. Fuminori Misaizu Assoc. Prof. Naoki Kishimoto	 GS of Science GS of Science	1. Chemical reaction dynamics, physical chemistry of reactions 2. Chemical reaction processes induced by atomic and molecular collisions or photoexcitations 3. Structures and dynamics of atomic and molecular clusters by laser spectroscopy, mass spectrometry, and ion mobility spectrometry 4. Quantum chemical studies of

			reactions 5. Synthesis of endofullerenes and related nanocarbons using plasma engineering and organic synthetic approaches
Topics in Physical Chemistry II A Topics in Physical Chemistry II B	Prof. Asuka Fujii Assoc. Prof. Yukiyoshi Ohtsuki	GS of Science GS of Science	1. Research on structure and dynamics of molecules and molecular clusters by supersonic molecular beam laser spectroscopy 2. Development of new molecular laser spectroscopic techniques using non-linear optical processes 3. Theoretical study on photo-excited molecular dynamics and reaction control 4. Development of molecular dynamics simulation on the basis of machine learning and quantum information techniques
Topics in Physical Chemistry III A Topics in Physical Chemistry III B	Prof. Shen Ye Assoc. Prof. Yutaka Shibata	GS of Science GS of Science	1. Physical chemistry at interface, electrochemistry 2. Reaction mechanism of the electrode reaction in secondary battery, development of novel electrocatalyst 3. Interfacial structure and functionality of biomaterials 4. Physical-chemistry-based photobiology mainly related to photosynthesis
Topics in Physical Chemistry IV A Topics in Physical Chemistry IV B			
Topics in Physical Chemistry V A Topics in Physical Chemistry V B	Prof. Akihiro Morita Assoc. Prof. Hideaki Takahashi	GS of Science GS of Science	1. Theory and simulation of surface Sum Frequency Generation (SFG) spectroscopy 2. Molecular modeling of electronic polarization--effects on molecular dynamics in solutions --- 3. Mass transfer kinetics in heterogeneous atmospheric chemistry 4. Free energy calculations for chemical reactions in condensed phase
(Doctoral course) Special Lecture in Chemistry	Members from Division of Physical Chemistry		
(Master's course) Topics in Interdisciplinary Chemistry I A Topics in Interdisciplinary Chemistry I B	Interdisciplinary Chemistry Prof. Masahiro Terada Prof. (Conc.) Itaru Nakamura Assoc. Prof. (Conc.) Tienan Jin Assoc. Prof. (Conc.) Azusa Kondoh	 GS of Science IEHE GS of Science GS of Science	1. Development of selective asymmetric reactions by organocatalysts 2. Development of organic transformations by enzyme-like

			catalysis 3. Development of new synthetic reactions catalyzed by organometallics 4. Nanomaterial catalysts for molecular transformations 5. New synthetic methodologies for π-extended optoelectronic materials
Topics in interdisciplinary Chemistry II A Topics in interdisciplinary Chemistry II B	Prof. Kazuo Takimiya Assoc. Prof. Kohsuke Kawbata	GS of Science GS of Science	1. Design, synthesis, and characterization of high-performance organic semiconductors 2. Construction of supramolecular assemblies and their properties 3. Research of functional organic semiconductor
Topics in interdisciplinary Chemistry III A Topics in interdisciplinary Chemistry III B	Prof. Tomoteru Fukumura	GS of Science	1. Electronic properties of inorganic solids 2. Magnetism and superconductivity of inorganic solids 3. Exploration of new materials and functionalities
(Doctoral course) Special Lecture in Chemistry	Members from Division of Interdisciplinary Chemistry		
(Master's course) Topics in Advanced Atomic and Molecular Chemistry I A Topics in Advanced Atomic and Molecular Chemistry I B Topics in Advanced Atomic and Molecular Chemistry II A	Advanced Atomic and Molecular Science Prof. Yasushi Kino	GS of Science	1. Science of exotic atoms and molecules and antiparticles 2. Science of radioactive elements
Topics in Advanced Atomic and Molecular Chemistry III A Topics in Advanced Atomic and Molecular Chemistry III B	Prof. (Conc.) Kazumasa Ohashi Assoc. Prof. (Conc.) Ken-ichi Yasumoto	GS of Life Sciences GS of Life Sciences	1. Intracellular signal transduction 2. Biological functions of remodeling of cytoskeletons 3. Molecular mechanisms of hypoxia-induced gene expression
(Doctoral course) Special Lecture in Chemistry	Members from Division of Advanced Atomic and Molecular Science		
(Master's course) Topics in Reaction Mechanism and Dynamics I A Topics in Reaction Mechanism and Dynamics I B	Reaction Mechanism and Dynamics Prof. Tadahiro Komeda Lecturer Tsuyoshi Takaoka	IMRAM IMRAM	1. Development of Chemical Analysis Techniques with Atom Scale Resolution 2. Environmental Catalysis Research Utilizing Atom-Scale Spectroscopy 3. Molecular architectonics combining Two-dimensional

			Electrode and Molecules 4. Basic Research for Quantum Information and Spintronics using Molecule Spin
Topics in Reaction Mechanism and Dynamics II A	Prof. Eriko Nango	IMRAM	1. Chemical reaction and structural dynamics in biomolecules 2. Biomolecule structure analysis by X-ray free electron lasers 3. Dynamic structure-based molecular design
Topics in Reaction Mechanism and Dynamics III A Topics in Reaction Mechanism and Dynamics III B	Prof. Takehiko Wada Assoc. Prof. Yasuyuki Araki	IMRAM IMRAM	1.Creation of intracellular condition responsible artificial nucleic acids 2. Creation of cancer cell selective oligonucleotide therapeutics 3. Supramolecular photochirogenesis mediated by biopolymers as chiral nano-reacter 4. Development of high-time-resolve and high sensitive circular dichroism measurement system 5. Analyses and control of the photoexcited state dynamics of aromatic compounds for electronic devices
Topics in Reaction Mechanism and Dynamics IV A Topics in Reaction Mechanism and Dynamics IV B	Prof. Hiroshi Kumigashira	IMRAM	1. Functionality appearing at the surface and interface of oxide nanostructures 2. Physical Chemistry for oxide electronics 3. Design of novel Functionality of oxide nanostructures based on synchrotron-radiation analysis
Topics in Reaction Mechanism and Dynamics V A Topics in Reaction Mechanism and Dynamics V B Topics in Reaction Mechanism and Dynamics VI A	Assoc. Prof. Mao Fukuyama	IMRAM	1. Study on nano / micro analytical chemistry 2. Interface chemistry of nano/micro space, and detection/ imaging methods
(Doctoral course) Special Lecture in Chemistry	Members from Division of Reaction Mechanism and Dynamics		
(Master's course) Topics in Solid State Chemistry I A	<u>Solid State Chemistry</u> Prof. Hitoshi Miyasaka Assoc. Prof. Wataru Kosaka	 IMR IMR	1 Development of electronic and spin functional materials based on coordination chemistry 2 Development of ferromagnetic conductors in soft materials for molecular spintronics 3 Creation of new nano-sized magnets and expansion into new materials

			4 Development of multi-redox materials in a condensed molecular system 5 Materials development and guest-host interaction in a redox-active metal organic framework
	Prof. Hitoshi Kasai Lecturer Kouki Oka	IMRAM IMRAM	1. Creation of functional organic nanoparticles using original methods 2. Development of next-generation drugs using organic nanoparticles 3. Creation of innovative organic functional materials for energy production, storage, and conversion
Topics in Solid State Chemistry II A			
Topics in Solid State Chemistry III A Topics in Solid State Chemistry III B			
(Doctoral course) Special Lecture in Chemistry	Members from Division of Solid State Chemistry		
(Master's course) Topics in Biofunctional Chemistry III A	<u>Biofunctional Chemistry</u> Prof. Fumi Nagatsugi Assoc. Prof. Kazumitsu Onizuka	 IMRAM IMRAM	1. Design, synthesis, and evaluation of artificial nucleic acids which have the capability to chemically control gene expression 2. Design, synthesis, and evaluation of new functional molecules aiming for "In Cell Chemistry"
Topics in Biofunctional Chemistry I A			
Topics in Biofunctional Chemistry II A	Prof Satoshi Takahashi	IMRAM	1. Single molecule fluorescence spectroscopy and microscopy for the observation of biomolecular dynamics. 2. Characterization of the protein folding and functional dynamics. 3. Development of new methods of protein design.
Topics in Biofunctional Chemistry IV A	Prof. Shin Mizukami Assoc. Prof. Toshiyuki Kowada	IMRAM IMRAM	1. Development of bioimaging probes 2. Development of technology for photoregulation of biofunctions with functional molecules 3. Elucidation of cellular functions and disease mechanisms and development of therapeutic methods using functional probes
(Doctoral course) Special Lecture in Chemistry	Members from Division of Biofunctional Chemistry		

(Master's course) Topics in Separation Chemistry I A Topics in Separation Chemistry I B	Reaction and Separation Processes (Collab. Comm.) Prof. (Comm.) Hajime Kawanami Prof. (Comm.) Mitsuhiro Kanakubo Prof. (Comm.) Tetsuji Ito	 AIST AIST AIST	1. Matter separation by supercritical fluid and use as a chemically reactive field 2. Fundamental properties of ionic liquids and its applications to separation technology 3. Sensing technology with enzyme immobilization in ordered mesoporous materials and its applications
(Master's course) Topics in Chemistry of Heavy Elements I A Topics in Chemistry of Heavy Elements I B	Heavy Element Chemistry (Collab. Comm.) Prof. (Vis.) Masayuki Watanabe Prof. (Vis.) Yoshihiro Kitatsuji Assoc. Prof. (Vis.) Tetsuya Sato	 JAEA JAEA JAEA	1. Solution chemistry of 4f, 5f elements 2. Chemistry of transition elements 3. Chemistry of recycling of nuclear fuel

(6) Earth Science

Course	Field and instructors	Affiliation	Research topic
(Master's course) Advanced Lecture on Geodynamics I Advanced Lecture on Geodynamics II Advanced Lecture on Geohistory I Advanced Lecture on Geohistory II (Doctoral course) Special Advanced Lecture on Tectonics Special Advanced Lecture on Geohistory	Geosphere Evolution Prof. Hiroyuki Nagahama Prof. Jun Muto	 GS of Science GS of Science	(1) Structural Geology (2) Extraterrestrial Electromagnetism
(Master's course) Advanced Lecture on Paleoceanography Advanced Lecture on Reef Evolution Advanced Lecture on Coral Reef Science (Doctoral course) Special Advanced Lecture on Environmental Geology	Assoc. Prof. Hideko Takayanagi Assoc. Prof. Ryuji Asami	GS of Science GS of Science	(1) Carbonate sedimentology and geochemistry (2) Paleoenvironmental analysis of sedimentological and geochemical records from calcareous skeleton/shells and carbonate deposits
(Master's course) Advanced Lecture on Environmental Geology II	Natural History Science Prof. Reishi Takashima	Center for Academic Resources and Archives	(1) Global Environmental Transition Studies
(Master's course) Advanced lecture on Evolutionary Paleobiology Advanced Lecture on Bioevent Geology (Doctoral course) Special Advanced Lecture on Paleontology	Geosphere Evolution Assoc. Prof. Noritoshi Suzuki	 GS of Science	(1) Mass ecology and Mass evolution
(Master's course) Advanced Lecture on Environmental Geology I Advanced Lecture on Environmental Dynamics I (Doctoral course) Special Advanced Lecture on Environmental Dynamics	Geoenvironmental Dynamics Assoc.Prof. Hideko Takayanagi	 GS of Science	(1) Geology and Paleontology
(Master's course) Advanced lecture on Natural Hazards	Natural Hazard Science Assoc.Prof. Daisuke Sugawara	 IRIDeS	(1) Natural Hazard

Advanced Lecture on Environmental Geochemistry (Doctoral course) Special Advanced Lecture on Environmental Geochemistry	Material Circulation in Geosphere (Collab.Comm.) Prof. (Comm.) Miki Takahashi		Experimental Seismology
(Master's course) Advanced Lecture on Geoscience of Origin and Evolution of life I, II Advanced Lecture on Resource Geochemistry (Doctoral course) Advanced Resource and Environmental Geochemistry	Earth and Planetary Materials Science Prof. Takeshi Kakegawa Assoc. Prof. Yoshihiro Furukawa	 GS of Science GS of Science	 (1) Research on elemental cycle on the early Earth (2) Research on the origins of Life (3) Ecosystem of Precambrian Earth
(Master's course) Advanced Lecture on Primitive Solar System Material I, II (Doctoral course) Special Advanced Lecture on Early Solar System Evolution	Prof. Tomoki Nakamura Lecturer Daisuke Nakashima	GS of Science GS of Science	(1) Cosmochemistry of primitive solar system materials (2) Research on early solar system formation based on evidence derived from meteorites, interplanetary dust particles, and samples returned by space missions
(Master's course) Advanced Lecture on Volcanology and Geofluid Sciences I, II Advanced Lecture on Material Transport in the Earth I, II (Doctoral course) Special Advanced Lecture on Volcanology and Geofluid Science	Prof. Michihiko Nakamura Assoc. Prof. Satoshi Okumura	GS of Science GS of Science	(1) Volcanology (2) Physical properties of magmas and other geological fluids, Mechanisms of rock microstructure developments
(Master's course) Special Lecture on Quantum-beam Earth Science I, II Advanced Lecture on Physical Chemistry of the Earth's Interior I, II Advanced Lecture on Solid Planetology I, II (Doctoral course) Special Advanced Lecture on Quantum-beam Earth Science Advanced Comparative Planetology Special Advanced Lecture on Ultrahigh-pressure Mineral Physics	Assoc. Prof. Akio Suzuki	GS of Science	(1) Research on the inner structure, formation and evolution of the Earth (2) The properties of matter in the Earth core under high temperature and pressure (3) Developmental research of techniques to produce high temperature and pressure (4) Comparative planetary study of the Earth and Icy bodies
(Master's course) Advanced Lecture on applied mineralogy (Doctoral course) Special Topics in global crystal sciences	Prof. Hiroaki Ohfuji	GS of Science	(1) Crystallization and self-organization mechanisms of minerals (2) Deep carbon cycle and diamond genesis (3) Growth and dissolution of crystals in various global and social environments
(Master's course) Advanced Lecture on Mineral Structure I, II Advanced Lecture on Mineral Texture I, II (Doctoral course) Advanced Mineralogy	Natural History Science Assoc. Prof. Toshiro Nagase Earth and Planetary Materials Science Assoc. Prof. Takahiro Kuribayashi	Center for Academic Resources and Archives GS of Science	(1) Crystallography and Mineralogy (2) Growth process of Minerals (3) Mineral textures
(Master's course) Advanced Lecture on Petrology I, II	Petrotectonics Prof. Tatsuki Tsujimori	CNEAS	(1) Solid earth chemistry and Planetary studies

Advanced Lecture on Metamorphic Rock I, II (Doctoral course) Advanced Petrology Special Topics in Petrotectonics	Assoc. Prof. Naoto Hirano	CNEAS	(2) Isotopic petrology (3) Geochronology (4) Metamorphic rock petrology (5) Volcanic rock petrology (6) Mantle petrology (7) Belt Geology (8) Volcanology
(Master's course) Advanced Lecture on Earth and Planetary Materials I, II, III (Doctoral course) Special Advanced Lecture on Earth and Planetary Materials I, II, III	Reaction and Kinetics in the Earth's Interior (Collab.Comm.) Assoc. Prof. (Comm.) Isoji Miyagi Assoc. Prof. (Comm.) Kazunori Ogawa Prof. (Vis.) Katsuhiko Suzuki	 GSJ, AIST JAXA JAMSTEC	(1) Researches on volcanic eruptions (2) Strategy of Japanese solar-system exploration in the world-wide space mission trend (3) Lunar and planetary formation based on the evidence derived from past space missions (4) Geochemistry of radiogenic isotopes
(Master's course) Advanced Lecture on Human Geography I Advanced Lecture on Human Geography II Advanced Lecture on Regional System Advanced Lecture on Regional Environment Advanced Lecture on Environmental Geography II (Doctoral course) Special Advanced Lecture on Human Environmental Geography I Special Advanced Lecture on Human Environmental Geography II	Environmental Geography Prof. (Conc.) Tomoki Nakaya Assoc. Prof. Yuzuru Isoda	GS of Environmental Studies GS of Science t	(1) Human Geographic (2) Urban Geography (3) Economic Geography (4) Geographical Information Science (5) Spatial Statistics (6) Spatial Epidemiology (7) Social Survey Methods (8) Disaster Research
(Master's course) Advanced Lecture on Geomorphology I Advanced Lecture on Geomorphology II Advanced Lecture on Climatology I Advanced Lecture on Climatology II Advanced Lecture on Environmental Geography I (Doctoral course) Special Advanced Lecture on Physical Environmental Geography I Special Advanced Lecture on Physical Environmental Geography II	Prof. Kazuaki Hori	GS of Science	(1) Natural Environmental Geography (2) Geomorphology
(Master's course) Advanced Lecture on Environmental Dynamics II Advanced Lecture on Environmental Dynamics III	Geoenvironmental Dynamics		

Abbreviations 2 (Affiliation: in alphabetical order)

<Tohoku University>

AIMR: Advanced Institute for Materials Research (Mathematics, Chemistry)
CNEAS: Center for Northeast Asian Studies (Earth Science)
FRIS: Frontier Research Institute for Interdisciplinary Sciences (Astronomy)
IEHE: Institute for Excellence in Higher Education (Chemistry)
IMR: Institute for Materials Research (Physics, Chemistry)
IMRAM: Institute of Multidisciplinary Research for Advanced Materials (Physics, Chemistry)
IRIDeS: International Research Institute of Disaster Science (Geophysics)
RARIS: Research Center for Accelerator and Radioisotope Science (Physics)
RCNS: Research Center for Neutrino Science (Physics)

<Other>

AIST: National Institute of Advanced Industrial Science and Technology (Chemistry)
CNS: Center for Nuclear Study, Faculty of Science, the University of Tokyo (Physics)
GSJ, AIST: Geological Survey of Japan, AIST (Earth Science)
IMS: Institute for Molecular Science (Physics)
JAEA: Japan Atomic Energy Agency (Physics, Chemistry)
JAMSTEC: Japan Agency for Marine-Earth Science and Technology (Geophysics, Earth Science)
JASRI: Japan Synchrotron Radiation Research Institute (Physics)
JAXA: Japan Aerospace Exploration Agency (Earth Science)
KEK: High Energy Accelerator Research Organization (Physics)
NIED: National Research Institute for Earth Science and Disaster Resilience (Geophysics)
NIT: Nippon Institute of Technology (Geophysics)
RERF: Radiation Effects Research Foundation (Physics)
RIKEN: Institute of Physical and Chemical Research (Physics)

5. Message for 1st-year students of the first two years of the doctoral program (master's program) who wish to apply for assistance offered by the Division for Interdisciplinary Advanced Research and Education

The Division for Interdisciplinary Advanced Research and Education (hereinafter referred to as "Division for Research and Education") is an organization that provides assistance for the development of young candidates who wish to take the lead in the academic world in the future as prominent researchers and aims to breach new territories in interdisciplinary research, resulting from the combination of diverse fields of education without being limited by the frames of existing graduate schools.

Currently, the Division has about 90 students, "Master's research and education students" who are in the first two years of the doctoral program and "Doctoral research and education students" who are in the last three years of the doctoral program, combined.

Those who wish to be "graduate research and education students" should obtain 6 or more credits in their first academic from the courses prescribed by the Division for Advanced Research and Education and (four or more credits from the courses offered by other departments or graduate schools) and apply to be nominated by the Graduate School of Science, then pass the screening conducted by the Division for Research and Education.

To be more precise, you must obtain the above-mentioned credits, 6 or more, by the end of March of your first year in the first two years of the doctoral program, then apply for it to the Graduate School of Science, by submitting your supervisor's written statement and academic transcript. If nominated by this Graduate School, the application is sent to the Division for Research and Education, accompanied by the recommendation letter from the graduate school and the academic transcript. Following the nomination, screening is carried out by the Division for Research and Education, and those who have passed the screening become "Master's research and education students" from their second year will receive financial aid such as a scholarship and assistance for improving their research environment. In addition, by attending workshops and seminars with young researchers from the Frontier Research Institute for Interdisciplinary Sciences the student will be able to nurture the perspectives for interdisciplinary research and to develop networks with researchers in different research fields.

"Doctoral research and education students" who are selected among from former "Masters research and education students" advancing to the last 3 years of the doctoral program and those not included in "Master's research and education students" but in their first year of the doctoral program with exceptionally high academic capability, will also receive travel and other expenses as an "Overseas Presentation Incentive" under the "Support Program for Presentations at Overseas Research Conferences, etc." when they make presentations or hold discussions at international conferences and other overseas research gatherings over three years, in addition to the above-mentioned assistance.

For further information, regarding the Division for Interdisciplinary Advanced Research and Education including its prescribed courses, refer to their website and pamphlet

Website: http://www.iiare.tohoku.ac.jp/education/index.html

6. Information regarding assistance from the Division for Interdisciplinary Advanced Research and Education

•The Division for Interdisciplinary Advanced Research and Education is an organization that provides assistance for the development of young candidates who wish to become top-level researches and aims to breach new territories in interdisciplinary research, resulting from the combination of diverse fields of education without being limited by the frame of existing graduate schools.

• Academic fields are now broadening, and new fields of research are producing remarkable results. We wish to support the vision and creativity which leads to the discovery of new and combined research fields. We aim to develop a broad-minded vision and creativity which is not limited by conventional educational disciplines and support practical research and education, emphasizing ingenious problem-solving abilities.

•Those who pass the screening conducted by the Division for Interdisciplinary Advanced Research and Education will remain registered as students of their graduate school or education division and will be called “Graduate research and education students”

Students enrolled in the first two years of the doctoral program in AY 2021 who complete the courses set out by the Division for Interdisciplinary Advanced Research and Education (more than 6 credits), in addition to those of Graduate School of Science, and are nominated by the Graduate School of Science upon application, who then pass the screening conducted by the Division for Interdisciplinary Advanced Research and Education will become “Master’s research and education students” when they advance to the second year of their course in AY 2022.

In addition, students who apply to the Graduate School of Science at the time of advancement into the last three years of the doctoral program who receive a nomination and also pass a screening conducted by the Division for Interdisciplinary Advanced Research and Education based on their proposed research plan and acquired grades will become “Doctoral research and education students” from AY 2023. We may accept applications from those who are not Master’s research and education students under special circumstances if the student is deemed to have an exceptional academic standard. In this case, students must obtain 4 credits based on the progress of their research, in addition to the courses prescribed by the Graduate School of Science.

As students remain registered with the Graduate School of Science, degrees are awarded by the Graduate School of Science.

•Master’s/Doctoral research and education students can receive a scholarship and various supports are offered, such as organizing "Joint Research Exchange Seminar for all Domains” by themselves.

•Aside from scholarship, particularly for Doctoral research and education students, we will also provide with travel and other expenses as an "Overseas Presentation Incentive" under the "Support Program for Presentations at Overseas Research Conferences, etc." when they make presentations or hold discussions at international conferences and other overseas research gatherings so that they can undertake research in combined fields, acting as programmed research leaders.

7. The Tohoku University Division for Interdisciplinary Advanced Research and Education

(1). Structure of the organization

The Tohoku University Division for Interdisciplinary Advanced Research and Education is an organization established with backing from individual graduate schools aiming to support the development of young researchers, with groups of distinguished researchers of the 21st-century frontier academic fields (12 groups adopted by the “Global COE program” of the Ministry of Education, Culture, Sports, Science, and Technology) at the core of the institution

It is a cooperative organization within the University with a vision of setting up a new type of interdisciplinary research facility from the fusion of diverse fields and establishing graduate school applicable to the Global COE Program, using practical methods to introduce a new approach towards teaching and research.

(2). Ideology

The Tohoku University Division for Interdisciplinary Advanced Research and Education aims to base its activities using research results published internationally, from the research of newly formed combined fields of study by the fusion of existing educational techniques. We prize individuals who are able to see things from many different angles and who can produce ideas that are not limited by conventional disciplines.

In addition, we aim to produce individuals who have the highest international academic standard who will not be limited by the frames of their current graduate school or education division and who will contribute to the creation of a frontier level of knowledge.

(3). Methods of Assistance

First-year students of the first 2 years of the doctoral program or the Master’s program (hereinafter referred to as “Master’s program”) passing the selection process of the Division for Interdisciplinary Advanced Research and Education will become “Master’s research and education students” upon advancement into their 2nd year. Second-year students will be able to receive a scholarship and various supports, such as organizing a "Joint Research Exchange Seminar for all Domains” by themselves.

“Master’s research and education students” who advance to the last 3 years of the doctoral program and pass the selection process of the Division for Interdisciplinary Advanced Research and Education will become “Doctoral research and education students”. Aside from receiving assistance as mentioned above, they will be provided with travel and other expenses as an "Overseas Presentation Incentive" under the "Support Program for Presentations at Overseas Research Conferences, etc." when they make presentations or hold discussions at international conferences and other overseas research gatherings.

(4). Application for selection

Students in the Master’s program etc. (students in the first 2 years of the doctoral program) wishing to apply for “Master’s research and education student” should obtain the required credits as set out by their graduate school, in addition to the prescribed 6 credits of the Division for Interdisciplinary Advanced Research and Education, and submit an application to their graduate school in AY 2021, in their first year. The Division for Interdisciplinary Advanced Research and Education will carry out selection based on nominations from the student’s graduate school. The assistance starts in AY 2022.

“Master’s research and education students” who wish to apply for “Doctoral research and education student” (includes students other than “Master’s research and education students” with exceptional academic scores) should apply to their graduate school at the time of advancement in AY 2023. The Division for Interdisciplinary Advanced Research and Education will carry out selection based on nominations from the student’s graduate school.

(5). The six research divisions

Our organization has six research domains (platforms). Those wishing to carry out research in a diverse field should choose a platform that is closest to the intended research.

1) Materials and Energy
2) Life and Environmental Science
3) Information and Systems
4) Device Technology
5) Human and Social System
6) Advanced Basic Science

8. Common Graduate School Subjects and Cross-Graduate School Subjects

Common Graduate School Subjects

The Graduate School of Tohoku University has been offering "*Common Graduate School Subjects*" since 2022.
The purpose of this program is to cultivate in-depth education, learn about contemporary social issues, and acquire transferable skills in order to develop creative and dynamic researchers and highly specialized personnel who can transcend all boundaries.
The *Common Graduate School Subjects* offers subjects for Master's and Doctoral students. Please refer to the class subject list for each major, as handling these at the Graduate School will vary depending on the major.
Please click on the link below to check the class schedule and registration method for each class.
https://pgd.tohoku.ac.jp/english/rpc/subjects.html

【Graduate School Common Subjects (FY2024)】

Course Title	Credits	Curricula
Intellectual Property Seminar	2	MC
Lectures on Interdisciplinary Research	2	MC
Teaching Development in Higher Education	2	DC
Special Lectures on Interdisciplinary Researches I	1	DC
Special Lectures on Interdisciplinary Researches Ⅱ	1	DC
Special Exercise on Interdisciplinary Researches I	1	DC
Special Exercise on Interdisciplinary Researches Ⅱ	1	DC
Special Exercise on Interdisciplinary ResearchesⅢ	1	DC
Special Exercise on Interdisciplinary Researches IV	1	DC
Special Exercise for Frontier Research in Interdisciplinary Sciences	1	DC
Basic PhD Literacy	2	DC
Doctoral Internship	1-2	DC
Renewable Energy: Biomass Circulation	2	MC, DC
Special Seminar on Multicultural Understanding PBL	2	MC, DC
Special Seminar on Career and Skill Development	2	MC, DC
Internship for Master Course Students A	1	MC
Internship for Master Course Students B	2	MC
Intercultural Collaborative Learning and Communication Seminar	2	MC, DC
Global Studies of International Education	2	MC, DC
ILAS Special Lecture A	2	MC, DC
ILAS Special Lecture B	2	MC, DC
ILAS Special Seminar	2	MC, DC

Cross-Graduate School Subjects

Courses offered by each graduate school that are highly common to all graduate schools and recommended for students of other graduate schools are grouped together as *"Cross-Graduate School Subjects".*
Please click on the link below to check the class schedule for each class.

https://pgd.tohoku.ac.jp/data/rpc_subjects/R6oudankamoku_E.pdf

9. International Joint Graduate Programs

International Joint Graduate Programs have been inaugurated within Tohoku University, for some of which the students of the Graduate School of Science are eligible to apply.
The program details are different from each other, but the features on the common ground are as below:

- Financial support is provided (in the form of RA payment).
- Applications are scheduled twice a year, for April and October recruitment.
- Basically, students who are to be in their second year of the master's program at the time of their recruitment are eligible, and there are cases when students who will be in their second semester or the first year of the doctoral program are also eligible.
- Students who apply while they are in the master's program should be determined to go on to the doctoral program.
- There are additional requirements to complete the program.
- Students are supposed to have overseas training and/or receive co-supervision in their collaborating institutions abroad.

For the details, please refer to the relevant websites:

Spintronics (GP-Spin)
https://gp-spin.tohoku.ac.jp/en/

Earth and Environmental Sciences (GP-EES)
https://gp-ees.tohoku.ac.jp/en/

Physics for the Universe (GP-PU)
https://www.gp-pu.tohoku.ac.jp/

Data Science (GP-DS)
http://gp-ds.tohoku.ac.jp/index_en.html

Materials Science (GP-MS)
http://gp-ms.tohoku.ac.jp/en/index.html

Integrated Chemistry (GP-Chem)
https://gp-chem.tohoku.ac.jp/en/

To see if you are eligible to apply for any of the programs, and if your research field matches with the targeted one, you should seek advice from your supervisor.

10. Academia-Industry Collaborating Graduate Programs

Refer to the website for the details:

WISE Program for AI Electronics
https://www.aie.tohoku.ac.jp/english/

WISE Program for Sustainability in the Dynamic Earth (SyDE)
https://syde.tohoku.ac.jp/english/

Graduate Program for Green and Digital Innovation (GreDi)
https://gredi.tohoku.ac.jp/

Student Life

Student Life

1. Student Services

Various procedures/applications are mainly handled/accepted by the Academic Affairs Division at Science Administration Center except for the Department of Mathematics as shown below.

Mathematics ····· Mathematics Office

Physics
Astronomy
Geophysics
Chemistry
Earth Science
····· Academic Affairs Division

*There are four sections in the Academic Affairs Division (or "kyomu") :
(i) Graduate Academic Affairs Section (daigaku-in kyomu)
(ii) Departmental Student Affairs Section (kyomu kikaku)
(iii) Undergraduate Academic Affairs Section (gakubu kyomu)
(iv) Student Support Section (gakusei shien)

Category		Venue	Time	Details
Personal details	Leave of absence, withdrawal, returning to class	Academic Affairs Division	When the need arises	Approval from the department chair required
	Change of name	〃	〃	
	Change of guardian, etc.	〃	〃	
	Change of address	〃	〃	
	Issue of student ID card	〃	At the time of enrollment	Reissue: when lost or deformed
Academic matters	Course time table	Academic Affairs Division (Math major->Math Dept. Office)	April (October for those enroll in fall)	
	Course registration	(Via website)	April and October	
	Thesis submission	Academic Affairs Division (Math major->Math Dept. Office)	To be announced	
	Studying in another Institute	Academic Affairs Division	When the need arises	
Tuition Fees and Scholarships	Payment of tuition fees	Cashiers Window	1st semester: 5/1-5/31 2nd semester: 11/1-11/30	Bank withdrawal recommended
	Tuition fee waiver, Deferment, or monthly installment application	Financial Support Section (Kawauchi-Kita campus)	1st semester: late Feb.–early Mar. 2nd semester: late Aug.–early Sep.	
	Scholarship	Academic Affairs Division	TBA via the Student Affairs Information System.	
Health & Insurance	Health consultations	Student Health Care Center	When the need arises (who have taken medical checkup)	Student Health Care Center is on the Kawauchi-Kita campus
	Annual medical checkup	〃	To be announced	
	Health certification	〃	When the need arises	
	Student Insurance (*Gakkensai & Gakkenbai*)	(Payment at) JP bank	At the time of enrollment	Payment made with payment slip
Other	Reservation for the Science Lecture Hall	Academic Affairs Division	At the earliest possible date	
	Reservation for lecture rooms in the department	Academic Affairs Division (Math major->Math Dept. Office)	〃	
	Issue of certificates	Certificate machine or Academic Affairs Division	When the need arises	Certificates unavailable from the machine, apply at Academic Affairs Division (takes about 2 days)
	JR Student discount certificate	Certificate machine	When the need arises	
	Student commuter certificate	Academic Affairs Division	When the need arises	JR commuter certificate takes 2 days
	Approval for students' group travel (for COOP)	〃	2 days before	
	Students' Friendship Association membership fee	(Payment at) JP bank or Credit Card	At the time of enrollment (optional)	Join at the time of enrollment (optional)
	Student Representative Council membership fee	(Payment at) JP bank	〃	〃

Information and consultation regarding academic matters and student life are available from one's supervisor, department chair, departmental student affairs section (Mathematics majors -> Mathematics Department Office), graduate academic affairs section, student support section, Office for Assistance, Support and Information Office

(OASIS), or Center for Counseling and Disability Services.

2. Student Registry

(1) Student ID card and ID number

Students should keep their student identification cards with them at all times. The card will act as a form of personal identification when using the library, and the certificate issuing machine. If lost, you should apply for a new card.

Your student ID number is issued at the time of enrollment or advancement, and not to be changed throughout your period of enrollment. Students are often required to put their ID numbers along with their names on official documents.

(2) Change of personal details

If a student's name, current address, guardian, or guardian's address is changed, they should inform the graduate school. In addition, depending on the department, students may be required to contact their department office. Note that if the details are not up to date, all certificates issued will contain old details, and the graduate school may not be able to get in touch with the student in an emergency.

(3) Leave of absence, return to class, and withdrawal

①Time to submit a request

Students wishing to take a leave of absence, return to class or withdraw from school must inform their supervisor at the earliest possible date and obtain approval from the department chair. Note that a request cannot be approved retroactively.

② "Leave of Absence Request"

Those who wish to take a leave of absence for more than 3 months due to an illness or other circumstances should submit the "Leave of Absence Request" form (those with an illness should attach a medical certificate).

As a rule, a leave of absence can only be granted from the first day of the following month of which the student submits one's request. For further information, refer to the relevant regulations and consult the Academic Affairs Division.

③ "Return to Class Request," "Notification of Return to Class"

If you are able to return to school during your leave of absence, you may request an early return by submitting "Return to Class Request". At the end of your leave of absence, you should submit a "Notification of Return to Class" form.

④ "Withdrawal Request"

Those wishing to withdraw from the school must submit the "Withdrawal Request", with their student ID card. As a rule, students are required to pay the tuition fee for the semester in which the withdrawal occurs.

(4) Disciplinary actions

It goes without saying that students will be held responsible for the same laws as Japanese citizens when committing crimes or engaging in illegal acts. Moreover, the university applies the following disciplinary actions to the student from the perspective of educational guidance.

① Type and description of Disciplinary Actions

a. Reprimand: student is given a warning for the committed illegal act and cautioned about future conduct
b. Suspension: student is suspended from the University for a specified length of time
c. Expulsion: student is deprived of one's right to study at the University; one's student status is terminated unilaterally.

② Disciplinary Action Guidelines

Guidelines are shown below. This shall not apply when the case does not fall into any of the following types.

Classification	Type of un-acceptable conduct	Disciplinary action to be taken
Criminal Acts etc.	Robbery, arson	Expulsion
	Theft, intentional damage, violent acts, intimidation, forceful detention or restraining of others, etc.	Expulsion, suspension, or reprimand
	Criminal acts related to drugs	Expulsion or suspension
	Underage drinking, including coercing it or letting it happen	Suspension or reprimand
	Stalking	Expulsion or suspension
	Rape, forced obscenity, acts related to child prostitution, acts related to child pornography, malicious conduct (including peeping and voyeurism), violation of the Prefectural Ordinance of Juvenile Protection	Expulsion or suspension
	Illegal entry into a building, or unauthorized use and/or occupation of a building.	Expulsion or suspension
	Illegal or inappropriate use of computers, networks, etc.	Expulsion, suspension, or reprimand
	Criminal acts, such as violent acts that do not result in injury to others	Suspension or reprimand
Violation of Road Traffic Acts etc.	Violation of traffic regulations such as unlicensed driving, drunk driving / encouraging, or being in a car with a person who is drunk driving	Expulsion or suspension
Harassment	Acts of sexual harassment, alcohol-related harassment, academic harassment, power harassment, etc.	Expulsion, suspension, or reprimand
Academic and research-related misconduct	Misconduct involving university exams	Expulsion, suspension, or reprimand
	Misconduct in academic activities such as dissertation thesis, academic presentations, or dissertation presentations.	Expulsion, suspension, or reprimand
Leakage of information	Acts to leak confidential information (including personal information) obtained through class or practical training etc.	Expulsion, suspension, or reprimand
Acts that hinder management and operation of the university	Damage, contamination, illegal remodeling/renovations, etc. of buildings or objects managed by the university	Suspension or reprimand

Be respectful to the rights of other people, laws, and regulations. Try to behave properly and responsibly as a student of Tohoku University.

3. Study Abroad

Tohoku University is developing and expanding the academic exchange agreements with outstanding educational institutions around the world and encourages students to study abroad on the university programs including COLABS (Cooperative Laboratory Study Program).

For detailed information about the study abroad program for Tohoku University students, refer to the link below and contact the following sections:

Tohoku University Global Learning Center: https://www.insc.tohoku.ac.jp/

Student Support Section, Academic Affairs Division, School of Science: Phone 022-795-6403

Division for International Research and Educational Cooperation (DiRECT): Phone 022-795-5829

COLABS (Cooperative Laboratory Study Program)

(1) Outline

The COLABS (Cooperative Laboratory Study Program) is a research-oriented program and its purpose is to offer an opportunity for Tohoku University students for scientific research experience in international partner educational institutions and to develop international research collaboration. The students are able to design their own study plan regarding starting time and duration in accordance with the progress of their research project.

(2) Research Institution

As a general rule, the students should engage in their research works at educational institutions that have established university/department level academic exchange agreements accompanying the Memorandum of Understanding on Student Exchange with Tohoku University. The students are required to obtain the consent of the academic supervisors at the host institutions regarding their acceptance before starting the COLABS application.

Searching for Partner Institution: http://ie.bureau.tohoku.ac.jp/partners

(3) Program Term

① COLABS Outbound: one semester or one year

② COLABS Outbound Intensive: more than or equal to 32 days and should not exceed three months

③ COLABS Outbound Workshop-style: more than or equal to 10 days and should not exceed 31 days

(4) Program Fees

The fees for the program should be borne by the students. However, the students shall be exempted from application, registration, and tuition fees at the host institutions under the academic agreement of student exchange in respect of the COLABS Outbound program. (Note that some institutions may request the fee payment.) As for the programs of Intensive and Workshop-style, the students shall be responsible to confirm the fee exemptions with the host institutions.

(5) Time of Application

Applications are accepted throughout the year. Note that the application should be completed a few months prior to the starting date of their study at the host institutions.

(6) Financial Aid

Scholarships may be available from the Japan Student Services Organizations (JASSO).

(7) Other

The student status is considered to be “Study Abroad” during their study at overseas institutions, and the period of study abroad is counted as a period of enrollment. The credits obtained from the host institutions may be regarded as credits acquired at the Graduate School of Science with approval from the Department Chair.

4. Tuition Fees and Scholarships

(1) Payment of tuition fees

Tuition fees are debited automatically from students' registered bank accounts. The accounts can be from any Japanese bank (except for a few banks that are not accepted).

The payment due dates are stated below. Students should check the information on the bulletin board and/or

website to know the exact date of automatic withdrawals, and ensure that they have the required funds in their accounts before the due date.

First Semester ……31st of May　　Second Semester ……30th of November

*Only the very first withdrawal takes place at a later date than listed, in May (for April enrollment) and November (for October enrollment), due to operational reasons.

(2) Waiver, deferment, or monthly installments of tuition payment

Students who have difficulty in paying tuition fees for economic reasons with outstanding academic capabilities, and who have other unavoidable circumstances may be exempted from paying all or part of the tuition fees, based on the application.

Application forms will be available from the link below and at the office of the Financial Support Section, Student Services Division (1st floor of the Education and Student Support Center, Kawauchi-Kita Campus); for the first (spring) semester from early February, and for the second (fall) semester, from early August. The application period for deferment or monthly installments of tuition payment is set at the same time as the tuition fee waiver. Detailed information on application procedures and results announcements will be notified each time by posting it on the bulletin board or website.

Information on the Tuition Fee Waiver, etc. -> http://www2.he.tohoku.ac.jp/menjo/tuition-e.html

[The extended payment due for the applicants of the fee waivers]

The results announcement of the fee waiver application is scheduled in July (for the spring semester) and December (for the fall semester).

If you did not receive a full waiver, or were only approved for a partial (one third or a half) waiver, the payment due will be extended to the last month of the relevant semester (except for the students' final semester, in this case, the fee needs to be collected one month earlier). The due dates differ according to the payment method: automatic withdrawal is made early in the month, and for those paying by cash, the deadline comes later in the month.

Be sure to check the exact deadline at the Academic Affairs Division (Kyomu 1) and to respect the deadline, because if the payment misses the deadline, you will be expelled.

(3) Scholarships

There are scholarships offered by the Japan Student Service Organization (JASSO) and private foundations.

-Application for scholarships

Scholarship information will be posted on the Student Affairs Information System and the School of Science website, etc.

*Scholarship information for international students is also posted on the website of DiRECT

: http://www.sci.tohoku.ac.jp/direct/english/

5. Health, Safety, and Accident Prevention

(1) Annual Medical Checkup

Students are required to attend an annual medical checkup conducted every May. Those with unusual findings will be instructed to undergo closer inspection. The schedule will be posted on the bulletin board etc.

Health certification required for employment or other opportunities is issued based on the result of the annual medical checkup; the certificate will not be available without having the annual checkup.

(2) Special Health Examination

①Health examination for RI handlers

To prevent radiation damage, students who are in contact with radio isotopes are required to attend special health examinations twice a year; the examination involves a skin test, blood test, and optical test. The schedule will be announced each time via e-mail or posting on the Student Affairs Information System, etc.

②Health examination for those handling organic solvents and specified chemical agents

To prevent adverse effects caused by organic solvents and other harmful chemicals, students who are in contact with the concerned material are required to attend special health examinations twice a year; the examination involves a blood test and liver function test. The schedule will be announced via the bulletin board or by other means.

(3) Student Insurance: "Personal Accident Insurance for Students Pursuing Education and Research (PAS or *Gakkensai*)", "Liability Insurance for Students (*Gakkenbai*)"

*Gakkensa*i provides relief for students who suffer physical injuries due to any unexpected accidents that occur while engaged in educational and research activities in the university or extracurricular activities. *Gakkenbai* provides coverage for injuries caused to a third party or damages made to the property of another person, for which the student is legally obliged to pay compensation, while engaged in educational and research activities in the university, or extracurricular activities. All students are required to buy these insurances as a precaution for possible accidents that may occur while conducting experiments or in training.

[Insurances etc. for International Students]

All international students at the School of Science are required to join the following insurance etc.:

1. *Gakkensai*: Personal Accident Insurance for Students Pursuing Education and Research —the same insurance as Japanese students (except that international students do not need to buy *Gakkenbai* (Liability Insurance for Students))—
2. Inbound *Futai Gakuso*: Comprehensive Personal Liability and Accident Insurance for International Students —since April 2018—
3. Emergency Secure Plan (ESP)

*For detailed information, please refer to the website of DiRECT:
http://www.sci.tohoku.ac.jp/direct/english/international/student-insurance.html

(4) Medical care for accidents during curricular activities

If an accident requiring medical care occurs while engaging in curricular activities, students may be able to receive treatment at the university hospital which expense is covered by the Graduate School of Science. Since the case requires a certificate to be issued by the dean, students should immediately inform the department office. If it is not within office hours, the student should first inform the University hospital that the accident has occurred during research/education and receive guidance on how to proceed, then, inform the department office later.

(5) Handling of hazardous materials

In the Graduate School of Science, there are a variety of hazardous materials, devices, and facilities, which require careful handling. A grave accident involving physical injury may occur due to momentary carelessness. Students should follow the relevant guidelines and instructions from their supervisors, and try to handle these materials with extreme and meticulous care.

(6) Procedures for dealing with accidents

If an accident occurs in the premises of the School of Science, and the first person to spot it is a student, the student should follow the procedures as detailed in "Tohoku University School of Science Guidelines on

Procedures for Students dealing with accidents."

Emergency Contact

If a student is the first on the scene of an accident

Contact…

○ Fires and fatal and injury accident

①Fire department (External line 0 -119)

②Department office and guard room

- •Mathematics (extension 6402)
- •Physics (extension 6494)
- •Chemistry (extension 4384)
- •Earth Science (extension 6645)
- •Biology (extension 6403)
- •Guard's room (extension 6360, 6361)

*When calling from your cell phone, put "022-795" prior to each extension number.

[Example of an emergency call]

There has been a fire (accident) at the Tohoku University, in Kita-Aobayama campus; the room number is XX, XX floor of XX building, XX department, in the School of Science. Please send the fire squad (ambulance).

<Inform your phone number>

"Touhoku Daigaku, Rigakubu (Rigaku kenkyuka), ○○Tou, ○○ Goushitsu de Hi ga deta (Kegashita). Shoubousha (Kyukyusha) wo Onegaishimasu".

○ Damaged property: Inform faculty members or the nearest department office and the guard's room

○ Theft: Inform the nearest department office and the guard's room

○ Life-threatening situation

①Police (External line 0-110)

②Inform faculty members, or the nearest department office and the guard's room.

Tohoku University, School of Science Guidelines on Procedures for Students Dealing with Accidents

(Aims and guidelines for enforcement)

Article 1 This guideline aims to outline the general procedures for dealing with accidents such as death and injury, theft, fire, natural disaster, loss of property (includes damage to the property), and other related accidents when it occurs within the premises of the School of Science (includes the Aobayama road route 2 and Kita-Aobayama library), in cases when the first person on the scene is an undergraduate student, graduate student, research student, credited auditor, special auditing or special research student (hereafter referred to as "student").

1.2 Students of the School of Science must take the suitable measures as outlined in the "Tohoku University Guidelines on Procedures for Students Dealing with Accidents" when an accident occurs within the premises of the School of Science.

1.3 Those carrying out the procedures detailed in this guideline must give priority to saving human life and try to prevent the obstruction to the research and education of the university.

(Fire)

Article 2 If a student discovers a fire, they must immediately set off the nearest fire alarm, inform the people at the neighboring laboratories, and call the fire department. In cases where it is safe to do so, they should cooperate with other faculty members and students to try to extinguish the fire and minimize damage to the surrounding facilities. In addition, they should alert the nearest department office in charge, and the guard's room.

(Death and injury)

Article 3 If a student witnesses an accident causing injury or death, they should call a doctor or an ambulance immediately to provide rescue. In addition, they should alert the department office in charge, and the guard's room.

(Loss of property)

Article 4 If a student witnesses damage inflicted to property, or causes damage to the property themselves, they should inform faculty members or the department office in charge, and the guard's room.

(Theft)

Article 5 If a student witnesses a theft, or has something stolen, is subject to theft, they should alert the department office in charge, and the guard's room.

(Life-threatening situation)

Article 6 If there is a life-threatening situation that requires immediate police attention, students should call the police immediately. In addition, they should alert faculty members or the department office in charge, and the guard's room.

6. Campus life support office
(OASIS: Office of Assistance, Support, and Information in the School of Science)

What is OASIS?

OASIS provides support when students may have concerns regarding university life and other personal problems. Please feel free to contact us regarding any problem or matter which concerns you.
We can point you in the right direction and refer you to other inquiry windows, services, or special institutions. Personal information about problems will not be disclosed to anyone else without his/her permission. However, in cases in which OASIS cannot provide the services needed for the student, we may seek the help of other teachers after receiving consent from the student.

Operating hours: 10:00 a.m.–5:30 p.m. on weekdays
Phone: 022-795-6706
E-mail: sci-campuslife@grp.tohoku.ac.jp
Counselors: Mr. Iwabuchi (Clinical psychologist) and Ms. Kikuchi (Clinical psychologist)
Place: Room 307 at Science Complex A (H-02)
Google Form for Appointments: https://forms.gle/P8ZPpoV8eXibfwpk9

Study & Break Room

You can use this room to study by yourself or in groups, and for a break.
You can eat and drink freely, and there is a microwave oven.
However, there is no sink or an electric kettle.

Opening hours: 9:00 a.m.– 6:00 p.m. on weekdays
Place: Room 825 in Physics Building (H-26)
*The entrance to the Physics Building is locked from 6:00 p.m. to 8:00 a.m.

Please check the website for announcements from **OASIS** -> http://www.sci.tohoku.ac.jp/campuslife/

*There is a Center for Counseling and Disability Services at The Kawauchi-Kita campus for students of all departments. Counseling/advising in English is also available at the Center.
URL: https://www.ccds.ihe.tohoku.ac.jp/front-2-2/counseling_office/sso_english/

7. Career Support Office

The Career Support Office provides students with support for higher education and employment.

The purpose of the Career Support Office is to create an environment in which students can devote themselves to their studies and research with peace of mind, without worrying about their careers.

If you have any concerns about advancing to the doctoral program or future employment, please feel free to contact the office.

[Advisor] Kumpei Nishimura (full-time faculty member of the Career Support Office))
[P l a c e] Room 823, 8th floor of the Physics Research Building
[Contact] Email: sci_career@tohoku.ac.jp, Tel: 022-795-3850

※You may come to the office in person, but we recommend that you make an appointment by e-mail, etc.

8. **Division for International Research and Educational Cooperation（DiRECT）**

DiRECT aims to support international and Japanese students seeking opportunities to engage in cross-cultural activities and study abroad.
DiRECT provides students who are hesitant about studying abroad with the best solution. Many students visit the office asking, what they should prepare for when studying abroad, or if it was possible to study abroad without repeating the year. DiRECT helps students look for universities based on their major and seniors' experiences studying abroad. DiRECT can also introduce experienced senior students to the opportunity-seekers.

Besides, DiRECT serves as an admission office for international applicants to the English-based Programs* at the School of Science and Graduate School of Science, Tohoku University. Likewise, the office provides a wide range of one-stop support to international students, such as application to the university, enrollment, and during the studentship.

The door is always open to you, and our staff members are happy to help you.

*AMC (Advanced Molecular Chemistry Course) is for undergraduate students, whereas IGPAS (The International Graduate Program for Advanced Science) is designed for graduate students.

Office Hours: Monday-Friday 8:30 am-5:15 pm
Location: 2F, Science Administration Center Building
Phone: 022-795-5829
Email: direct@mail.sci.tohoku.ac.jp
URL: https://www.sci.tohoku.ac.jp/direct/english/

9. Use of facilities

(1)Science Lecture Hall and lecture rooms

If you require using the Science Lecture Hall for events, please inform the Academic Affairs Section three days (except for weekends, national holidays, etc.) in advance.

Those requiring the use of lecture rooms in the department should inform the department office

(2)Dining and Shops

In the Kita-Aobayama campus, there are restaurants, cafes, and shops available as listed below:

Facility	Number of seats	Opening hours		Operated by
		Weekdays	Sat. Sun. National Holidays	
Momiji Dining	344	11:00-19:30 (Break: 14:00-17:00)	Closed	University COOP (*Seikyo*)
Noodle Corner		11:00-14:00	Closed	
Momiji shop		10:00-17:00	Closed	
Cash dispenser (77bank)		8:00-18:00	Not available	
Espace Ouvert (Café)	38	10:00-20:00	Closed	Individual Retailers
Convenience store		8:00-22:00	Closed	

*As of January 2024. The opening hours are subject to change without notice. For details, please visit the HP of the Tohoku University Coop at（https://www.tohoku.u-coop.or.jp/en/).

(3) Kita-Aobayama Library

The Kita-Aobayama Library has a collection of academic books, journals, and reference books in science, pharmaceutical science, and life science for students' and faculty members' use. Users should follow the library regulations.

①Opening hours····· 9 a.m. to 8 p.m. (until 5 p.m. during the summer, winter and spring holidays)

②Library holidays…Saturdays, Sundays, and National holidays (including substitute holidays), University Foundation Day (June 22), Commencement Day, Year-end and New Year holidays, and other dates specified by the Library Manager.

※The Library has an electronic entry/exit system, and students of the Kita-Aobayama campus may enter the library after normal hours of operation.

③Entry and use of the library

A student ID card or another form of personal identification is needed to enter the library. Students who are not issued a student ID card can apply for a temporary library card. Library material may be read freely, except those specified by the Library Manager.

④Borrowing, Returning and Renewal of Books

•Those wishing to borrow books must present their student ID card or temporary library card at the library counter along with the books they wish to borrow.

•The number of books that can be borrowed by a student simultaneously is 10 for graduate students and 5 for undergraduate students. The borrowing period for books is 14 days. In addition, students may borrow up to 5 books from other university libraries using an inter-library loan service.

•Borrowed material may be returned to university libraries participating in the inter-library services system. The

department libraries (for Mathematics and Physics) do not apply to this service.

•Those wishing to extend the loan period of their borrowed books may do so via *My Library* of the website of the library, or by asking for an extension at the library counter.

•The following items are for in-library use only

- Rare and valuable books, index catalogs, extract catalogs, literature catalogs, manuals, and magazines
- Books which are indispensable for library management
- In addition to the books listed above, books which are specified for in-library use only by the Library Manager

•Those who have checked books out of the Library may not lend those books to anyone else.

⑤Damage or destruction of books should be immediately reported to the Library. The student may be required to replace the book or pay the equivalent value of the book.

⑥Further information can be found in the Library Guide or the website of Kita-Aobayama library.

(4)Parking regulations

①Those who wish to use the parking space on the campus must have parking permission or special parking permission from the Dean of the Graduate School of Science.

②Students who drive to school and fall under the following categories may be allowed to use the parking space upon approval (500 JPY/month).

a) Graduate students (regular students, research students, credited auditors, etc.) who mainly attend the Aobayama campus and whose residence is more than 2kms away from the campus
b) 4th Year undergraduate students (regular students, research students, credited auditors, etc.) who mainly attend the Aobayama campus and whose residence is more than 3kms away from the campus
c) Students with physical disabilities, students who need to use a motor vehicle for transportation due to pregnancy, parenting, and caring for the aged, students who have difficulties making use of public transportation due to academic reasons, students who are acknowledged as having legitimate reasons due to special circumstances

③ Students who usually drive to a campus other than Aobayama and already have its parking permission may be allowed to use the parking space in the Aobayama campus upon approval when necessary for their study and research.

④ Students who wish to use a parking space must submit an electronic application using the prescribed form and obtain approval from their supervisor to receive a parking certificate and a pass card.

⑤ The parking certificate is valid until the end of the current academic year. Those who wish to continue using the parking space must re-apply for the certificate for the following academic year.

⑥ The parking certificate should be placed on the dashboard on the driver's side to be visible from the outside. Students should be careful enough not to obstruct other vehicles or pedestrians when parking

10. Certificates

(1) Certificates

Various certificates can be obtained from the Automatic Certificate Issuing Machine placed in the lobby of the Academic Affairs Section. (You will be required to swipe your student ID card, and to enter your password.) Certificates unavailable from the machine should be requested at the counter of the Academic Affairs Section, two days (except for weekends, national holidays, etc.) prior to the required issue date.

(2) JR Student discount certificate (*Gakuwari*)

The JR Student discount certificate can be obtained from the certificate machine placed in the lobby of the

Academic Affairs Section. You will be required to swipe your student ID card, and to enter your password. As a rule, the maximum number of student discounts certificates that can be issued is 20 per year. Those wishing to obtain more than 20 certificates should make a request at the window.

(3) Student commuter certificate

Those wishing to purchase a commuter pass (for train, subway, or bus) for the first time of the academic year should apply for a student commuter certificate at the Academic Affairs Section. Once purchased, the pass can be renewed within the same academic year by submitting the soon-to-be expired pass, and presenting your student ID card. *Subway passes can be renewed at some subway ticket machines.

①Commuter certificates for public transportation run by the Sendai City Transportation Bureau (including "*Gakuto Sendai* City Bus/Subway Free Pass") and Miyagi Prefectural Bus can be issued at the time of application.

②Commuter certificates for JR trains should be applied for a minimum of 2 days before the required issue date.

【Changes about purchasing "*Gakuto Sendai* Free Pass" from April 1, 2023】

From April 1, 2023, submitting the commuter certificate is NOT necessary for purchasing the Special student commuter pass "*Gakuto Sendai* Free Pass". Showing only your Student ID card at the ticket counter is good enough when purchasing a new pass.

Please note that those who use the regular student commuter pass other than "*Gakuto* Sendai Free Pass", which are the limited area pass, the JR train, and Miyagi Prefectural Bus, still need the commuter certificate and Student ID card for purchasing a new pass as before.

11. Student Representative Council, School of Science, Tohoku University

This Association is formed from students as official members and teachers and staff as supporting members, aiming to promote mutual friendship between members and improve students' life in general.
In most cases its board members are nominated from amongst students; every member's active involvement in the nomination process at their own department is essential to achieve the society's goal.
New members are expected to bring in brand-new ideas for creating projects as well as to uphold and improve its tradition. It is the society that is to assist members to enjoy fulfilling student life.

12. Regulations of Student Representative Council, School of Science, Tohoku University

(Omitted)

13. Administration and Management Regulation, School of Science, Tohoku University (Extract)

Article 1 This article will contain details regarding the organization and administration of faculty meetings, administrative meetings, graduate school conferences, and departmental meetings of Faculty of Science and Graduate School of Science (hereinafter referred to as "Graduate School, etc."), Tohoku University

Article 18 Graduate school conferences will be convened in order to reflect the ideas of members of the Graduate School etc. other than the teaching staff.

Article 19 The members of the Graduate school conference will be made up of the following:

1. Members of the Administrative meeting 3 members
2. Administrative staff 3 members
3. Graduate students 4 members
4. Undergraduate students 4 members

19.2 The nomination methods of members other than the teaching staff, that is, administrative staff, graduate and undergraduate students will be decided separately

Article 20 The Graduate school conference will have a meeting chair that will be nominated from among its members

Article 21 The Graduate school conference will be convened in the following circumstances:

1. When the Administrative meeting decides it is necessary
2. When the Graduate school conference decides it is necessary
3. If all the members either of "administrative staff", "graduate students" or "undergraduate students" request it with agenda.

Regulations

Tohoku University Graduate School General Rules

November 16, 1953
Established

Table of Contents

Chapter I General Provisions

Article 1 (1) The Graduate Schools of Tohoku University (hereinafter referred to as the "Tohoku University Graduate Schools") aim to teach and have students study academic theories and applications, have them master these at a profound level or cultivate knowledge in depth and outstanding abilities to engage in professions that require advanced expertise, and thereby contribute to cultural developments in a wide sphere.

(2) Within the structure of the Tohoku University Graduate Schools, professional graduate schools are designed to teach and have students study academic theories and applications and to cultivate knowledge in depth and outstanding abilities to engage in professions that require advanced expertise.

(3) For each graduate school, major, or course set under the Tohoku University Graduate Schools under the provisions of the following Article 2 (1) and Article 3, the purpose of its human resource development and other purposes of its education and research shall be as prescribed in each graduate school's rules.

Article 2 (1) The graduate schools and majors established under the Tohoku University Graduate Schools shall be as follows.

Graduate School of Arts and Letters: Japanese Studies; Global Humanities; Integrated Human Sciences
Graduate School of Education: Educational Science
Graduate School of Law: Law and Society; Public Law and Policy; Legal and Political Studies
Graduate School of Economics and Management: Economics and Management; Accountancy
Graduate School of Science: Mathematics; Physics; Astronomy; Geophysics; Chemistry; Earth Science
Graduate School of Medicine: Medical Sciences; Disability Sciences; Health Sciences; Public Health
Graduate School of Dentistry: Dental Sciences
Graduate School of Pharmaceutical Sciences: Molecular Pharmaceutical Science; Life and Pharmaceutical Science; Pharmacy
Graduate School of Engineering: Mechanical Systems and Design; Fine mechanics; Robotics; Aerospace Engineering; Quantum Science and Energy Engineering; Electrical Engineering; Communications Engineering;

Electronic Engineering; Applied Physics; Applied Chemistry; Chemical Engineering; Biomolecular Engineering; Metallurgy; Materials Science; Materials Processing; Civil and Environmental Engineering; Architecture and Building Science; Management Science and Technology
Graduate School of Agricultural Science: Agricultural Bioscience, Agricultural Chemistry
Graduate School of International Cultural Studies: International Cultural Studies
Graduate School of Information Sciences: Computer and Mathematical Sciences; System Information Sciences; Human-Social Information Sciences; Applied Information Sciences
Graduate School of Life Sciences: Integrative Life Sciences; Ecological Developmental Adaptability Life Sciences; Molecular and Chemical Life Sciences
Graduate School of Environmental Studies: Environmental Studies for Advanced Society; Frontier Science for Advanced Environment
Graduate School of Biomedical Engineering: Biomedical Engineering

(2) The capacities of the graduate schools shall be as specified in Appended Table 1.
Article 2-2 (1) Article 2-2 (1) In addition to the details set forth in the preceding Article 2, graduate degree programs shall be established, as a category of courses, under the Tohoku University Graduate Schools' doctoral courses prescribed in the following Article.
(2) Matters necessary for graduate degree programs shall be prescribed separately.

Article 3 As specified in Appended Table 1, master's courses, doctoral courses, and professional degree programs shall be established under the Tohoku University Graduate Schools.
Article 3-2 (1) Doctoral courses of graduate schools other than the Graduate School of Medicine, the Graduate School of Dentistry, and the Graduate School of Pharmaceutical Sciences shall be courses partitioned (hereinafter referred to as a "Partitioned Course") into the first two years (hereinafter referred to as a "First Phase Course") and the latter three years (hereinafter referred to as a "Latter Phase Course"), and First Phase Courses shall be handled as master's courses.
(2) The doctoral course of Medical Sciences of the Graduate School of Medicine shall be a course for the study of medicine (hereinafter referred to as the "Medical Course"), and the doctoral courses of Disability Sciences, and Health Sciences of the Graduate School of Medicine shall be Partitioned Courses.
(3) The doctoral course of the Graduate School of Dentistry shall be a course for the study of dentistry (hereinafter referred to as the "Dental Course").
(4) The doctoral course of Pharmacy of the Graduate School of Pharmaceutical Sciences shall be a course for the study of pharmacy (hereinafter referred to as the "Pharmacy Course"), and the doctoral courses of Molecular Pharmaceutical Science, and Life and Pharmaceutical Science of the Graduate School of Pharmaceutical Sciences shall be Partitioned Courses.
Article 3-3 The professional degree program of Law and Society of the Graduate School of Law shall be the course taught by the Law School.
Article 3-4 Master's courses and First Phase Courses (hereinafter referred to as "Master's Courses, etc.") aim to deepen students' knowledge from a broad perspective, and cultivate research abilities in their fields of specialization and, in addition, outstanding abilities to engage in professions that require advanced expertise.
Article 3-5 Latter Phase Courses and the Medical Course, Dental Course, and Pharmacy Course aim to develop advanced research abilities and rich knowledge as the basis of such abilities, which are necessary for students to independently engage in research activities in their fields of specialization as researchers, or to engage in other highly specialized operations.
Article 3-6 Professional degree programs aim to cultivate knowledge in depth and outstanding abilities to engage in professions which require advanced expertise.
Article 3-7 The course offered by the Law School aims to provide education solely for the development of

legal professions.

Article 4 (1) The standard duration of study for Master's Courses, etc. shall be two years; provided, however, that in cases where it is regarded as necessary for the sake of education or research, such standard duration of study may exceed two years in accordance with each graduate school or major, or the categories of students' modes of study, and pursuant to the provisions of each graduate school's rules.

(2) Notwithstanding the provision of the preceding Article 4 (1), in cases where a Master's Course, etc. provide education principally to persons with practical experience, where it is regarded as necessary for the sake of education or research, and where appropriate means are employed, for example the provision of classes or research guidance during nighttime as well as daytime, during other specific hours, or at specific times, to ensure no obstacle to education is caused, the standard duration of study for such Master's Course, etc. may be changed to a period of at least one year and less than two years in accordance with the graduate school or major concerned, or the categories of students' modes of study, and pursuant to the provisions of the graduate school's rules.

(3) The maximum duration of enrollment for Master's Courses, etc. shall be four years (or twice the standard duration of study, in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period other than two years).

Article 4-2 (1) The standard duration of study for Latter Phase Courses shall be three years; provided, however, that in cases where it is regarded as necessary for the sake of education or research, such standard duration of study may exceed three years in accordance with each graduate school or major, or the categories of students' modes of study, and pursuant to the provisions of each graduate school's rules.

(2) The maximum duration of enrollment for Latter Phase Courses shall be six years (or twice the standard duration of study, in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period exceeding three years).

Article 5 (1) The standard duration of study for the Medical Course, Dental Course, and Pharmacy Course shall be four years; provided, however, that in cases where it is regarded as necessary for the sake of education or research, such standard duration of study may exceed four years in accordance with each graduate school or major, or the categories of students' modes of study, and pursuant to the provisions of each graduate school's rules.

(2) The maximum duration of enrollment for the courses specified in the preceding Article 5 (1) shall be eight years (or twice the standard duration of study, in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period exceeding four years).

Article 5-2 (1) The standard duration of study set for professional degree programs other than the Law School's course shall be two years or a period of at least one year and less than two years.

(2) Notwithstanding the provision of the preceding Article 5-2 (1), in cases where a professional degree program other than the Law School's course provides education principally to persons with practical experience, and where appropriate means are employed, for example the provision of classes during nighttime as well as daytime, during other specific hours, or at specific times, to ensure no obstacle to education is caused, the standard duration of study for the professional degree program may be changed to a period of at least one year and less than two years if the original standard duration is two years, or, if the original standard duration is at least one year and less than two years, a period exceeding this period, in accordance with the relevant graduate school or major, or the relevant category of students' modes of study, and pursuant to the provisions of the relevant graduate school's rules.

(3) The maximum duration of enrollment for professional degree programs other than the Law School's course shall be four years (or twice the standard duration of study, in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a

period other than two years).

Article 5-3 (1) The standard duration of study set for the Law School's course shall be three years.

(2) The maximum duration of enrollment for completion of the Law School's course shall be six years; provided, however, that for persons enrolled in the Law School's course and regarded as having basic knowledge of laws (hereinafter referred to as a "Student With Some Legal Knowledge"), the maximum duration of enrollment shall be four years.

(3) The maximum duration of enrollment for acquisition of the necessary credits set for each year of study in the Law School's course shall be two years for each year of study; provided, however, that in the case of sickness or other unavoidable circumstances found while in the Law School's course, the maximum duration of enrollment may be a period exceeding two years per year of study.

Article 5-4 (1) In cases where a student makes a request to take a curriculum in a systematic manner over a certain period exceeding the applicable standard duration of study due to such circumstances as being in employment or other status, such systematic manner of studying may be permitted in accordance with the provisions of each graduate school's rules.

(2) In cases where a student for whom a systematic manner of studying pursuant to the provision of the preceding Article 5-4 (1) has been permitted (hereinafter referred to as a "Long-Term Course Student") makes a request to shorten the period of such manner of studying, the shortening of such period may be permitted in accordance with the provisions of each graduate school's rules.

(3) A Long-Term Course Student may not continue to be enrolled beyond twice the standard duration of study(or, for a Long-Term Course Student who is deemed to have been enrolled in the University under the provisions of Articles 32-2, 33-4 or 35-2, beyond the period calculated by deducting the period he/she is deemed to have been enrolled in the University under the provisions of Articles 32-2, 33-4 or 35-2 from the period of twice the standard duration of study).

Article 6 A year of study shall start from April 1 of a year and end on March 31 of the following year.

Article 7 A year of study shall be divided into the following two semesters.
First semester: from April 1 to September 30
Second semester: from October 1 to March 31 of the following year

Article 8 (1) Regular holidays shall be as follows:
Saturdays and Sundays;
The holidays prescribed in the Act on National Holidays (Act No. 178 of 1948);
June 22 as Tohoku University Foundation Day;
April 1 to April 7 as spring vacation;
July 11 to September 10 as summer vacation; and
December 25 to January 7 of the following year as winter vacation.
(2) In cases where it is necessary, a class may be held on a regular holiday.
(3) The periods of the spring, summer and winter vacations may be changed if necessary.
(4) Temporary holidays shall be prescribed on a case-by-case basis.

Article 9 Deleted

Chapter II Admission, Readmission, Progression, Transfer Admission, Graduate School Transfer, and Major Transfer

Article 10 (1) The timing of admission, progression, transfer admission, graduate school transfer, or major

transfer shall be within 30 days of the beginning of a year of study.

(2) Notwithstanding the provision of the preceding Article 10 (1), the timing of admission, progression, transfer admission, graduate school transfer, or major transfer may be within 31 days of the beginning of the second semester in some cases.

(3) The timing of readmission shall be prescribed on a case-by-case basis.

Article 11 A person who falls under one of the following items and passes the prescribed selection processes may be permitted to enroll in a Master's Course, etc. or professional degree program:

(i) A person who graduated from a university;

(ii) A person upon whom a bachelor's degree was conferred pursuant to the provision of Article 104, Paragraph 7 of the School Education Act (Act No. 26 of 1947; hereinafter referred to as the "Act");

(iii) A person who completed a 16-year curriculum of schooling abroad;

(iv) A person who completed a 16-year curriculum of schooling of a foreign country by taking course subjects in Japan through a correspondence education course provided by a school of such foreign country;

(v) A person who completed a university course of a foreign country (limited to a course upon completion of which the person who completed it is deemed to have completed a 16-year curriculum of schooling of such foreign country) provided by an educational institution in Japan that is recognized, under the schooling system of such foreign country, as a provider of university courses of such foreign country, and that is separately designated by the Minister of Education, Culture, Sports, Science and Technology;

(vi) A person to whom a degree equivalent to a bachelor's degree was conferred after completing a course whose duration of study was at least three years at a foreign university or other foreign school (limited to foreign universities/schools whose comprehensive conditions such as their education and research activities are assessed by a party certified by the government of the foreign country or a relevant organization, or equivalent foreign universities/schools separately designated by the Minister of Education, Culture, Sports, Science and Technology) (including those who completed such course by taking course subjects in Japan through correspondence education provided by a school of the foreign country, or those who completed such course at an educational institution that is recognized under the schooling system of the foreign country and is designated as prescribed in the preceding item);

(vii) A person who completed, after the day designated by the Minister of Education, Culture, Sports, Science and Technology, a specialized course at a specialized training college (limited to such course whose duration of study was at least four years, and which satisfied other standards set by the Minister) separately designated by the Minister;

(viii) A person designated by the Minister of Education, Culture, Sports, Science and Technology;

(ix) A person who was enrolled in a university for at least three years, who completed a 15-year curriculum of schooling abroad, who completed a 15-year curriculum of schooling of a foreign country by taking course subjects in Japan through correspondence education provided by a school of such foreign country, or who completed a university course of a foreign country (limited to such course upon completion of which the person who completed it is deemed to have completed a 15-year curriculum of schooling of such foreign country) provided by an educational institution in Japan that is recognized, under the schooling system of such foreign country, as a provider of university courses of such foreign country, and that is separately designated by the Minister of Education, Culture, Sports, Science and Technology; and furthermore who is found, by the Tohoku University Graduate Schools, to have achieved excellent results in acquiring the prescribed credits;

(x) A person who enrolled in a graduate school of another university pursuant to the provision of Article 102, Paragraph 2 of the Act (hereinafter referred to as "Other Universities' Graduate Schools"), and who is regarded by the Tohoku University Graduate Schools as having academic abilities deserving of receiving the education thereof; or

(xi) A person who is deemed, through an individual university entrance qualification assessment, to have academic abilities at least equivalent to those of university graduates by the Tohoku University Graduate

Schools, and also who has reached the age of 22.

Article 12 A person who falls under one of the following items and passes prescribed selection processes may be permitted to be enrolled in the Medical Course, Dental Course, or Pharmacy Course:
(i) A person who graduated from a university course in medicine, dentistry, pharmacy, or veterinary medicine;
(ii) A person who completed a 18-year curriculum of schooling abroad;
(iii) A person who completed a 18-year curriculum of schooling of a foreign country by taking course subjects in Japan through correspondence education provided by a school of such foreign country;
(iv) A person who completed a university course of a foreign country (limited to such course upon completion of which the person who completed it is deemed to have completed a 18-year curriculum of schooling of such foreign country) provided by an educational institution in Japan that is recognized, under the schooling system of such foreign country, as a provider of university courses of such foreign country, and that is separately designated by the Minister of Education, Culture, Sports, Science and Technology;
(v) A person upon whom a degree equivalent to a bachelor's degree was conferred after completing a course whose duration of study was at least five years at a foreign university or other foreign school (limited to foreign universities/schools whose comprehensive conditions such as their education and research activities are assessed by a party certified by the government of the foreign country or a relevant organization, or equivalent foreign universities/schools separately designated by the Minister of Education, Culture, Sports, Science and Technology) (including those who completed such course by taking course subjects in Japan through correspondence education provided by a school of the foreign country, or who completed such course at an educational institution that is recognized under the schooling system of the foreign country and designated as prescribed in the preceding item);
(vi) A person designated by the Minister of Education, Culture, Sports, Science and Technology;
(vii) A person who was enrolled in a university course in medicine, dentistry, pharmacy, or veterinary medicine for at least four years, who completed a 16-year curriculum of schooling abroad (limited to schooling that included a curriculum on medicine, dentistry, pharmacy, or veterinary medicine; the same shall apply hereinafter in this item), who completed a 16-year curriculum of schooling of a foreign country by taking course subjects in Japan through correspondence education provided by a school of such foreign country, or who completed a university course of a foreign country (limited to such course upon completion of which the person who completed it is deemed to have completed a 16-year curriculum of schooling of such foreign country) provided by an educational institution in Japan that is recognized, under the schooling system of such foreign country, as a provider of university courses of such foreign country, and that is separately designated by the Minister of Education, Culture, Sports, Science and Technology; and furthermore who is found, by the Tohoku University Graduate Schools, to have achieved excellent results in acquiring the prescribed credits;
(viii) A person who enrolled in any of Other Universities' Graduate Schools pursuant to the provision of Article 102, Paragraph 2 of the Act (limited to cases where the studying at such graduate school included a course in medicine, dentistry, pharmacy, or veterinary medicine), and who is regarded by the Tohoku University Graduate Schools as having academic abilities deserving of receiving the education thereof; or
(ix) A person who is deemed, through an individual university entrance qualification assessment, to have academic abilities at least equivalent to those of university graduates by the Tohoku University Graduate Schools, and also who has reached the age of 24.

Article 13 The readmission of a person who withdrew or was expelled from the Tohoku University Graduate Schools mid-course, and applies for readmission (limited to readmission to the same major as the one in which he/she was enrolled) may be permitted through selection processes in accordance with the provisions of each graduate school's rules.

Article 14 A person who has completed a master's course, First Phase Course, or professional degree program, and applies for continuous progression to a Latter Phase Course or the Medical Course, Dental Course, or Pharmacy Course (including cases in which the graduate school or major for which the person applies is different from those associated with his/her master's course, First Phase Course, or professional degree program) may be, through selection processes, permitted to proceed to the course applied for in accordance with the provisions of each graduate school's rules.

Article 15 Transfer admission to a professional degree program other than Latter Phase Courses and the Law School's course may be permitted for a person who falls under one of the following items and passes the prescribed selection processes, in accordance with the provisions of each graduate school's rules:
(i) A person who holds a master's degree or professional degree;
(ii) A person upon whom a degree equivalent to a master's degree or professional degree was conferred by a graduate school of a foreign university (hereinafter referred to as a "Foreign Graduate School");
(iii) A person who, in Japan, took the course subjects of a corresponding education course provided by a foreign school, and consequently upon whom a degree equivalent to a master's degree or professional degree was conferred;
(iv) A person who completed a foreign graduate course provided by an educational institution in Japan that is recognized, under the schooling system of the relevant foreign country, as a provider of graduate courses of the foreign country, and that is separately designated by the Minister of Education, Culture, Sports, Science and Technology (hereinafter referred to as an "Educational Institution providing Foreign Graduate Courses"), and thereafter upon whom a degree equivalent to a master's degree or professional degree was conferred;
(v) A person who completed a course at the United Nations University (hereinafter referred to as the "United Nations University"), which was founded on the basis of the United Nations General Assembly Resolution of December 11, 1972, as set forth in Article 1, Paragraph 2 of the Act on Special Measures Incidental to Enforcement of the "Agreement between the United Nations and Japan Regarding the Headquarters of the United Nations University" (Act No. 72 of 1976), and thereafter upon whom a degree equivalent to a master's degree was conferred;
(vi) A person who studied on the basis of a curriculum of a foreign school, Educational Institution providing Foreign Graduate Courses, or the United Nations University, passed an examination and assessment equivalent to those prescribed in Article 16-2 of the Standards for the Establishment of Graduate Schools (Ordinance of the Ministry of Education, Science and Culture No. 28 of 1974), and is found to have academic abilities at least equivalent to those of master's degree holders;
(vii) A person designated by the Minister of Education, Culture, Sports, Science and Technology; or
(viii) A person who is deemed, through an individual university entrance qualification assessment, to have academic abilities at least equivalent to those of master's degree holders or professional degree holders by the Tohoku University Graduate Schools, and also who has reached the age of 24.

Article 16 (1) A transfer to another graduate school or transfer admission to the Tohoku University Graduate Schools may be permitted, through selection processes, for a person falling under one of the following items, in accordance with the provisions of each graduate school's rules:
(i) A person who is enrolled in one of the Tohoku University Graduate Schools, and applies for a transfer to another graduate school during his/her course;
(ii) A person who is enrolled in any of Other Universities' Graduate Schools, and applies for a transfer to the Tohoku University Graduate Schools during his/her course; or
(iii) A person who is enrolled in a Foreign Graduate School or foreign institution of higher education equivalent thereto (hereinafter refer to as a "Foreign Graduate School, etc."), enrolled in a foreign graduate course at an Educational Institution providing Foreign Graduate Courses in Japan (limited to persons prescribed

in Article 102, Paragraph 1 of the Act), or enrolled in a course at the United Nations University, and who applies for transfer admission to the Tohoku University Graduate Schools during his/her course.

(2) A major transfer within a graduate school during a person's current major may be permitted through selection processes, in accordance with the provisions of the graduate school's rules.

(3) In applying for a transfer to another graduate school or major in accordance with the provision of Article 16 (1), the written permission of the Dean of the applicant's current graduate school, or that of the president of his/her university, shall be attached to his/her application form.

Article 16-2 (1) For each person whose admission or transfer admission to the Tohoku University Graduate Schools is permitted, the credits (including those earned as a Credited Auditor as prescribed in Article 15 of the Standards for the Establishment of Graduate Schools) that such person earned by taking course subjects in the curriculum/curricula of any of the Tohoku University Graduate Schools, Other Universities' Graduate Schools, Foreign Graduate Schools, etc., Educational Institutions providing Foreign Graduate Courses, and/or the United Nations University (hereinafter referred to as "Educational Institutions, etc. providing Foreign Graduate Courses") prior to such admission or transfer admission to the Tohoku University Graduate Schools may be deemed as credits acquired at the Tohoku University Graduate Schools in accordance with the provisions of the relevant graduate school's rules, in cases regarded as educationally beneficial by the relevant graduate school.

(2) For Master's Courses, etc., Latter Phase Courses, or the Medical Course, Dental Course, or Pharmacy Course, the number of credits that may be deemed to have been acquired at the Tohoku University Graduate Schools in accordance with the provision of the preceding Article 16-2 (1) shall be up to 15 credits, and those that may be deemed to have been acquired under the provisions of the preceding paragraph and Article 31-4 (1) shall be up to 20 credits in total.

(3) For professional degree programs other than the Law School's course, the number of credits that may be deemed as those acquired at the Tohoku University Graduate Schools in accordance with the provision of Article 16-2 (1), together with the number of credits deemed as acquired under Article 31-5 (1), shall be up to half of the 30 credits or more set as a requirement for completion of such professional degree programs.

(4) For the Law School's course, the number of credits that may be deemed to have been acquired at the Tohoku University Graduate Schools in accordance with the provision of Article 16-2 (1), together with the number of credits deemed as acquired under Articles 31-5 (1) and 35-4 (excluding credits that are deemed to have been acquired in excess of 30 credits in accordance with the provision of Article 31-5 (3)) shall be up to 30 credits.

(5) Notwithstanding the provisions of the preceding Article 16-2 (4), with regard to a Student With Some Legal Knowledge who completed Coordinated Introductory Law Programs (hereinafter referred to as “Coordinated Introductory Law Programs”) stipulated in Article 6, Paragraph 2, Item 1 of the Act on Linkage Between Law School Education and Bar Examination, etc. (Act No. 139 of 2002; hereinafter referred to as the “Coordinated Act”;) (hereinafter referred to as a “Student who completed Coordinated Introductory Law Programs”), the number of credits that may be deemed to have been acquired at the Tohoku University Graduate Schools shall be up to 46 credits together with the number of credits deemed as acquired in accordance with the provision of Article 31-5 (1) and Article 35-4 (excluding credits that are deemed to have been acquired in excess of 46 credits under the proviso to Article 31-5 (4)).

Article 16-3 With regard to a person whose readmission, transfer to another graduate school, transfer admission, or transfer to another major is permitted, the course subjects already taken, the number of credits already acquired, and the term of study already spent by such person may be recognized in part or in whole upon deliberation by the Faculty Meeting or Graduate School Committee (hereinafter referred to as the "Faculty Meeting, etc.").

Article 17 (1) A person who intends to apply for admission, progression, transfer admission, or a transfer to another graduate school or major shall submit an application form by the prescribed due date for such

admission or transfer. A person who intends to apply for readmission shall submit an application form at the time of his/her application.
(2) The permission of admission, readmission, progression, transfer admission, transfer to another graduate school, or transfer to another major may be revoked if it is found that a recipient of such permission has received such permission based on a false or wrongful fact in the application under the preceding paragraph.

Article 18 (1) A person who intends to apply for admission, readmission, or transfer admission shall pay an application fee with his/her application form.
(2) The amount of the application fee in the preceding Article 18 (1) shall be as specified in Appended Table 2.

Article 19 (1) A person whose admission, readmission, or transfer admission has been permitted shall pay an admission fee by the prescribed due date unless such person has applied for an admission fee waiver or deferment of admission fee payment.
(2) The permitted admission, readmission, or transfer admission of a person who has failed to pay the admission fee in the preceding Article 19 (1) by the prescribed due date shall be revoked.
(3) The amount of the admission fee in Article 19 (1) shall be as specified in Appended Table 2.
Article 19-2 (1) In cases where a person whose admission, readmission (limited to readmission at the beginning of the first or second semester), or transfer admission has been permitted is found to experience difficulty in paying his/her admission fee due to financial reasons, such person may be granted a full or partial admission fee waiver or the deferment of admission fee payment, provided that the academic performance of such person is regarded as excellent.
(2) In addition to the person prescribed in the preceding Article 19-2 (1), a person who is found to experience significant difficulty in paying his/her admission fee due to special circumstances may be granted a partial or full admission fee waiver or the deferment of admission fee payment.
(3) The handling of the admission fee waiver and deferment of admission fee payment prescribed in the preceding Article 19-2 (1) and (2) shall be prescribed separately.

Article 20 (1) Any paid application fee or admission fee shall not be refunded.
(2) Notwithstanding the provision of the preceding Article 20 (1), in cases where a screening with application documents, etc. has been carried out (hereinafter referred to as the "First Stage Screening") and a screening of the academic abilities and other details of only those applicants who have passed the First Stage Screening (hereinafter referred to as the "Second Stage Screening") is to be implemented, the amount for the Second Stage Screening in the application fee prescribed in Article 18 shall be refunded to persons who have failed in the First Stage Screening, upon the request of such persons.

Article 21 (1) A person whose admission, readmission, or transfer admission has been permitted shall submit the written declaration prescribed by Tohoku University (hereinafter referred to as the "University") by the prescribed due date.
(2) The permitted admission, readmission, or transfer admission of a person who has failed to submit the written declaration in the preceding Article 21 (1) by the prescribed due date shall be revoked.

Chapter III Leave of Absence

Article 22 (1) A person who is unable to study for a continuous period of three months or more due to sickness or other accident may apply for permission for leave of absence by following the prescribed procedures.
(2) A period of leave of absence shall not exceed a continuous period of one year; provided, however, that a

leave of absence for more than one year may be permitted under special circumstances.
(3) A period of leave of absence shall not exceed two years in the case of Master's Courses, etc. (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period other than two years, the same number of years as such standard duration of study), three years in the case of Latter Phase Courses (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period exceeding three years, the same number of years as such standard duration of study), four years in the case of the Medical Course, Dental Course, and Pharmacy Course (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period exceeding four years, the same number of years as such standard duration of study), two years in the case of professional degree programs other than the Law School's course (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study, is a period other than two years, the same number of years as such standard duration of study), and one year in each year of study in the case of the Law School's course; provided, however, that an extension may be permitted under special circumstances, upon request.
(4) A person on leave may request permission to return to study when the ground for his/her leave of absence has ceased to exist.

Article 23 (1) A person who is regarded as unfit for study due to sickness or other circumstances may be ordered to take a leave of absence.
(2) A person on leave shall be ordered to return to study when the ground for his/her leave of absence has ceased to exist.

Article 24 If a period of leave of absence continuously extends to three months or more, that period shall not be included in the term of study.

Chapter IV University Transfer, Withdrawal, and Expulsion

Article 25 A person who intends to transfer to Other Universities' Graduate Schools shall apply for permission for such transfer with the reason therefor.

Article 26 A person who intends to withdraw from the Tohoku University Graduate Schools shall apply for permission for such withdrawal with the reason therefor.

Article 27 A person falling under any of the following items shall be expelled:
(i) A person who is found unlikely to achieve graduation due to sickness or other accident;
(ii) A person who has failed to complete his/her course or acquire the necessary number of credits after the applicable maximum duration of enrollment prescribed in Article 4 (3), Article 4-2 (2), Article 5 (2), Article 5-2 (3), or Article 5-3 (2) or (3) has elapsed;
(iii) A person for whom an admission fee waiver or deferment was not permitted, for whom two-third, a half, or one-third amount admission fee waiver or deferment was permitted, or for whom the permission for an admission fee waiver or deferment was revoked, and thereafter who has not paid the admission fee that the person is supposed to pay by the prescribed due date;
(iv) A person who failed to pay his/her tuition, and has still failed to pay it even after having received a demand; or
(v) A person who is not able to study even after the period of leave of absence prescribed in Article 22 (3) has passed.

Chapter V Educational Methods, etc.

Article 28 (1) The education of Master's Courses, etc., Latter Phase Courses, and of the Medical Course, Dental Course, and Pharmacy Course shall be delivered in the form of classes for course subjects and guidance on the preparation, etc. of academic dissertations (hereinafter referred to as "Research Guidance").
(2) The education of professional degree programs shall be delivered in the form of classes for course subjects.
Article 28-2 (1) Classes shall be conducted by giving lectures, seminars, experiments, laboratory work, or practical training, or combinations thereof.
(2) Classes under the preceding Article 28-2 (1) may be held in places other than classrooms, etc. for such classes by utilizing various types of media in a sophisticated manner, as separately prescribed by the Minister of Education, Culture, Sports, Science and Technology.
Article 28-3 (1) In teaching classes under the preceding Article 28-2 (1), professional graduate schools shall employ appropriate methods such as case study, field study, bidirectional or multidirectional discussion, and question-and-answer sessions in accordance with their major fields, in order to ensure that practical education to accomplish the purposes of such classes is provided.
(2) Professional graduate schools may teach classes in their major fields in places other than classrooms, etc. for such classes, in cases where the relevant graduate schools find that sufficient educational effects can be ensured in this manner in light of the provision of the preceding Article 28-2 (2).
Article 28-4 In cases where a graduate school finds it especially necessary for education, classes or Research Guidance may be provided during nighttime or other specific hours or at specific times.
Article 28-5 (1) The method of calculation of each credit for course subjects shall be based on the standard in which a credit of a course subject consists of contents that require 45 hours of study and generally shall follow the criteria below:
(i) For lectures and seminars, classes within the range of 15 to 30 hours in duration shall be treated as one credit;
(ii) For experiments, laboratory work, and practical training, classes within the range of 30 to 45 hours in duration shall be treated as one credit; and
(iii) In the case where a course subject consists of combinations of two or more lectures, seminars, experiments, laboratory work, and/or practical training, classes for a certain duration taking account of the criteria in the preceding two items according to the actual combinations shall be treated as one credit.
Article 28-5 (2) Notwithstanding the provision of the preceding Article 28-5 (1), in cases where the awarding of credits through evaluation of academic achievements is regarded as more appropriate for course subjects relating to academic dissertations, etc., the actual number of credits shall be set by taking account of the amount of study necessary for such course subjects.
Article 28-6 In each year of study, the period during which classes are taught shall, in principle, extend to 35 weeks, including the periods of regular examinations, etc.
Article 28-7 Classes under each course subject shall be taught over a period of 10 to 15 weeks as one unit, except in cases where a graduate school finds that any other manner of teaching classes is necessary from an educational standpoint, and also that such other manner is able to achieve sufficient educational effects.
Article 28-8 Each graduate school shall in advance specify the methods and contents of its classes and Research Guidance, the class and Research Guidance schedule for each year of study, and the criteria for evaluation of academic achievements and dissertations, and for approval of course completion (for each professional graduate school, the methods and contents of classes, the class schedule for each year of study, and the criteria for evaluation of academic achievements, and for approval of course completion).
Article 28-9 Each professional graduate school shall set an upper limit of credits that students can register as

their course subjects during a year of study or semester to enable them to properly take course subjects during each year of study.

Article 28-10 A person who intends to take course subjects offered by other graduate schools shall receive permission by following the prescribed procedures.

Article 29 (1) Examinations shall be held at the prescribed times for persons who have received the formal classes of courses offered by the Tohoku University Graduate School and have taken the prescribed course subjects.

(2) The Faculty Meeting, etc., shall set the methods of examinations.

Article 29-2 Prescribed credits shall be awarded to persons who have passed their examinations.

Article 30 In addition to the provisions in this Chapter, other matters necessary concerning educational methods shall be separately prescribed.

Chapter V, Paragraph 2 Studying at Other Universities' Graduate Schools etc., Study Abroad, etc.

Article 31 (1) In cases where a graduate school finds it educationally beneficial for students to take course subjects offered by Other Universities' Graduate Schools, the graduate school may allow students to take such subjects upon prior consultation with such Other Universities' Graduate Schools.

(2) The provision of the preceding Article 31 (1) shall apply mutatis mutandis to cases in which students take course subjects in Japan through correspondence education provided by Foreign Graduate Schools, etc., or in which students in Japan take course subjects in the curricula of Foreign Graduate Schools through Educational Institutions, etc. providing Foreign Graduate Courses.

(3) Notwithstanding the provision of the preceding Article 31 (2), consultation with the relevant Foreign Graduate Schools, etc., may be omitted if the graduate school finds there are special circumstances.

Article 31-2 In cases where a graduate school finds it educationally beneficial for students to receive Research Guidance at Other Universities' Graduate Schools, research institutes, etc. (hereinafter referred to as "Other Universities' Graduate Schools, etc."), or Educational Institutions, etc. providing Foreign Graduate Courses, the graduate school may, upon prior consultation with such Other Universities' Graduate Schools, etc. or Educational Institutions, etc. providing Foreign Graduate Courses, allow students to receive part of their Research Guidance at such places. In this case, the period during which master course students and First Phase Course students may receive such Research Guidance shall not exceed one year.

Article 31-3 (1) In cases where a graduate school finds it educationally beneficial for students to study at Foreign Graduate Schools, etc., the graduate school may, upon consultation with such Foreign Graduate Schools, etc., allow students to study abroad at such Foreign Graduate Schools, etc.

(2) Notwithstanding the provision of the preceding Article 31-3 (1), consultation with the relevant Foreign Graduate Schools, etc., may be omitted if the graduate school finds there are special circumstances.

(3) A period of study abroad shall be included in the term of study.

(4) The provisions of Article 31-3 (1) and (2) shall apply mutatis mutandis to cases in which students study at Foreign Graduate Schools, etc., while on leave of absence.

Article 31-4 (1) For Master's Courses, etc., Latter Phase Courses, and the Medical Course, Dental Course, and Pharmacy Course, credits acquired by taking course subjects pursuant to the provisions of Article 31 (1) and (2), Research Guidance received pursuant to the provision of Article 31-2, and achievements made by studying abroad and/or by studying while on leave of absence pursuant to the provisions of the preceding Article 31-3 (1) and (4), shall be deemed as credits acquired, or Research Guidance received, at the Tohoku University Graduate Schools in accordance with the provisions of each graduate school's own rules.

Article 31-4 (2) The number of credits that may be deemed to have been acquired at the Tohoku University

Graduate Schools in accordance with the provision of the preceding paragraph shall be up to 15 credits, and those that may be deemed to have been acquired under the provisions of Article 16-2 (1) and the preceding paragraph shall be up to 20 credits in total.

Article 31-5 (1) For professional degree programs, credits acquired by taking course subjects pursuant to the provisions of Article 31 (1) and (2), and achievements made by studying abroad and/or by studying while on leave of absence pursuant to the provisions of Article 31-3 (1) and (4), shall be deemed as credits acquired at the Tohoku University Graduate Schools in accordance with the provisions of each graduate school's own rules.

(2) The number of credits that may be deemed as those acquired at the Tohoku University Graduate Schools in accordance with the provision of the preceding Article 31-5 (1), together with the number of credits deemed as acquired under Article 16-2 (1), shall be up to half of the 30 credits or more set as a requirement for completion of such professional degree programs.

(3) Notwithstanding the provision of the preceding Article 31-5 (2), for the Law School's course, the number of credits that may be deemed as those acquired at the Tohoku University Graduate Schools, together with the number of credits deemed as acquired under Article 16-2 (1) and Article 35-4, shall be up to 30 credits; provided, however, that in the case where more than 93 credits are necessary as a requirement for course completion, more than 30 credits may be deemed as acquired only in relation to the portion exceeding the 93 credits.

(4) Notwithstanding the provisions of the preceding Article 31-5 (2) and (3), with regard to a Student who completed Coordinated Introductory Law Programs in the Law School's course, the number of credits that may be deemed as those acquired at the Tohoku University Graduate Schools, together with the number of credits deemed as acquired in accordance with the provision of Article 16-2 (1) and Article 35-4, shall be up to 46 credits; provided however, that in the case where more than 93 credits are necessary as a requirement for course completion, more than 46 credits may be deemed as acquired only in relation to the portion exceeding the 93 credits.

Chapter VI Course Completion and Academic Degree Conferral

Article 32 (1) The completion of a master's course or First Phase Course shall require at least two years of enrollment (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study is a period other than two years, such standard duration of study), the acquisition of at least 30 credits for course subjects, the submission of a master's dissertation or research results based on a specific topic (hereinafter referred to as a "Master's Dissertation, etc.") upon receipt of the necessary Research Guidance and in line with the purpose of the Master's Course, etc., and the passing of the review of such dissertation or research results, and the final examination, in accordance with the provisions of the graduate school's rules; provided, however, that, with regard to the term of study, one year or more of enrollment (excluding the period during which the student in question is deemed to have been enrolled in the University in accordance with the provisions of the following Article) shall be sufficient for persons whose research achievements are regarded as outstanding by the Faculty Meeting, etc.

(2) In the case referred to in the preceding Article 32 (1) (limited to cases of the completion of a First Phase Course), if it is found necessary to accomplish the purposes of a relevant doctoral course, the passing of the examination and assessment specified in the following items may be set as a requirement for the completion of a First Phase Course in lieu of the passing of the review of a Master's Dissertation, etc. and the final examination, under the provisions of the relevant graduate school's rules:

(i) An examination of highly specialized knowledge and abilities concerning the major field concerned and on matters that constitute a basic background of fields associated with the major field concerned and that should be acquired or developed during the First Phase of Course; and

(ii) an assessment of abilities necessary for independent execution of research associated with the person's

doctoral dissertation, and that should be acquired during the First Phase Course.

Article 32-2 With regard to a Master's Course, etc., in cases where credits acquired before admission to the Tohoku University Graduate Schools are deemed to have been acquired at the Tohoku University Graduate Schools pursuant to the provision of Article 16-2 (1), and where the acquisition of such credits is regarded as the completion of part of the relevant curriculum of a master's course or First Phase Course, the student in question may be deemed to have been enrolled in the Tohoku University Graduate Schools for a period of up to one year, in consideration of such number of credits, the period required to acquire such credits and others, under the provisions of the relevant graduate school's rules; provided, however, that, even in this case, the student shall be enrolled in a master's course or First Phase Course at least for one year.

Article 33 (1) A Master's Dissertation, etc., shall be sufficient to demonstrate the knowledge and ability specified in Articles 3-4.

(2) A Master's Dissertation, etc., shall be submitted by the prescribed deadline date during the term of study.

Article 33-2 (1) The completion of a doctoral course as a Partitioned Course shall require at least three years of enrollment in the relevant Latter Phase Course (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study is a period exceeding three years, such standard duration of study; for a student who has completed the Law School's course, two years [in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study is a period exceeding three years, a period obtained by subtracting one year from such standard duration of study]; and the same shall apply in Article 34 (3)), the submission of a doctoral dissertation upon receipt of the necessary Research Guidance, and the passing of the review of such dissertation, and the final examination, in accordance with the provisions of the graduate school's rules; provided, however, that with regard to the term of study for a person who falls under one of the following items, and whose research achievements are regarded as outstanding by the Faculty Meeting, etc., the period of enrollment specified in the applicable item below shall be sufficient:

(i) A person who completed a master's course or First Phase Course with a standard duration of study of two years or more: one year or more

(ii) A person who completed a master's course or First Phase Course with a standard duration of study of at least one year and less than two years or whose term of study until his/her completion of a master's course or First Phase Course was at least one year and less than two years: three years or more including the term of study spent for such course

(iii) A person who completed a professional degree program other than the Law School's course with a standard duration of study of at least one year and less than two years: three years or more including such standard duration of study

Article 33-2 (2) In addition to the provision of the preceding Article 33-2 (1), only in the case where it is found especially necessary in terms of Research Guidance, the completion of course subjects during a Latter Phase Course may be set as a requirement for the completion of a doctoral course, under the provisions of the relevant graduate school's rules.

Article 33-3 (1) The completion of the Medical Course, Dental Course, or Pharmacy Course shall require at least four years of enrollment (in the case where the standard duration of study set for the relevant graduate school or major, or the relevant category of students' modes of study is a period exceeding four years, such standard duration of the study; the same shall apply in the following Article 34 (3)), the acquisition of at least 30 credits for course subjects, the submission of a doctoral dissertation upon receipt of the necessary Research Guidance, and the passing of the review of such dissertation, and the final examination, under the provisions of the relevant graduate school's rules; provided, however, that concerning the term of study, at least three years of enrollment shall be sufficient for persons whose research achievements are regarded as outstanding by the Faculty Meeting, etc.

Article 33-4 With regard to the Medical Course, Dental Course, or Pharmacy Course, in cases where credits acquired prior to admission to the Tohoku University Graduate Schools are deemed to have been acquired at the Tohoku University Graduate Schools pursuant to the provision of Article 16-2 (1), and where the acquisition of such credits is regarded as the completion of part of the relevant curriculum of the Medical Course, Dental Course, or Pharmacy Course, the student in question may be deemed to have been enrolled in the Tohoku University Graduate Schools for a period of up to one year, in consideration of such number of credits, the period required to acquire such credits and others, in accordance with the provisions of the relevant graduate school's rules.

Article 34 (1) A doctoral dissertation shall be sufficient to demonstrate the research ability and knowledge specified in Article 3-5.
(2) A doctoral dissertation shall be, in principle, submitted during the term of study. In this case, this submission shall be completed by the prescribed deadline date.
(3) A person who failed to submit a doctoral dissertation during the period prescribed in the preceding Article **34 (2)** and withdrew from the university may submit his/her doctoral dissertation if such submission is within one year from the day of his/her withdrawal, provided that he/she earned the prescribed credits for the relevant course subjects and received the necessary Research Guidance in the case where he/she was enrolled in a Latter Phase Course for at least three years and belonged to a graduate school whose requirements for completion include the provision of Article 33-2 (2),.3 or that he/she earned the prescribed credits for the relevant course subjects and received necessary Research Guidance in the case where he/she was enrolled in the Medical Course, Dental Course, or Pharmacy Course for at least four years.

Article 35 The completion of a professional degree program other than the Law School's course shall require at least two years of enrollment (in the case where the standard duration of study set for the relevant graduate school or major or the relevant category of students' modes of study is a period other than two years, such standard duration of study), and the completion of the prescribed curriculum, for example the acquisition of at least 30 credits for course subjects, under the provisions of the relevant graduate school's rules.
Article 35-2 With regard to professional degree programs other than the Law School's course, in cases where credits acquired before admission to the Tohoku University Graduate Schools are deemed to have been acquired at the Tohoku University Graduate Schools pursuant to the provision of Article 16-2 (1), and where the acquisition of such credits is regarded as the completion of part of the relevant curriculum of professional degree programs other than the Law School's course, the student in question may be deemed to have been enrolled in the Tohoku University Graduate Schools for a period of up to half of the relevant standard duration of the study, in consideration of such number of credits, the period required to acquire such credits and others, under the provisions of the relevant graduate school's rules; provided, however, that even in this case, the student shall be enrolled in a professional degree program other than the Law School's course at least for one year.
Article 35-3 The completion of the Law School's course shall require at least three years of enrollment and the acquisition of at least 96 credits for course subjects under the provisions of the graduate school's rules.
Article 35-4 (1) In the Law School's course, a Student With Some Legal Knowledge may, under the provisions of the graduate school's rules, be deemed to have been enrolled for a period of up to one year as part of the term of study prescribed in the preceding Article 35-3 and, concerning the credits under the same Article, have acquired up to 30 credits, including credits that he/she is deemed to have acquired pursuant to the provision of Articles 16-2 (1) and 31-5 (1) (excluding credits that he/she is deemed to have acquired over 30 credits pursuant to the provision of the proviso of Article 31-5 (3)), at the Tohoku University Graduate Schools.
(2) Notwithstanding the provisions of the preceding Article 35-4 (1), concerning a Student who completed Coordinated Introductory Law Programs, the number of credits that may be deemed as those acquired at the

Tohoku University Graduate Schools, together with the number of credits deemed as acquired under Article 16-2 (1) and Article 31-5 (1) (excluding credits that are deemed to have been acquired over 46 credits under the proviso to Article 31-5 (4)) shall be up to 46 credits.

Article 36 (1) A master's degree shall be conferred on each person upon his/her completion of a master's course or First Phase Course. A doctoral degree shall be conferred on each person upon his/her completion of a doctoral course. A professional degree shall be conferred on each person upon his/her completion of a professional degree program.
(2) In conferring a master's degree pursuant to the provision of the preceding Article 36 (1), the title of the relevant major field shall be appended under the following categorization:
Graduate School of Arts and Letters: Degree of Master (Literature)
Graduate School of Education: Degree of Master (Education or Educational Informatics)
Graduate School of Law: Degree of Master (Law)
Graduate School of Economics and Management: Degree of Master (Economics or Business Administration)
Graduate School of Science: Degree of Master (Science)
Graduate School of Medicine: Degree of Master (Medical Sciences, Disability Sciences, Nursing Sciences, Health Sciences, or Public Health)
Graduate School of Dentistry: Degree of Master (Oral Sciences)
Graduate School of Pharmaceutical Sciences: Degree of Master (Pharmaceutical Sciences)
Graduate School of Engineering: Degree of Master (Engineering)
Graduate School of Agricultural Science: Degree of Master (Agricultural Science)
Graduate School of International Cultural Studies: Degree of Master (International Cultural Studies)
Graduate School of Information Sciences: Degree of Master (Information Sciences)
Graduate School of Life Sciences: Degree of Master (Life Sciences)
Graduate School of Environmental Studies: Degree of Master (Environmental Studies)
Graduate School of Biomedical Engineering: Degree of Master (Biomedical Engineering)
(3) In conferring a doctoral degree pursuant to the provision of Article 36 (1), the title of the relevant major field shall be appended in accordance with the following categorization:
Graduate School of Arts and Letters: Degree of Doctor (Literature)
Graduate School of Education: Degree of Doctor (Education or Educational Informatics)
Graduate School of Law: Degree of Doctor (Law)
Graduate School of Economics and Management: Degree of Doctor (Economics or Business Administration)
Graduate School of Science: Degree of Doctor (Science)
Graduate School of Medicine: Degree of Doctor (Medicine, Disability Sciences, Nursing Sciences, or Health Sciences)
Graduate School of Dentistry: Degree of Doctor (Dentistry)
Graduate School of Pharmaceutical Sciences: Degree of Doctor (Pharmaceutical Sciences or Pharmacy)
Graduate School of Engineering: Degree of Doctor (Engineering)
Graduate School of Agricultural Science: Degree of Doctor (Agricultural Science)
Graduate School of International Cultural Studies: Degree of Doctor (International Cultural Studies)
Graduate School of Information Sciences: Degree of Doctor (Information Sciences)
Graduate School of Life Sciences: Degree of Doctor (Life Sciences)
Graduate School of Environmental Studies: Degree of Doctor (Environmental Studies)
Graduate School of Biomedical Engineering: Degree of Doctor (Biomedical Engineering)
(4) In addition to the provisions of the preceding Article 36 (2) and (3), when a master's degree or doctoral degree is conferred, the title of the relevant major field may be appended as "Degree of Master (Academic Field)" or "Degree of Doctor (Academic Field)."

(5) Professional degrees to be conferred pursuant to the provision of Article 36 (1) shall be as follows:
Graduate School of Law: Degree of Master in Public Law and Policy (Professional Degree) or Juris Doctor (Professional Degree)
Graduate School of Economics and Management: Degree of Master in Accountancy (Professional Degree)
Article 37 In addition to the provisions in this Chapter, the requirements for conferral of master's degrees, doctoral degrees, and professional degrees, and other matters necessary concerning academic degrees shall be as prescribed in the Regulations on Tohoku University Academic Degrees (established on January 1, 1955).

Chapter VII Disciplinary Action

Article 38 (1) Any person who violates any regulations or orders of Tohoku University or acts contrary to his/her duties as a student shall be subject to disciplinary action through prescribed procedures.
(2) The available types of disciplinary action shall be reprimand, suspension, and expulsion.
(3) In cases where a suspension from Tohoku University extends to three months or more, the period of such suspension shall not be included in the term of study.

Chapter VIII Tuition

Article 39 (1) The amount of each tuition shall be as specified in Appended Table 2.
(2) Notwithstanding the provision of the preceding Article 39 (1), the annual amount of tuition for each Long-Term Course Student shall be the amount obtained by dividing, by the number of years in his/her term of study, the product of the annual amount of tuition prescribed in the aforementioned Article 39 (1) multiplied by the standard duration of the study (or, for Long-Term Course Students deemed to have been enrolled in the University under the provisions of Article 32-2, 33-4 or 35-2, the period calculated by deducting the period he/she is deemed to have been enrolled in the University under the provisions of Article 32-2, 33-4 or 35-2 from the period of the standard duration of study).
(3) The tuition payment shall be divided into two installments, one in the first semester and the other in the second semester. The amount due in each semester shall be equivalent to half of the annual tuition.
(4) The tuition under the preceding Article 39 (3) shall be paid in May for the first semester and in November for the second semester unless the student concerned applies for permission for a tuition waiver or deferment or monthly installment payment, provided, however, that the tuition for the second semester may be paid at the same time as the tuition for the first semester.

Article 40 A person who returns to study or is readmitted to Tohoku University during the first or second semester shall pay, within the month of his/her return or readmission, the tuition for the semester obtained by multiplying an amount equivalent to one-twelfth of the annual amount of his/her tuition (hereinafter referred to as the "Calculated Monthly Amount") by the number of months from the month of his/her return or readmission to the last month of the semester concerned.

Article 41 A person who is expected to complete his/her course in the middle of a year of study shall pay the tuition, which is obtained by multiplying the Calculated Monthly Amount by the number of months up to the month of his/her expected completion, in May (or, for a person who is expected to complete his/her course in April, April) if the tuition concerned is for his/her term of study in the first semester, or in November (or, for a person who is expected to complete his/her course in October, October) if it is for his/her term of study in the second semester.

Article 41-2 A Long-Term Course Student who is permitted to shorten his/her term of study under the

provision of Article 5-4 (2) shall immediately pay the tuition obtained by multiplying the annual amount of his/her tuition calculated according to the shortened period and based on the provision of Article 39 (2) by the number of years in the elapsed period of his/her enrollment, and then by deducting, from this product, the total amount of the tuition that should be paid for the elapsed period of his/her enrollment.

Article 42 (1) Unless otherwise provided for, a person who has withdrawn himself/herself from Tohoku University, has transferred to another university, or has been expelled or ordered to withdraw himself/herself from Tohoku University shall pay the tuition for the semester.
(2) A person to whom an order of suspension is given shall pay the tuition for the period of such suspension.

Article 43 (1) A person who is found to experience difficulty in paying his/her tuition due to financial reasons and whose academic performance is regarded as excellent or who is found to have other unavoidable circumstances may be granted a full or partial tuition waiver or tuition payment deferment or may be ordered to pay his/her tuition by monthly installments.
(2) The handling of the tuition waiver, tuition deferment, and monthly installment payment under the preceding Article 43 (1) shall be prescribed separately.

Article 44 (1) Paid tuition shall not be refunded.
(2) Notwithstanding the provision of the preceding Article 44 (1), in cases where a person who had paid his/her tuition for both the first and second semesters at the same time under the provision of the proviso of Article 39 (4) took a leave of absence before the beginning of the second semester or withdrew from Tohoku University before the end of the first semester, an amount equivalent to the tuition for the second semester shall be refunded at the request of such person.
Article 44-2 In addition to the provisions in this Chapter, other matters necessary for the handling of tuition shall be prescribed separately.

Chapter IX Credited Auditors

Article 44-3 In cases where a person applies to take a course subject or more of his/her choice among those offered by the Tohoku University Graduate Schools (including related course subjects), the graduate school concerned may permit, through selection processes, the enrollment of such person as a Credited Auditor only if such enrollment will not obstruct other students' study.
Article 44-4 The timing of enrollment of a Credited Auditor shall be at the beginning of a semester.
Article 44-5 The entrance eligibility, term of study, and other details of Credited Auditors shall be as prescribed in each graduate school's rules.
Article 44-6 (1) A person who applies for admission to Tohoku University as a Credited Auditor shall pay an application fee with his/her application form.
(2) The amount of the application fee shall be as specified in Appended Table 2.
Article 44-7 (1) A person whose admission to Tohoku University as a Credited Auditor has been permitted shall pay an admission fee by the prescribed due date.
(2) The permission of admission of a person who has failed to pay the admission fee under the preceding Article 9 (1) by the prescribed due date shall be revoked.
(3) The amount of the admission fee shall be as specified in Appended Table 2.
Article 44-8 (1) Prior to the beginning of classes in each semester, Credited Auditors shall pay their tuition for the semester in advance.
(2) The amount of tuition shall be as specified in Appended Table 2.
Article 44-9 A certificate of the acquisition of credits may be issued to Credited Auditors in accordance with

the provisions of each graduate school's rules.

Article 44-10 In addition to the provisions in this Chapter, provisions pertaining to graduate students shall apply mutatis mutandis to Credited Auditors.

Chapter IX, Paragraph 2 Special Auditing Students and Special Research Students

Article 44-11 In cases where students of Other Universities' Graduate Schools, Foreign Graduate Schools, etc., or Educational Institutions, etc. providing Foreign Graduate Courses apply to take course subjects offered by the Tohoku University Graduate Schools, each graduate school may accept such students as Special Auditing Students, as prescribed through consultation with such Other Universities' Graduate Schools, Foreign Graduate Schools, etc., or Educational Institutions, etc. providing Foreign Graduate Courses.

(2) Notwithstanding the provision of the preceding Article 44-11 (1), in cases where students of Coordinated Introductory Law Programs in the University or other universities which have executed, with the University, Jurist Training Coordination Agreements stipulated in Article 6, Paragraph 1 of the “Coordinated Act” apply to take course subjects offered by the Law School, the Law School may accept such students as Special Auditing Students, as prescribed in such agreement.

Article 44-12 In cases where students of Other Universities' Graduate Schools, Foreign Graduate Schools, etc., or Educational Institutions, etc. providing Foreign Graduate Courses apply to receive Research Guidance at the Tohoku University Graduate Schools, each graduate school may accept such students as Special Research Students, as prescribed through consultation with such Other Universities' Graduate Schools, Foreign Graduate Schools, etc., or Educational Institutions, etc. providing Foreign Graduate Courses.

Article 44-13 (1) The timing of acceptance of Special Auditing Students shall be at the beginning of a semester.

(2) The timing of acceptance of Special Research Students shall be, in principle, at the beginning of a semester.

(3) Notwithstanding the provision of Article 44-13 (1), in cases where Special Auditing Students to be accepted are students of Foreign Graduate Schools, etc., or Educational Institutions, etc. providing Foreign Graduate Courses, the accepting graduate school may determine the timing of such acceptance on a case-by-case basis if there are special circumstances.

Article 44-14 No application fee and admission fee shall be collected when accepting Special Auditing Students and Special Research Students.

Article 44-15 (1) When accepting a person falling under one of the following items as a Special Auditing Student or Special Research Student, no tuition shall be collected:

(i) A graduate student of a national university; or

(ii) A student from a graduate school of a public or private university, if a university-level mutual credit transfer agreement or university-level special research student exchange agreement (each including university-level agreement, department-level agreement, and any other similar agreement) stipulates that no tuition is to be collected for students from such graduate school;

(iii) A student of a Foreign Graduate School, etc. that has executed a university-level exchange agreement (including university-level agreements, department-level agreements, and other similar agreements; hereinafter the same shall apply) under which no tuition is to be collected for such student; or

(iv) A student of Coordinated Introductory Law Programs referred to in Article 44-11 (2).

Article 44-16 (1) The amount of tuition for a Special Auditing Student or Special Research Student who does not fall under any of the items of the preceding Article 44-15 shall be as specified in Appended Table 2.

(2) With regard to Special Auditing Students, the tuition under the preceding Article 44-16 (1) for a semester shall be collected before the beginning of their classes during the semester. With regard to Special Research Students, the tuition under the preceding Article 44-16 (1) for each three-month period starting from the

month of their acceptance shall be collected in the first month of each three-month period; if the period of acceptance is less than three months, the tuition for this period shall be collected in the first month of the same period.

Article 44-17 In addition to the provisions in this Chapter, provisions about graduate students shall apply mutatis mutandis to Special Auditing Students and Special Research Students.

Chapter X International Students

Article 45 (1) In cases where a foreign national applies for admission, readmission, or transfer admission to the Tohoku University Graduate Schools, the admission, readmission, or transfer admission of such foreign national may be permitted as an international student.

(2) For a person who applies for admission, readmission, or transfer admission to the Tohoku University Graduate Schools as an international student, each graduate school may hold special selection processes if it finds special circumstances.

(3) International students may not be included in quotas in certain cases.

Article 46 No application fee, admission fee, or tuition shall be collected concerning government-financed or sponsored foreign students based on the Implementation Guideline for the Government-Financed or Sponsored Foreign Student System (Ruling by the Minister of Education, Science and Culture, dated March 31, 1954; hereinafter referred to as the "Implementation Guideline"), notwithstanding the provisions of Article 18 (1), Article 19 (1), and Article 39 (1), respectively (except for application fees and admission fees associated with persons selected as government-financed or sponsored foreign students under the provision of Article 3 of the Implementation Guideline, based on recommendations made by the recommendation method prescribed in Article 4, Item 4 of the Implementation Guideline).

Article 46-2 No application fee, admission fee, or tuition shall be collected concerning international students based on university-level exchange agreements that aim to realize joint education between the Tohoku University Graduate Schools and Foreign Graduate Schools, etc., notwithstanding the provisions of Article 18 (1), Article 19 (1), and Article 39 (1), respectively.

Supplementary Provision
(Omitted)

Supplementary Provision (Revision: March 28, 2019, Rule No. 60)

Supplementary Provision (Revision: March 25, 2014, Rule No. 34)
These General Rules shall come into force on April 1, 2014, and the revised provision of Article 20 (2) shall apply to screenings for admission, readmission, and transfer admission in the academic year 2015 and later.
(Omitted)

Supplementary Provisions (Revision: March 29, 2018, Rule No. 54)
These General Rules shall come into force on April 1, 2018.

Supplementary Provisions (Revision: March 28, 2019, Rule No. 60)
1. These General Rules shall come into force on April 1, 2019.
2. Notwithstanding the revised provision of Article 2, the majors of Humane Studies, Linguistic Studies, Historical Studies, and Human Sciences offered by the Graduate School of Arts and Letters shall survive until the day on which persons enrolled in the majors as of March 31, 2019, cease to be enrolled in the majors.

Supplementary Provision (Revision: March 28, 2020, Rule No. 40)
These General Rules shall come into force on April 1, 2020.

Supplementary Provision (Revision: March 30, 2021, Rule No.
18) These General Rules shall come into force on April 1, 2021.

Supplementary Provision (Revision: March 29, 2022, Rule No. 40)
1. These General Rules shall come into force on April 1, 2022.
2. Notwithstanding the revised provision of Article 2, the majors of Resource Biology, Applied Life Sciences, and Biological Industry Creation Sciences survive until the day persons enrolled in the majors, as of March 31, 2022, cease to be enrolled.

Supplementary Provision (Revision: January 27, 2023, Rule No. 1).
These General Rules shall come into force on April 1, 2023.

Supplementary Provision (Revision: January 30, 2024, Rule No. 15).
These General Rules shall come into force on April 1, 2024.

Appended Table 1 (Related to Articles 2 and 3)

Graduate School	Major	Total admission capacity		New enrollment quota		Course
		First Phase Course, etc.	Latter Phase Course	First Phase Course, etc.	Latter Phase Course	
		No. of persons		No. of persons		
Graduate School of Arts and Letters	Japanese Studies	58	42	29	14	Doctoral course
	Global Humanities	58	36	29	12	Doctoral course
	Integrated Human Sciences	62	36	31	21	Doctoral course
Graduate School of Education	Educational Science	90	45	45	15	Doctoral course
Graduate School of Law	Law and Society	150		50		Professional degree program
	Public Law and Policy	60		30		Professional degree program
	Legal and Political Studies	20	60	10	20	Doctoral course
Graduate School of Economics and Management	Economics and Management	120	42	60	14	Doctoral course
	Accountancy	80		40		Professional degree program
Graduate School of Science	Mathematics	76	54	38	18	Doctoral course
	Physics	182	138	91	46	Doctoral course
	Astronomy	18	12	9	4	Doctoral course
	Geophysics	52	39	26	13	Doctoral course
	Chemistry	132	99	66	33	Doctoral course
	Earth Science	64	48	32	16	Doctoral course
Graduate School of Medicine	Medicinal Sciences	60	—	30	—	Master's course
		520		130		Doctoral course
	Disability Sciences	40	27	20	9	Doctoral course

	Health Sciences	64	36	32	12	Doctoral course
	Public Health	20	—	10	—	Master's course
Graduate School of Dentistry	Dental Sciences	16	—	8	—	Master's course
		168		42		Doctoral course
Graduate School of Pharmaceutical Sciences	Molecular Pharmaceutical Science	44	24	22	8	Doctoral course
	Life and Pharmaceutical Science	64	30	32	10	Doctoral course
	Pharmacy	16		4		Doctoral course
Graduate School of Engineering	Mechanical Systems and Design	84	30	42	10	Doctoral course
	Fine mechanics	90	33	45	11	Doctoral course
	Robotics	84	33	42	11	Doctoral course
	Aerospace Engineering	108	33	54	11	Doctoral course
	Quantum Science and Energy Engineering	76	33	38	11	Doctoral course
	Electrical Engineering	64	24	32	8	Doctoral course
	Communications Engineering	86	24	43	8	Doctoral course
	Electronic Engineering	102	45	51	15	Doctoral course
	Applied Physics	64	33	32	11	Doctoral course
	Applied Chemistry	52	24	26	8	Doctoral course
	Chemical Engineering	68	21	34	7	Doctoral course
	Biomolecular Engineering	38	15	19	5	Doctoral course
	Metallurgy	52	21	26	7	Doctoral course
	Materials Science	74	30	37	10	Doctoral course
	Materials Processing	60	24	30	8	Doctoral course
	Civil and Environmental Engineering	98	36	49	12	Doctoral course
	Architecture and Building Science	90	24	45	8	Doctoral course
	Management Science and Technology	42	39	21	13	Doctoral course
Graduate School of Agricultural Science	Agricultural Bioscience	162	69	81	23	Doctoral course
	Agricultural Chemistry	88	42	44	14	Doctoral course
Graduate School of International Cultural Studies	International Cultural Studies	70	48	35	16	Doctoral course
Graduate School of Information Sciences	Computer and Mathematical Sciences	80	33	40	11	Doctoral course
	System Information Sciences	106	33	53	11	Doctoral course
	Human-Social Information Sciences	60	30	30	10	Doctoral course
	Applied Information Sciences	94	30	47	10	Doctoral course
Graduate School of Life Sciences	Integrative Life Sciences	72	30	36	10	Doctoral course
	Ecological Developmental Adaptability Life Sciences	70	30	35	10	Doctoral course
	Molecular and Chemical Life Sciences	70	30	35	10	Doctoral course
Graduate School of Environmental Studies	Environmental Studies for Advanced Society	80	39	40	13	Doctoral course
	Frontier Science for Advanced Environment	120	60	60	20	Doctoral course
Graduate School of Biomedical Engineering	Biomedical Engineering	78	36	39	10	Doctoral course

Appended Table 2 (Relating to Articles 18, 19, 39, 44-6, 44-7, 44-8, 44-16)

Category		Application Fee (Yen)	Admission Fee (Yen)	Tuition (Yen)
Graduate Student	Law School course	30,000	282,000	804,000
	Professional degree program in Accountancy from the Graduate School of Economics and Management	30,000	282,000	589,300
	Other courses	30,000	282,000	535,800
Credited Auditor		9,800	28,200	14,800
Special Auditing Student		—	—	14,800
Special Research Student		—	—	29,700

Notes

1. With regard to the amount of the application fee for the screenings prescribed in Article 20 (2), the amount for the First Stage Screening shall be 7,000 yen, and that for the Second Stage Screening shall be 23,000 yen.
2. The shown tuition for graduate students is the annual amount.
3. The shown tuition for Credited Auditors and Special Auditing Students is the amount for classes for a credit.
4. The shown tuition for Special Research Students is the monthly amount.

2. Tohoku University, Graduate School of Science Regulations

Established on January 1, 1955

Table of Contents

Chapter I General Provisions

Article 1 (1) Details regarding admission, educational methods, course completion, etc. at the Tohoku University Graduate School of Science (hereinafter referred to as "the Graduate School") shall be as stated herein and in the Tohoku University Graduate School General Rules (established on November 16, 1953; hereinafter referred to as "the General Rules") and the Regulations on Tohoku University Academic Degrees (established on January 1, 1955). Notwithstanding the foregoing, however, the Dean of the Graduate School of Science (hereinafter referred to as "Dean of the Graduate School") may set special rules as necessary, following deliberations at the Committee of the Graduate School of Science (hereinafter referred to as "the Graduate School Committee").

(2) The purpose of the Graduate School is to promote the creation and development of natural sciences to discover the truths of nature, thereby enriching humankind's knowledge of nature and contributing to the advancement of society, as well as to develop human resources who are able to take the initiative in pioneering scientific research in an international research environment.

Article 2 This Graduate School has the following departments:

Mathematics
Physics
Astronomy
Geophysics
Chemistry
Earth Science

Chapter II Admission, Readmission, Progression, Transfer Admission, Graduate School Transfer, and Major Transfer

Article 3 Screening of students who have applied for admission under Article 11 of the General Rules shall be carried out by proficiency examinations of specialized subjects and a foreign language in addition to an interview.

Article 4 (1) Students who have applied for readmission in accordance with Article 13 of the General Rules may be readmitted upon screening, provided that readmission is within two years after withdrawal and is for the same department as before. However, under certain circumstances, readmission may be allowed even in cases where two or more years have passed since the date of withdrawal.

(2) The screening method for the above students shall be decided by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

(3) Details regarding whether or not to recognize the courses completed and credits obtained, as well as the period of enrollment of those who were readmitted according to Clause 1 of this Article, shall be decided on a case-by-case basis by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Article 5 (1) The screening methods for those who have requested progression under Article 14 of the General Rules; those who have requested a transfer admission under Article 15 of the General Rules; and those who have requested a graduate school transfer under Clauses 1 and 2 of Article 16 of the General Rules shall be decided individually by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

(2) Details regarding whether or not to recognize the courses completed and credits obtained, as well as the period of enrollment of those who have made graduate school transfer or major transfer shall be decided on a case-by-case basis by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Article 6 (1) The credits obtained by those who have been admitted or who have received approval for a transfer to the Graduate School at any of the educational institutes below before their admission or transfer admission (including credits obtained as credited auditors and special course auditors) may be considered as credits obtained in the Graduate School where it is deemed educationally beneficial:

(i) Graduate schools of Tohoku University or graduate schools of other universities (hereinafter referred to as “other graduate schools”)

(ii) Foreign universities’ graduate schools or other institutions of higher education equivalent to such foreign graduate schools (hereinafter referred to as “Foreign Graduate Schools, etc.”)

(iii) Locations in Japan that are formally recognized as educational institutions offering foreign university graduate school curricula and designated by the Minister of Education, Culture, Sports, Science, and Technology, or the United Nations University stipulated in Item 5 of Article 15 of the General Rules (hereinafter referred to as “educational institutions offering foreign graduate school curricula”)

(2) The maximum number of credits that can be considered as credits obtained in the first two-year master’s program (hereinafter referred to as “the master’s program”) of the Graduate school according to the above provision shall be 15, and the number of credits in total that may be considered as credits obtained in the master’s program in accordance with the above provision and with Article 18-(1) shall be limited to 20.

(3) The maximum number the credits in total that can be considered as credits obtained in the subsequent three-year doctoral program (hereinafter referred to as “the doctoral program”) according to Clause 1 of this Article shall be 10, together with the number of credits that can be considered as having been obtained in accordance with Article 18-(1).

Chapter III Educational Methods, etc.

Article 7 Education in the Graduate School shall be carried out by lectures at classes of the courses and guidance on thesis writing (hereinafter referred to as “research guidance”).

Article 8 (1) Courses shall be divided into specialized courses, interdisciplinary study courses, and related courses for the master’s program and specialized courses and related courses for the doctoral program.

(2) The courses, number of credits, and method of course completion shall be specified separately by the

Dean of the Graduate School, following deliberations at the Graduate School Committee.

Article 9 The Graduate School Committee shall assign a supervisor to each student to assist their studies and research.

Article 10 (1) Students of the master's program may take courses from the master's program of other departments, other graduate schools, or from the undergraduate program with permission of the Dean of the Graduate School. Students of the doctoral program may take courses from the master's program, courses of other departments, other graduate schools, or from the undergraduate program. They may also receive research guidance from other graduate schools or the Educational Division. In these cases, students must follow the procedures specified by the graduate school or faculty concerned.

(2) Of the courses taken under the preceding provision, the courses that are considered as related courses and the number of credits of such courses that can be included in the total number of credits as stated in Clauses 1 and 3 of Article 20 shall be determined by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

(3) Students of other graduate schools may be allowed to take courses or receive research guidance in the Graduate School upon their request.

Article 11 Course completion shall be determined following an examination, etc. Those who pass the examination, etc., will be awarded the designated credits. However, credits may be awarded without an examination, etc., but based on the performance in classes or reports submitted during the semester.

Article 12 Examinations, etc. shall be carried out regarding completed courses at the end of each semester or academic year.

Article 13 Aside from the above provision, if the Graduate School Committee deems necessary, additional examinations may be carried out.

Article 14 (1) Academic results are indicated as the following grades:

AA	90 to 100 points
A	80 to 89 points
B	70 to 79 points
C	60 to 69 points
D	59 points and below

(2) Grades AA, A, B, and C are regarded as pass marks; Grade D is regarded as a failing mark.

Chapter IV Studying at Other Universities' Graduate Schools, etc., and Study Abroad, etc.

Article 15 (1) Students may take courses of other universities separately specified by the Graduate School Committee with permission from the Dean of the Graduate School.

(2) The above provision shall apply also to cases where students take a distance learning course offered by a foreign university in Japan, and to cases where students take a course in an educational institution offering foreign graduate school curricula in Japan.

Article 16 Students may receive part of research guidance from other graduate schools or research laboratories (hereinafter referred to as "other universities' graduate schools etc."), or educational institutions offering foreign graduate school curricula separately specified by the Dean of the Graduate School, with permission from the Dean of the Graduate School and following deliberations at the Graduate School Committee. Students of the master's program may receive this research guidance for up to one year at maximum.

Article 17 (1) When deemed educationally beneficial by the Dean of the Graduate School, following deliberations at the Graduate School Committee, for students to study in a foreign graduate school, etc., the student may be allowed to study abroad upon consultation with the relevant foreign graduate school, etc.

(2) Notwithstanding the above provision, where the circumstances are deemed special by the Dean of the

Graduate School following deliberations at the Graduate School Committee, consultation with said foreign graduate school, etc. may be omitted.

(3) The duration of study abroad shall be included in the period of enrollment in the Graduate School.

(4) Clauses 1 and 2 of this Article shall apply also to cases in which a student takes courses in a foreign graduate school etc. while the student is taking leave of absence from the Graduate School.

Article 18 (1) The credits obtained upon completion of the courses taken in accordance with Article 15, research guidance received in accordance with Article 16, and results achieved through study abroad according to Clauses 1 and 4 of this Article or during a leave of absence shall be regarded as credits obtained and research guidance received at the Graduate School, by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

(2) The maximum number of credits that can be considered as credits obtained in the master's program of the Graduate school according to the above provision shall be 15, and the number of credits in total that may be considered as credits obtained in the master's program of the Graduate school in accordance with the above provision and with Article 6-(1) shall be limited to 20.

(3) The maximum number the credits in total that can be considered as credits obtained in the doctoral program according to Clause 1 of this Article shall be 10, together with the number of credits that can be considered as having been obtained in accordance with Article 6-(1).

Article 19 Besides the matters prescribed in this Chapter, necessary matters regarding completion of courses in other graduate schools, etc., completion of distance learning courses offered by a foreign university in Japan, completion of courses at educational institutions offering foreign graduate school curricula, and courses completed while study abroad or during a leave of absence shall be specified separately by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Chapter V Course Completion

Article 20 (1) Those who wish to complete the course of a master's program must:

- Be enrolled in the program for two years or more;
- Obtain 30 or more credits in total by completion of specialized courses of their department, interdisciplinary study courses, and related courses (of which at least 22 credits must be from specialized courses);
- Receive the required research guidance;
- Submit their thesis; and
- Pass the thesis review and final examination.

Provided, however, that those certified by the Dean of the Graduate School, following deliberations at the Graduate School Committee, as having achieved exceptional performance may be allowed to graduate after a period of enrollment of one year or more.

(2) In cases of the preceding paragraph where it is deemed necessary for achieving the aims of a doctoral program, in place of the review of a master's thesis and passing of the final examination, completion of the master's program may be accomplished by passing the following examination and review:

(i) Examination on advanced specialized knowledge and capabilities in a major field of study and fundamental grounding in areas related to said major field of study that should be mastered or cultivated in said master's program

(ii) Review of abilities that should be acquired in the aforementioned master's program and are necessary to independently execute research related to a doctoral thesis

(3) Those who wish to complete the course of a doctoral program must:

- Be enrolled for three years or more in the doctoral program;
- Obtain 20 or more credits in total by completion of specialized and related courses (of which at least 16

credits must be from specialized courses);
- Receive the required research guidance;
- Submit their thesis; and
- Pass the thesis review and final examination.

Provided, however, that those certified by the Dean of the Graduate School, following deliberations at the Graduate School Committee, as having achieved exceptional performance may be allowed to graduate after a period of enrollment of one year (for those who have completed the master's program in less than two years, a total of three years including the period of enrollment in the said program) or more.

Article 20 (2) With regard to the master's program, in cases where credits acquired before enrollment at the Graduate School, are deemed to have been acquired at the Graduate School under the provision of Article 6-(1), and when it is recognized that a student has completed a part of the curriculum of the master's program through the acquisition of said credits, the number of credits, the period required for the acquisition of the credits, and other factors are taken into consideration and the student may be deemed to have been enrolled in the school up to one year. However, in this case, the student must still be enrolled in the master's program for at least one year.

Article 21 (1) The master's thesis may only be submitted by those who have been enrolled for at least one year in the master's program, obtained 12 or more credits in total by completion of specialized, interdisciplinary study and related courses, and received the required research guidance.

(2) The doctoral thesis may only be submitted by those who have been enrolled for at least two years in the doctoral program, obtained 10 or more credits by completion of specialized, interdisciplinary study and related courses, and received the required research guidance.

(3) The procedure for submitting a master's or doctoral thesis when applying the proviso of Clause 1 or 3 of Article 20 shall be determined separately by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

(4) The master's thesis must be submitted by the deadline specified by each department of the Graduate School.

Article 22 (1) The final examination shall be conducted for those in the master's program who have obtained 30 or more credits, received the required research guidance, and submitted their master's thesis, and for those in the doctoral program who have obtained 20 or more credits, received the required research guidance and submitted their doctoral thesis.

(2) The final examination shall be in the form of an oral examination of the thesis submitted and the relevant major field.

Article 23 (1) If it is deemed necessary by the Dean of the Graduate School, following deliberations at the Graduate School Committee, a thesis review and final examination may be additionally conducted for those who should have but could not complete the master's program in March of the current year.

(2) The provisions of Articles 21 and 22 shall apply to the above re-review and additional final examination.

(3) The dates for the re-review and additional final examination shall be determined on a case-by-case basis by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Article 24 Course completion shall be approved by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Article 25 The results of the thesis review and final examination shall be indicated as a pass or fail.

Chapter VI Credited Auditors

Article 26 Students who wish to take courses offered by the Graduate School may be admitted as credited auditors.

Article 27 Those who may be admitted as credited auditors include those who have graduated university or

those deemed to have the academic ability at least equal to those who have graduated university.

Article 28 Those who wish to be admitted as credited auditors must fill in the prescribed application form with the names of the desired courses and submit it to the Dean of the Graduate School along with the required documents.

Article 29 The screening method for those who apply to be admitted as credited auditors shall be determined separately by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Article 30 (1) The duration of enrollment for a credited auditor is one year; provided, however, this period may be extended if requested.

(2) The duration of enrollment for a credited auditor shall not exceed two years.

Article 31 Credited Auditors may be awarded the credits of the attended courses upon passing an examination designated for each course.

Article 32 When credited auditors request a certificate of the credits they have obtained, it may be issued by the Dean of the Graduate School.

Chapter VII Special Auditing Students and Special Research Students

Article 33 Students of other graduate schools, foreign graduate schools, etc., or educational institutions, etc. offering foreign graduate school curricula who wish to take any of the courses of the Graduate School may be admitted as special auditing students upon consultation with the relevant graduate schools, foreign graduate schools, etc., or educational institutions, etc. offering foreign graduate school curricula.

Article 34 Students of other graduate schools, foreign graduate schools, etc., or educational institutions, etc. offering foreign graduate school curricula who wish to receive research guidance in the Graduate School may be admitted as special research students upon consultation with the relevant graduate schools, foreign graduate schools, etc., or educational institutions, etc. offering foreign graduate school curricula.

Article 35 Necessary matters regarding admission of special auditing students and special research students shall be determined separately by the Dean of the Graduate School, following deliberations at the Graduate School Committee.

Supplementary Provisions
(Omitted)

Supplementary Provisions (Revision: February 7, 2023, Rule No. 15)

These Regulations shall come into force on April 1, 2023

3. Tohoku University Graduate School of Science Curriculum Bylaws

Established December 27, 2005

(Aims)

Article 1 These bylaws are related to the courses, credits, and method of curriculum completion in the Tohoku University Graduate School of Science, as stated in Clause 2 of Article 8 of the Tohoku University Graduate School of Science Regulations (established on January 1, 1955 (hereafter referred to as “Regulations”)).

(Courses, credits, and method of curriculum completion)

Article 2 The courses, credits, and method of curriculum completion in the first two years (hereafter referred to as “the Master’s program”) are shown in Appendix Table 1, and those offered in the subsequent three years (hereafter referred to as “the Doctoral program”) are shown in Appendix Table 2.

Appendix Tables

(omitted)

Supplementary Regulations

(omitted)

Supplementary Regulations (amended on March 3, 2023)

1. These bylaws shall come into force from April 1, 2023.

2. The provisions in the amended Appendix Table 1 and Appendix Table 2 will be applied to students who have been admitted, advanced, changed schools, or transferred for the academic year 2023 and beyond.

Supplementary Regulations (amended on March 1, 2024)

These bylaws shall come into force from April 1, 2024.

4. Grading System of Specialized Courses

1. The grading system of specialized courses shall be as follows:

Grade	Description	Score	Pass/Fail
AA	Excellent	90-100	Pass
A	Very good	80-89	
B	Good	70-79	
C	Satisfactory	60-69	
D	Poor	59 and below	Fail
/	Course discontinued	-	-

For reference:
1. Results may be shown as a pass or fail under certain circumstances.
2. Grades may be awarded taking into consideration matters other than exam results, such as submitted reports, attendance rates and status of course completion.
3. The AA grade has been awarded to students who were admitted after 2005. Results prior to 2005 did not include a grade above A.

2. The syllabus shall contain the educational objective of each course (target learning achievement) and details on the grading method. In principle, grades shall be awarded by absolute evaluation according to the level of achievement of the objective set for each course.
3. Lecturers in charge shall retain exam scripts and reports submitted by students for one year from the date of the exam and the date of submission, respectively, for use in grading and for use in case a student requests disclosure.
   However, this does not apply to cases in which lecturers return exam scripts to students with a grade or comments. In the case of an exam script, it is desirable to keep the original and return a copy of the script to the student.
   (Reference: Standards for Duration of Document Storage by National University Corporation Tohoku University: Exam scripts and reports for less than one year)
4. Students may receive an explanation of their examination results from the lecturer in charge within 2 weeks of the announcement of the examination result by requesting the Academic Affairs Division. However, if there is a justifiable reason for not doing so within this period, the students may receive an explanation even after the request period has elapsed, as long as it is within a one-year storage period.
5. The Academic Affairs Division shall report to the Academic Affairs Committee when they receive a request for an explanation of their examination results from students. The Academic Affairs Committee shall request the lecturer in charge to explain the examination results to the requested students based on the request.
6. The lecturer in charge shall report to the Academic Affairs Committee on the content of the explanation and the results after explaining it to the students.
7. If there is an appeal against the examination results, students may appeal to the head of the Academic Affairs Committee through the Academic Affairs Division. However, if there is a justifiable reason for not doing so within this period, the students may receive an explanation even after the request period has elapsed, as long as it is within a one-year storage period.
8. If there is an appeal against the head of the Academic Affairs Committee, a review committee shall be set up with a few members from the Academic Affairs Committee to review the details of the appeal.

5. Agreement on the calculation method for course credits for the School of Science and Graduate School of Science

Established November 22, 2020
Undergraduate Faculty Committee/Graduate School Committee

1 It is stipulated that one credit of courses offered by the School of Science and Graduate School of Science is equivalent to 45 hours of study time, and details are as follows.

(i) One credit shall consist of 15 to 30 hours of classes for lectures and seminars.
(ii) One credit shall consist of 30 to 45 hours of experiments, training, and practical skills.
(iii) One credit in (i) using more than two teaching methods shall be determined by the number of appropriate hours based on the criteria outlined in the previous paragraph.

2 Notwithstanding the provisions of the previous paragraph, appropriate credits shall be given to the courses for graduation theses, graduation research, graduation projects, and dissertations.
The number of credits shall be determined by taking into consideration the necessary studies.

Supplementary Provisions
This agreement shall come into effect on April 1, 2024.

Regulations on Tohoku University Academic Degrees

January 1, 1955
Established

(Purpose)

Article 1 Degrees that Tohoku University (hereinafter referred to as the "University") confers upon students pursuant to the provision of Article 13, Paragraph 1 of the Degree Regulations (Ordinance of the Ministry of Education, Science and Culture No. 9 of 1953) shall be as provided for in these Regulations, in addition to the provisions of the Tohoku University Faculty General Rules (established on December 18, 1952), and those of the Tohoku University Graduate School General Rules (established on November 16, 1953).

(Degrees)

Article 2 (1) Degrees that the University confers upon students shall be bachelor's degrees, master's degrees, doctoral degrees, and professional degrees.

(2) In conferring a bachelor's degree, the title of the relevant major field shall be appended in accordance with the following categorization:

Faculty of Arts and Letters: Degree of Bachelor (Literature)
Faculty of Education: Degree of Bachelor (Education)
School of Law: Degree of Bachelor (Law)
Faculty of Economics: Degree of Bachelor (Economics)
Faculty of Science: Degree of Bachelor (Science)
School of Medicine: Degree of Bachelor (Medicine, Nursing Sciences, or Health Sciences)
School of Dentistry: Degree of Bachelor (Dentistry)
Faculty of Pharmaceutical Sciences: Degree of Bachelor (Pharmaceutical Sciences, or Pharmacy)
School of Engineering: Degree of Bachelor (Engineering)
Faculty of Agriculture: Degree of Bachelor (Agricultural Science)

(3) In conferring a master's degree, the title of the relevant major field shall be appended in accordance with the following categorization:

Graduate School of Arts and Letters: Degree of Master (Literature)
Graduate School of Education: Degree of Master (Education, or Educational Informatics)
Graduate School of Law: Degree of Master (Law)
Graduate School of Economics and Management: Degree of Master (Economics, or Business Management)
Graduate School of Science: Degree of Master (Science)
Graduate School of Medicine: Degree of Master (Medical Sciences, Disability Sciences, Nursing Sciences, Health Sciences, or Public Health)
Graduate School of Dentistry: Degree of Master (Oral Sciences)
Graduate School of Pharmaceutical Sciences: Degree of Master (Pharmaceutical Sciences)
Graduate School of Engineering: Degree of Master (Engineering)
Graduate School of Agricultural Science: Degree of Master (Agricultural Science)
Graduate School of International Cultural Studies: Degree of Master (International Cultural Studies)
Graduate School of Information Sciences: Degree of Master (Information Sciences)
Graduate School of Life Sciences: Degree of Master (Life Sciences)
Graduate School of Environmental Studies: Degree of Master (Environmental Studies)
Graduate School of Biomedical Engineering: Degree of Master (Biomedical Engineering)

(4) In conferring a doctoral degree pursuant to the provision of Article 4 (1), the title of the relevant major field shall be appended in accordance with the following categorization:

Graduate School of Arts and Letters: Degree of Doctor (Literature)
Graduate School of Education: Degree of Doctor (Education, or Educational Informatics)

Graduate School of Law: Degree of Doctor (Law)
Graduate School of Economics and Management: Degree of Doctor (Economics, or Business Management)
Graduate School of Science: Degree of Doctor (Science)
Graduate School of Medicine: Degree of Doctor (Medicine, Disability Sciences, Nursing Sciences, or Health Sciences)
Graduate School of Dentistry: Degree of Doctor (Dentistry)
Graduate School of Pharmaceutical Sciences: Degree of Doctor (Pharmaceutical Sciences, or Pharmacy)
Graduate School of Engineering: Degree of Doctor (Engineering)
Graduate School of Agricultural Science: Degree of Doctor (Agricultural Science)
Graduate School of International Cultural Studies: Degree of Doctor (International Cultural Studies)
Graduate School of Information Sciences: Degree of Doctor (Information Sciences)
Graduate School of Life Sciences: Degree of Doctor (Life Sciences)
Graduate School of Environmental Studies: Degree of Doctor (Environmental Studies)
Graduate School of Biomedical Engineering: Degree of Doctor (Biomedical Engineering)

(5) In addition to the provisions of the preceding Article 2 (3) and (4), when a master's degree or doctoral degree is conferred, the title of the relevant major field may be appended as "Degree of Master (Academic Field)" or "Degree of Doctor (Academic Field)."

(6) In conferring a doctoral degree pursuant to the provision of Article 4 (2), the title of the relevant major field shall be appended, and the provisions of the preceding Article 2 (4) and (5) shall apply mutatis mutandis to such title.

(7) Professional degrees to be conferred pursuant to the provision of Article 4-2 shall be as follows:
Graduate School of Law: Degree of Master in Public Law and Policy (Professional Degree), or Juris Doctor (Professional Degree)
Graduate School of Economics and Management: Degree of Master in Accountancy (Professional Degree)

(Requirements for Conferral of Bachelor's Degrees)

Article 2-2 (1) A bachelor's degree shall be conferred upon a person who graduated from the University.

(2) In addition to the provision of the preceding Article 2-2 (1), the conferral of bachelor's degrees shall be prescribed separately.

(Requirements for Conferral of Master's Degrees)

Article 3 A master's degree shall be conferred upon a person who has completed a master's course, or the first two years of a doctoral course (hereinafter collectively referred to as a "Master's Course, etc."), offered by a graduate school of the University.

(Requirements for Conferral of Doctoral Degrees)

Article 4 (1) A doctoral degree shall be conferred upon a person who has completed a doctoral course offered by a graduate school of the University.

(2) In addition to the provision of the preceding Article 4 (1), a doctoral degree may be conferred upon a person who has not gone through a doctoral course, provided that such person has passed the review of his/her doctoral dissertation, and that his/her academic abilities are confirmed as at least equivalent to those of doctoral course graduates.

(Requirements for Conferral of Professional Degrees)

Article 4-2 A professional degree shall be conferred upon a person who completed a professional degree program offered by a graduate school of the University.

(Submission of Academic Dissertations by Persons in Graduate Courses)

Article 5 (1) An academic dissertation (or research results in the case where the person concerned is to be evaluated on the basis of the results of his/her research on a specific topic in a Master's Course, etc.; the same shall apply hereinafter) of a person enrolled in a graduate course of the University (except for professional degree programs) shall be submitted to the dean of his/her graduate school.

(2) Upon receipt of such academic dissertation in the preceding Article 5 (1), the dean of the receiving graduate school shall refer it to the Faculty Meeting or Graduate School Committee (hereinafter referred to as the "Faculty Meeting, etc.") for evaluation of the person concerned to make a decision as to whether a degree should be awarded to him/her.

(Application for Degree Conferral by a Person without completing a Graduate Course)

Article 6 (1) A person who intends to apply for conferral of a degree in accordance with the provision of Article 4 (2) (hereinafter referred to as a "Degree Applicant") shall submit an degree application form with a doctoral dissertation, a curriculum vitae, a dissertation index, a dissertation abstract, and an academic dissertation review fee, and with the title of the major field associated with the contents of his/her doctoral dissertation specified, to the President of the University through the dean of the graduate school concerned with the application.

(2) The amount of the academic dissertation review fee shall be 150,000 yen per case; provided, however, that the amount shall be 75,000 yen per case in the case where the Degree Applicant was enrolled in an undergraduate school or graduate school of the University (except for persons whose enrollment was based on the status as a Credited Auditor, Special Auditing Student, Pre-Undergraduate Education Recipient, Special Research Student, or Research Student), or is or was an employee of the University (meaning an employee under Article 2 (1) of the Work Rules for Employees at National University Corporation Tohoku University [Rule No. 46 of 2004] or a Fixed-Term Employees under Article 2 of the Work Rules for Fixed-Term Employees at National University Corporation Tohoku University [Rule No. 26 of 2009] [except for Visiting Research Scholars [meaning those prescribed in Article 6 (2) of the same Rules]; the same shall apply hereinafter).

(3) Upon receipt of the application in Article 6 (1), the dean of the receiving graduate school shall transfer the degree application form to the President of the University, and also refer the application to the Faculty Meeting, etc. for evaluation of it to make a decision as to whether the degree should be awarded to the Degree Applicant.

(Academic Dissertation)

Article 7 (1) The academic dissertation prescribed in Article 5 (1) and Article 6 (1) (hereinafter an "Academic Dissertation") shall be limited to one paper; provided, however, that other papers may be attached thereto as references.

(2) The submission of any duplicate copies or translated copies of an Academic Dissertation, or any models, specimens, etc. may be ordered as may be necessary for review.

(Return of Academic Dissertations and Academic Dissertation Review Fee)

Article 8 Received academic dissertations or academic dissertation review fees shall not be returned for any reason.

(Reviewers)

Article 9 (1) In the case where the evaluation as to whether a degree should be awarded to a person pursuant to the provision of Article 5 (2) or Article 6 (3) is referred to the Faculty Meeting, etc., the Faculty Meeting, etc. shall appoint at least two reviewers from among full-time professors at the relevant graduate school, and/or graduate school faculty members who are full-time professors assigned to collaborative courses set under the graduate school concerned, or assigned to research divisions, etc., such as research institutes, that constitute part of the graduate school concerned on the basis of Article 2 (1) of the Regulations on Organizational Management of Tohoku University Graduate School. Thereafter, the Faculty Meeting, etc. shall delegate such reviewers to review the Academic Dissertation of the person concerned, and to arrange the person's final examination or confirm his/her academic abilities.

(2) Notwithstanding the provision of the preceding Article 9 (1), when finding it necessary, the Faculty Meeting, etc. may delegate the University's graduate school faculty members, etc. other than the reviewers in the preceding Article 9 (1) to serve as reviewers to implement the review of an Academic Dissertation,

and the arrangement of the final examination or the confirmation of academic abilities.

(3) Notwithstanding the provision of Article 9 (1), when finding it necessary, the Faculty Meeting, etc. may delegate the review of an Academic Dissertation to faculty members at other graduate schools, research institutes, etc.

(Review Period)

Article 10 The review of a doctoral dissertation, and the final examination and/or academic ability confirmation in relation to the conferral of a doctoral degree shall be completed in a manner that a decision as to whether a doctoral degree should be awarded to the person concerned can be made within one year of receipt of his/her doctoral dissertation or application for such conferral; provided, however, that this period may be extended through deliberation by the Faculty Meeting, etc., if there are special grounds for such extension.

(Interviews)

Article 10-2 For the review of a doctoral dissertation of a person who has applied for the conferral of a degree in accordance with the provision of Article 4 (2), an interview shall be held, unless the Faculty Meeting, etc. find special grounds for omitting such interview.

(Final Examination)

Article 11 After the completion of review of an Academic Dissertation, the final examination shall be conducted in an oral or written form, and pertain centrally to the Academic Dissertation and also to subjects connected thereto.

(Method of Academic Ability Confirmation)

Article 12 (1) The confirmation of academic abilities shall be carried out in relation to subjects in the major field associated with the relevant doctoral dissertation, and (a) foreign language(s).

(2) Notwithstanding the provision of the preceding Article 12 (1), the confirmation of academic abilities may be carried out only in relation to subjects in the major field associated with the doctoral dissertation concerned, or may be carried out as separately prescribed, if the Faculty Meeting, etc. find special grounds for such manner of confirmation.

(Omission of Review)

Article 12-2 Reviewers shall omit the final examination and academic ability confirmation in cases where the person concerned fails in the review of his/her Academic Dissertation.

(Reporting by Reviewers)

Article 13 Upon completion of a review, the reviewers shall immediately report the results of such review to the Faculty Meeting, etc.

(Resolution of Degree Conferral)

Article 14 The conferral of a degree shall require the approval of at least two-thirds of the participants in the Faculty Meeting, etc.

(Reporting by the Dean of the Graduate School)

Article 15 (1) In cases where the Faculty Meeting, etc. pass a resolution in favor of awarding a degree to a person, the dean of the relevant graduate school shall report to the President of the University a summary of the results of the Academic Dissertation review, and the final examination or academic ability confirmation, and any other relevant details.

(2) In cases where, with regard to an applicant for conferral of a degree pursuant to the provision of Article 4 (2), the Faculty Meeting, etc. pass a resolution against awarding a degree to such applicant, the dean of the relevant graduate school shall report to the President of the University on a summary of the results of the doctoral dissertation review and academic ability confirmation; provided, however, that if the confirmation of academic abilities has not been implemented pursuant to the provision of Article 12-2, it is not necessary to report a summary of the confirmation results.

(Conferral of Degrees)

Article 16 (1) When approving a person as qualified to receive a degree on the basis of the report prescribed in the provision of Article 15 (1), the President of the University shall confer a degree upon the person.

(2) When determining a person as not qualified to receive a degree on the basis of the report prescribed in the provision of Article 15 (2), the President of the University shall notify the person to that effect.

(Publication of Dissertation Abstracts, etc.)

Article 17 Upon conferring a doctoral degree pursuant to the provision of Article 16 (1), the President of the University shall publish an abstract of the contents of the dissertation associated with the conferral of the doctoral degree concerned, and a summary of the results of the relevant dissertation review, through the Internet within three months of the day of the conferral.

(Publication of Academic Dissertations)

Article 18 (1) Upon receipt of a doctoral degree, the recipient shall publish the full text of his/her doctoral dissertation within one year of the day of conferral of the degree, unless the recipient has already published the text prior to the conferral.

(2) Notwithstanding the provision of the preceding Article 18 (1), under unavoidable circumstances, the recipient of a doctoral degree may publish an abstract of his/her doctoral dissertation in lieu of its full text, upon obtaining the approval of the dean of the relevant graduate school; in this case, the dean shall make the full text of the dissertation available for viewing upon request.

(3) The publication by the recipient of a doctoral degree pursuant to the preceding Article 18 (1) and (2) shall be carried out through the Internet as separately prescribed.

(4) In publishing a doctoral dissertation pursuant to the provision of Article 18 (1), the dissertation shall specify, “Academic Dissertation (Doctoral) Reviewed by Tohoku University”; in publishing an abstract of a doctoral dissertation pursuant to the provision of Article 18 (2), the abstract shall specify, “Abstract of an Academic Dissertation (Doctoral) Reviewed by Tohoku University.”

(Revocation of Degree Conferral)

Article 19 (1) In cases where the recipient of a degree falls under any of the following items, the President of the University shall, through deliberation by the Faculty Meeting, etc. and the Academic Affairs Council, revoke the already conferred degree, require the recipient to return his/her degree certificate, and announce this revocation:

(i) Where the fact becomes evident that the receipt of the degree was based on an improper method; or

(ii) Where the recipient of the degree has conducted himself/herself in a manner that tarnishes the honor of the degree.

(2) In cases where the Faculty Meeting, etc. deliberate as prescribed in the preceding Article 19 (1), the provision of Article 14 shall apply mutatis mutandis.

(Degree Certificate and Documents Related to Application for Degree Conferral)

Article 20 The formats of degree certificates and documents related to degree conferral application shall be as specified by Appended Forms 1 to 8.

Supplementary Provisions

(Omitted)

Supplementary Provisions (Revision: March 29, 2018, Rule No. 56)

1. These Regulations shall come into force on April 1, 2018.

2. Notwithstanding the revised provisions of Article 2 (3) and (4), the titles of major fields to be appended to the degrees of persons who were admitted, or who proceeded or transferred, to the Graduate School of Education, or the Graduate School of Educational Informatics Education Division, in or prior to academic year 2017 shall continue to conform to the provisions then in force.

3. The provisions of Article 5, Article 6 (1) and (3), Article 15, and Article 18 (2) before revision by these

Regulations shall continue to be effective while the Graduate School of Educational Informatics Education Division remains in existence on the basis of Supplementary Provision 2. of the Regulations to Partially Revise Tohoku University Graduate School General Rules (Rule No. 54 of 2018).

Regulations on Tohoku University Research Students

May 15, 1963
Established

Article 1 These Regulations prescribe the admission, types, terms of study, and other relevant details of Research Students at Tohoku University (hereinafter referred to as the “University”).

Article 2 In cases where a person applies to conduct research on a special topic at the University, such person may, through selection processes, be permitted to be admitted as a Research Student to a graduate school, an undergraduate school, a research institute, one of the organizations prescribed in Article 20 (1) of the Regulations on Management of Organization at National University Corporation Tohoku University (Rule No. 1 of 2004; hereinafter referred to as the “Regulations on Management of Organization”), one of the Inter-Department Institutes for Education and Research, etc., one of the centers, etc. prescribed in Articles 22 to 27 of the Regulations on Management of Organization, Advanced Institute for Materials Research, or Frontier Research Institute for Interdisciplinary Sciences, provided that such admission will not pose any obstacle.

Article 3 Research Students shall be categorized into the following three types.

Undergraduate Research Student: Person who engages in research with a faculty member at the relevant undergraduate or graduate school acting as an Academic Advisor

Research Institute Research Student: Person who engages in research with an Academic Advisor who is a faculty member at a research institute, one of the organizations prescribed in Article 20 (1) of the Regulations on Management of Organization, one of the Inter-Department Institutes for Education and Research, etc., one of the centers, etc. prescribed in Articles 22 to 27 of the Regulations on Management of Organization, Advanced Institute for Materials Research, or Frontier Research Institute for Interdisciplinary Sciences.

Graduate Research Student: Person who engages in research with a faculty member at the relevant graduate school acting as an Academic Advisor

Article 4 (1) A year of study for a Research Student shall start from April 1 of a year and end on March 31 of the following year.

(2) A year of study shall be divided into the following two semesters:

First semester: from April 1 to September 30

Second semester: from October 1 to March 31 of the following year

Article 5 The timing of enrollment of a Research Student shall be at the beginning of a semester, unless there are special circumstances.

Article 6 A person who is eligible to apply for admission as an Undergraduate Research Student or Research Institute Research Student shall fall under one of the following items:

(i) A person who graduated from a university;

(ii) A person who graduated from a junior college or equivalent school (including a person who completed a First Phase Course of professional graduate school), and who studied a relevant discipline; or

(iii) A person who is found to have academic abilities at least equivalent to those of the persons prescribed in the preceding two items by a graduate school, an undergraduate school, a research institute, one of the organizations prescribed in Article 20 (1) of the Regulations on Management of Organization, one of the Inter-Department Institutes for Education and Research, etc., one of the centers, etc. prescribed in Articles 22 to 27 of the Regulations on Management of Organization, Advanced Institute for Materials Research, or Frontier Research Institute for Interdisciplinary Sciences.

Article 7 (1) A person who is eligible to apply for admission as a Graduate Research Student shall fall under one of the following items:

(i) A person who holds a master’s degree;

(ii) A person who graduated from a university course in medicine, dentistry, pharmacy, or veterinary medicine; or

(iii) A person who is found to have academic abilities at least equivalent to those of the persons prescribed in the preceding two items by a graduate school

(2) In addition to the provision of the preceding Article 7 (1), the eligibility of foreign nationals to apply for admission as Graduate Research Students shall be as prescribed by each Graduate School, etc.

Article 8 (1) A person who applies for admission as a Research Student shall pay an application fee with his/her application form.

(2) The amount of the application fee in the preceding Article 8 (1) shall be as specified in Appended Table.

Article 9 (1) A person whose admission as a Research Student has been permitted shall pay an admission fee by the prescribed due date.

(2) The permission of admission of a person who has failed to pay the admission fee under the preceding Article 9 (1) by the prescribed due date shall be revoked.

(3) The amount of the admission fee in Article 9 (1) shall be as specified in Appended Table.

Article 10 Any paid application fee or admission fee shall not be refunded.

Article 11 The term of study for Research Students shall be within one year; provided, however, that an extension of the term of study may be permitted, if continuous enrollment is requested.

Article 12 (1) In cases where a Graduate Research Student who is a foreign national applies to audit a course subject or more of his/her choice in connection with his/her research among the course subjects offered by the University's graduate schools (including related subjects), such auditing may be permitted through selection processes, provided that such auditing will not obstruct other students' study.

(2) A Graduate Research Student who has been permitted to audit course subjects as prescribed in the preceding Article 12 (1) may acquire credits for the course subjects that such Graduate Research Student has audited, by taking the examinations designated for such course subjects.

(3) A request made by a Graduate Research Student who has been permitted to audit course subjects as prescribed in Article 12 (1) for any increase or reduction in the number of his/her course subjects may be permitted.

Article 13 (1) In cases where a Research Student requests the certification of matters relating to his/her research, a research certificate may be issued.

(2) In cases where a Graduate Research Student who has been permitted to audit course subjects as prescribed in Article 12 (1) requests the certification of the course subjects that he/she has audited, or the credits that he/she has acquired, a certificate of auditing, or a certificate of the acquisition of credits, may be issued.

Article 14 (1) Any Research Student who violates any regulations or orders of the University, or acts contrary to his/her duties as a Research Student, shall be subject to disciplinary action.

(2) The available types of disciplinary action shall be reprimand and expulsion.

Article 15 A Research Student who intends to withdraw from the University during his/her term of study shall apply for permission for such withdrawal with the reason therefor.

Article 16 (1) The monthly amount of tuition for Research Students shall be as specified in Appended Table, which shall be paid in advance for each three months from the months of their admission; provided, however, that in the case of any fractional months less than three months in the year of study, the tuition for such fractional months shall be paid in advance.

(2) Graduate Research Students who have been permitted to audit course subjects as prescribed in Article 12 (1) shall pay the tuition for the course subjects that they are to audit, in addition to the tuition prescribed in the preceding Article 16 (1).

(3) The amount of the tuition prescribed in the preceding Article 16 (2) shall be as specified in Appended Table, for classes equivalent to each credit, and shall be paid in advance for the relevant semester prior to

the beginning of classes in each semester.

(4) Paid tuition shall not be refunded.

(5) The amount of tuition to be paid, due dates, places, and other matters necessary for the payment of tuition shall be specified at the designated location.

Article 17 No application fee, admission fee, or tuition shall be collected with regard to government-financed or sponsored foreign students based on the Implementation Guideline for the Government-Financed or Sponsored Foreign Student System (Ruling by the Minister of Education, Science and Culture, dated March 31, 1954), or international students who are covered by university-level exchange agreements on the basis of the Implementation Guidelines for Non-collection of Tuition, etc. for International Students based on University-level Exchange Agreements (Ruling by the Director of Science and International Affairs Bureau, dated April 11, 1991), notwithstanding the provisions of Article 8, Article 9 (1), and Article 16 ()1 and (3), respectively.

Article 18 A Research Student shall be expelled if he/she failed to pay his/her tuition, and has still failed to pay it even after having received a demand.

Article 19 In addition to the provisions of these Regulations, provisions pertaining to students shall apply mutatis mutandis to Research Students.

Supplementary Provisions

(Omitted)

Supplementary Provision (Revision: April 25, 2017, Rule No. 85)

These Regulations shall come into force on April 25, 2017, and the revised provisions of Articles 2 and 3, and Article 6 (iii) shall apply on and after April 1, 2017.

Supplementary Provision (Revision: May 8, 2018, Rule No. 111)

These Regulations shall come into force on May 8, 2018, and the revised provisions of Articles 2 and 3, and Article 6 (iii) (as for deleting “or”, replacing “Article 29” by “Article 27”, and adding “Advanced Institute for Materials Research, or Frontier Research Institute for Interdisciplinary Sciences” to the listed institutions) shall apply on and after January 30, 2018, whereas the revised provisions of Articles 2 and Article 6 (iii) (as for deleting “the Educational Informatics Education Division, Educational Informatics Research Division”) and of Article 7 shall apply on and after April 1, 2018.

Supplementary Provision

These Regulations shall come into force on April 1, 2019

Appended Table

Category	Amount
Application fee	9,800 Yen
Admission fee	84,600 Yen
Tuition prescribed in Article 16 (1)	29,700 Yen per month
Tuition prescribed in Article 16 (3)	14,800 Yen per credit

Further Information

1. Teaching Assistant (Extract of Detailed rules)

(1) Purpose

By allowing promising graduate students to perform as teaching assistants, we aim to enrich their University education and provide an opportunity for them to train themselves as an educational supervisor, and in addition, to improve their student life through the provision of a stipend.

(2) Qualification

Those who are qualified to be hired as Teaching Assistants must hold one of the following positions.

①Graduate students

②Recipients of the Japan Society for the Promotion of Science Research Fellowship for Young Scientists

③Research Fellows (Limited to part-time employee stipulated in Clause 2 in Work Rules for Part-Time Employees at National University Corporation Tohoku University (Article 49, 2004). This applies also to the following.)

④Those who are acknowledged by the relevant department's Head to have qualifications equal to or above those of the Doctoral Course Student

(3) Duties

Teaching Assistants shall perform assistant work necessary for educational activities on experiments, practical trainings, seminars, etc. toward undergraduate students and the first two years of a doctoral course (including master courses) .

The assistant work on experiments, practical trainings, seminars, etc. must be carried out as long as it does not interfere with the students own educational and research activities.

(4) Position

Teaching Assistants shall be considered part-time employee members.

Hourly employment

(5) Term

The term of employment shall be within the fiscal year in which the Teaching Assistant is employed.

Duration of one academic year

(6) Working Hours

The working hours shall have the following limits depending on the following categories.

①Graduate Students: 30 hours a week

②Those who receive financial incentive stipulated in Internal Regulations Regarding Tohoku University Graduate School Leading Program Financial Incentive, etc.:19 hours a week

③Those who receive financial incentive stipulated in Internal Regulations Regarding Tohoku University Academia-Industry Collaborating Graduate Programs Research and Education Supporting Fund, etc.: 19 hours a week

④Recipients of the Japan Society for the Promotion of Science Research Fellowship for Young Scientists: 19 hours a week

⑤Research Fellows: 38 hours 45 minutes a week including the working hours assigned for work as Researcher Fellows

(7) Pay

Teaching Assistants shall receive an hourly rate of pay to be provided for within the budget.

2. Research Assistant

(Extract of Detailed rules)

(1) Purpose

In order to have promising graduate students in the doctoral course, etc. participate in research projects, etc. carried out in each school in Tohoku University, and for assistant researchers to solidify and enhance the research assistance system and to nurture and secure young researchers.

(2) Qualification

Those who are qualified to be hired as Research Assistants must hold one of the following positions.

①Graduate students who are in a three year doctoral course (for Medicine and Dentistry students, master's and doctoral courses) (hereinafter referred to as “Doctoral Course Students”)

②Recipients of the Japan Society for the Promotion of Science Research Fellowship for Young Scientists

③Research Fellows (Limited to part-time employee stipulated in Clause 2 in Work Rules for Part-Time Employees at National University Corporation Tohoku University (Article 49, 2004). This applies also to the following.)

④Those who are acknowledged by the relevant department’s Head to have qualifications equal to or above those of the Doctoral Course Student

(3) Duties

Research Assistants shall perform assistant work necessary for research activities in order to effectively advance research projects, etc.

The assistant work must be carried out as long as it does not interfere with the students own research guidance or lectures.

(4) Position

Research Assistants shall be considered part-time employee members.

(5) Term

The term of employment shall be within the fiscal year in which the Research Assistant is employed.

(6) Working Hours

The working hours shall have the following limits depending on the following categories.

①Graduate Students: 30 hours a week

②Those who receive financial incentive stipulated in Internal Regulations Regarding Tohoku University Graduate School Leading Program Financial Incentive, etc.:19 hours a week

③Those who receive financial incentive stipulated in Internal Regulations Regarding Tohoku University Academia-Industry Collaborating Graduate Programs Research and Education Supporting Fund, etc.: 19 hours a week

④Recipients of the Japan Society for the Promotion of Science Research Fellowship for Young Scientists: 19 hours a week

⑤Research Fellows: 38 hours 45 minutes a week including the working hours assigned for work as Researcher Fellows

(7) Pay

Research Assistants shall receive an hourly rate of pay to be provided for within the budget.

3. Teaching License (omitted)

4. Announcement

(1) The Japan Society for the Promotion of Science Research Fellowship for Young Scientists

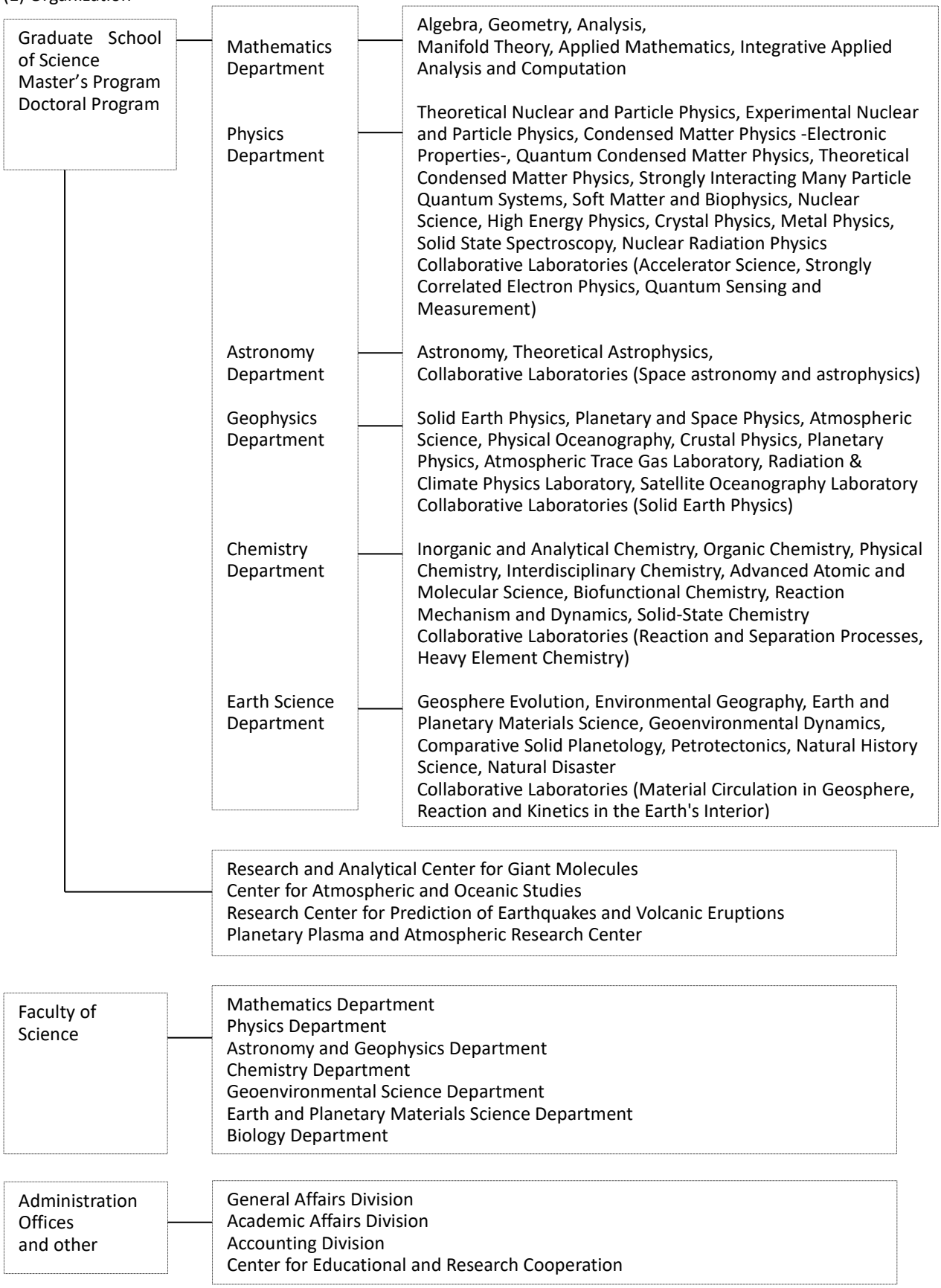
For detailed information, please refer to the website:
https://www.jsps.go.jp/

(2) Advisory Board

1. The Graduate School of Science organizes an advisory board, in addition to an academic advisor for all graduate students.
2. The advisory board should:
① give various aspects of academic instruction to each graduate student
② offer consultation and advice for school life as well
3. Each department has its own advisory board system; for detailed information, please contact the department office.

5. Organization and Faculty Members of School of Science

(1) Organization



(2) Faculty Members

Numbers in brackets ( ) are on-campus extensions.

Dean of Graduate School of Science Dean of Faculty of Science	Professor Nobuo TSUZUKI (Ext.7705)

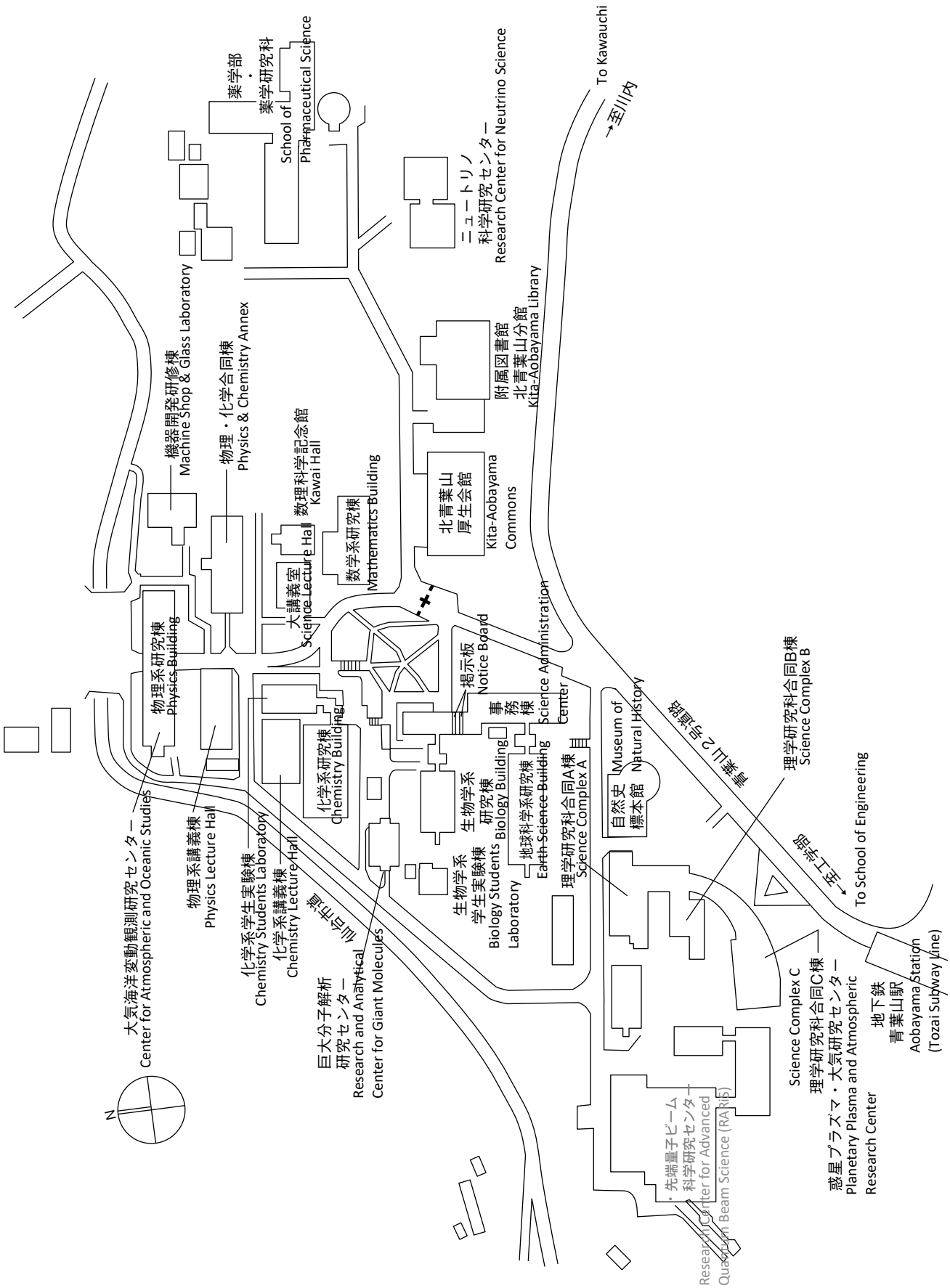
Undergraduate Department Chair

Department	Name	
Mathematics	Prof. Goro AKAGI	(Ext.6377)
Physics	Prof. Kenya OGUSHI	(Ext.5556)
Astronomy and Geophysics	Prof. Kazuyuki OMUKAI	(Ext.6502)
Chemistry	Prof. Yasushi KINO	(Ext.6596)
Geoenvironmental Science	Prof. Jun MUTO	(Ext.6627)
Earth Planetary Materials Science	Prof. Hiroaki OFUJI	(Ext.6658)
Biology	Prof. Ken-ichiro TSUTSUI	(Ext. 91-5047)

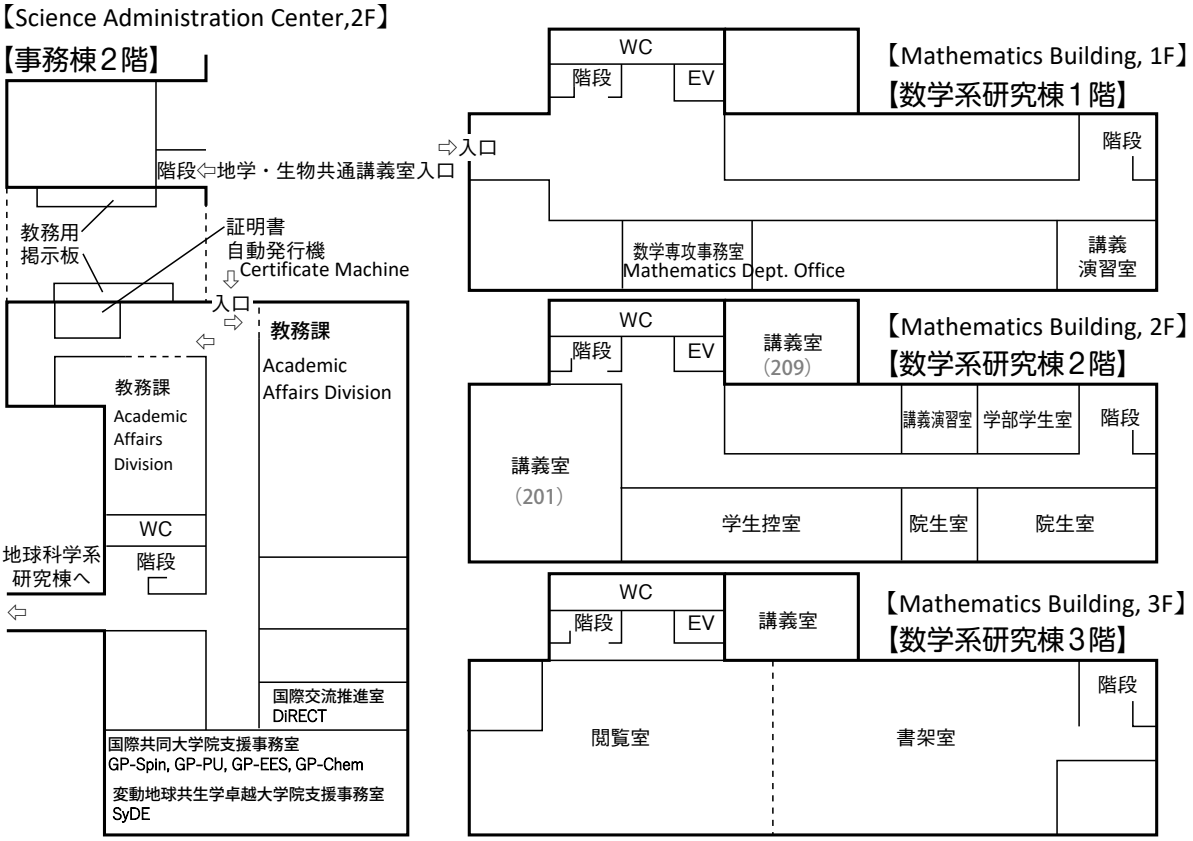
Graduate Department Chair

Department	Name	
Mathematics	Prof. Goro AKAGI	(Ext.6377)
Physics	Prof. Kenya OGUSHI	(Ext.5556)
Astronomy	Prof. Kazuyuki OMUKAI	(Ext.6502)
Geophysics	Prof. Yuto KATOH	(Ext.6516)
Chemistry	Prof. Yasushi KINO	(Ext.6596)
Earth Science	Prof. Jun MUTO	(Ext.6627)

6　北青葉山地区略図・建物略図　Kita-Aobayama Campus Map & Buildings



【Science Administration Center,2F】



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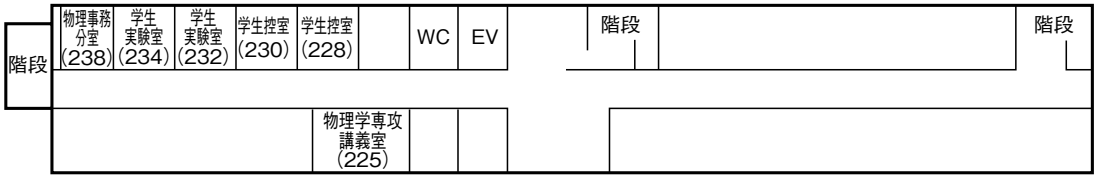

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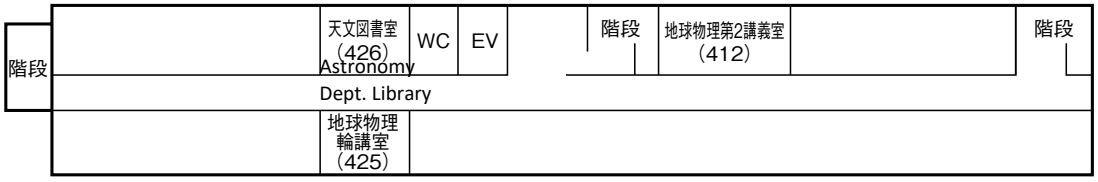

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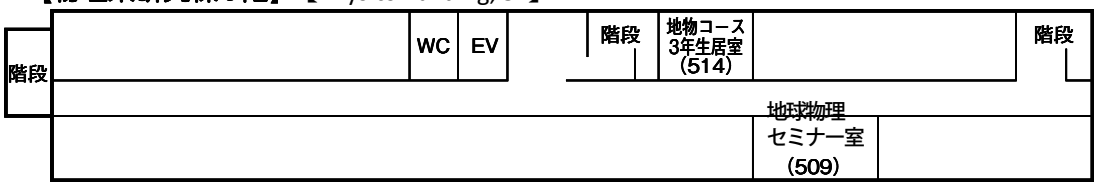

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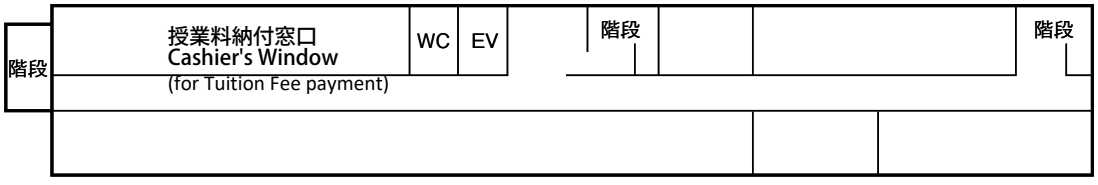

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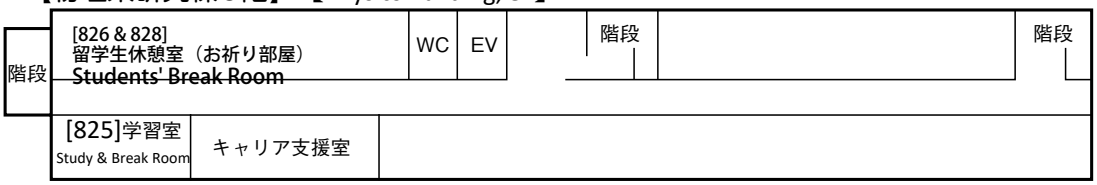

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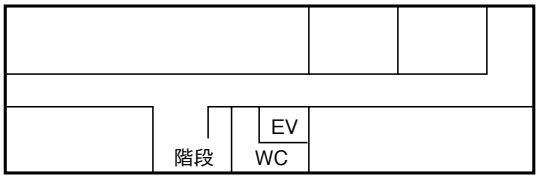

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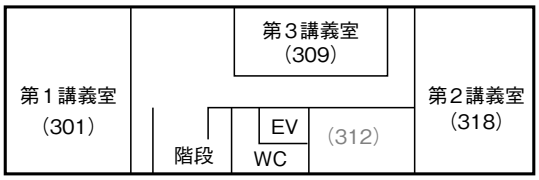
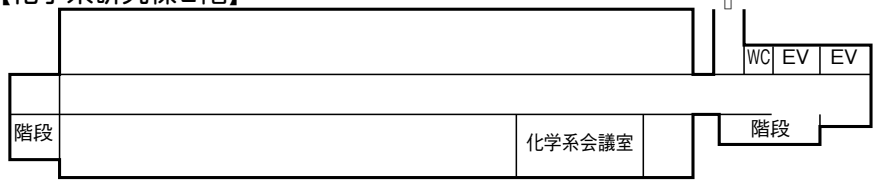


To the Chemistry Students Laboratory

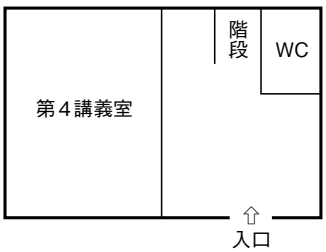
化学系学生実験棟へ

【化学系研究棟２階】【Chemistry Building, 2F】



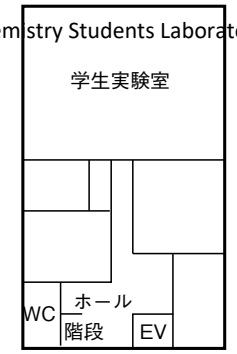
【Chemistry Lecture Hall】

【化学系講義棟１階】



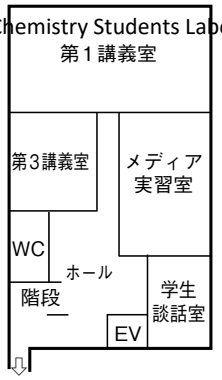
【化学系学生実験棟１階】

【Chemistry Students Laboratory, 1F】



【化学系学生実験棟２階】

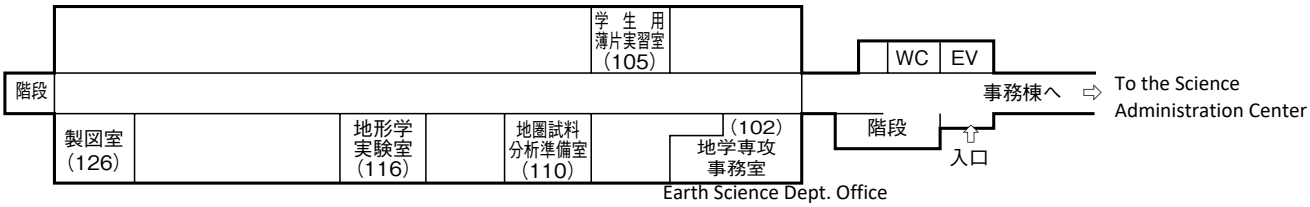
【Chemistry Students Laboratory, 2F】



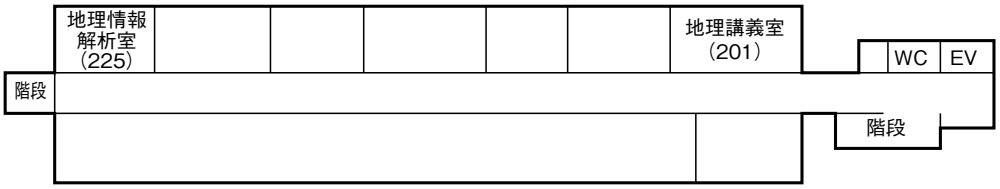
化学系研究棟へ

To the Chemistry Building

【地球科学系研究棟１階】【Earth Science Building, 1F】

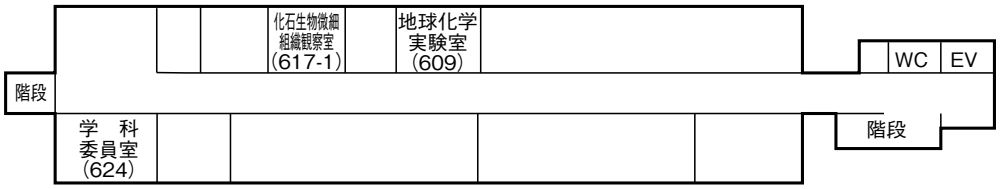


【地球科学系研究棟２階】【Earth Science Building, 2F】

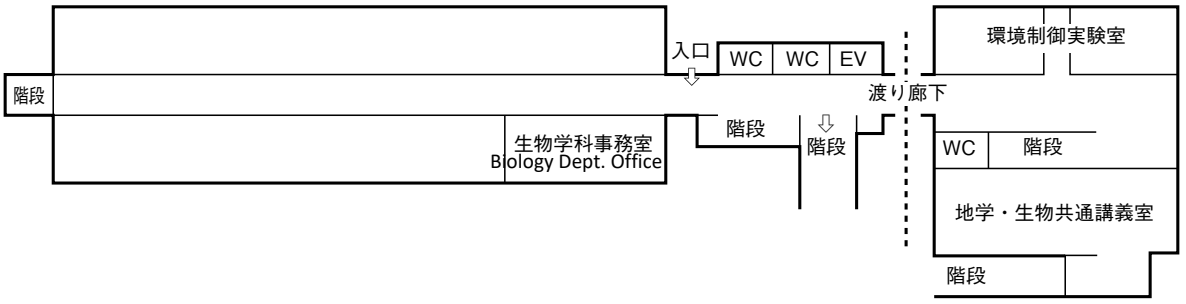


【地球科学系研究棟５階】【Earth Science Building, 5F】

【地球科学系研究棟６階】【Earth Science Building, 6F】

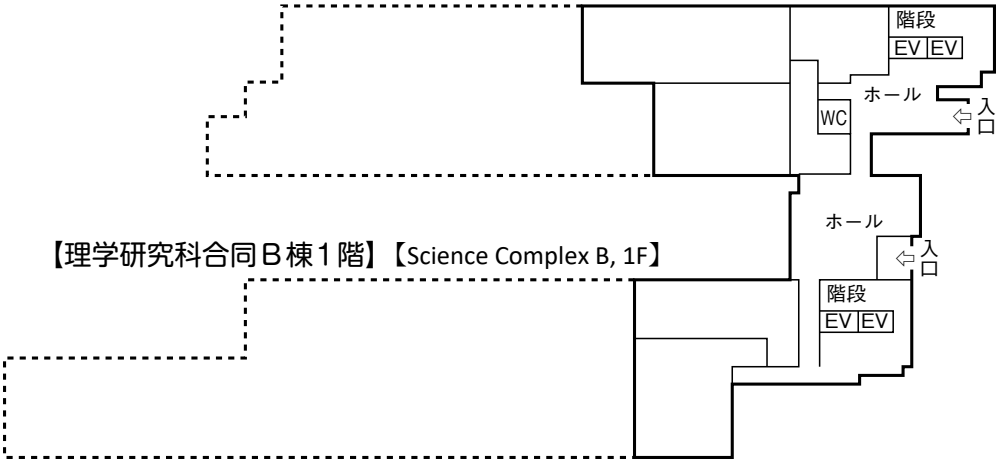


【生物学系研究棟１階】【Biology Building, 1F】



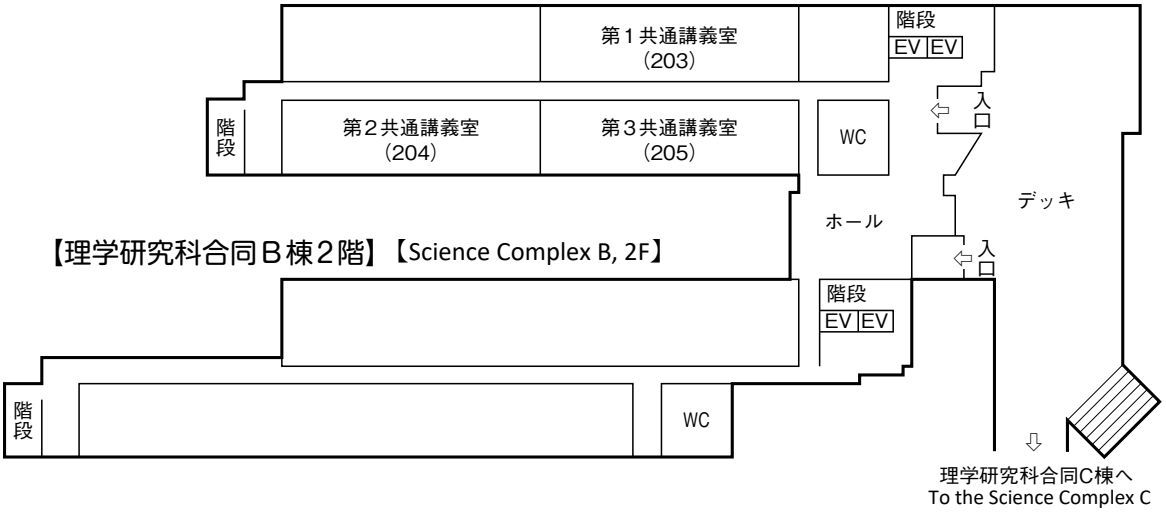
【事務棟３階】【Science Administration Center, 3F】

【理学研究科合同Ａ棟１階】【Science Complex A, 1F】



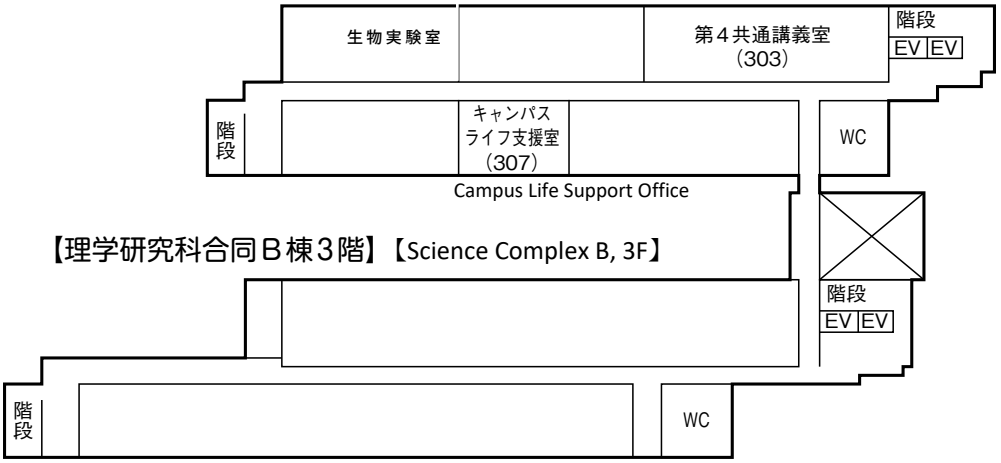
【理学研究科合同Ｂ棟１階】【Science Complex B, 1F】

【理学研究科合同Ａ棟２階】【Science Complex A, 2F】



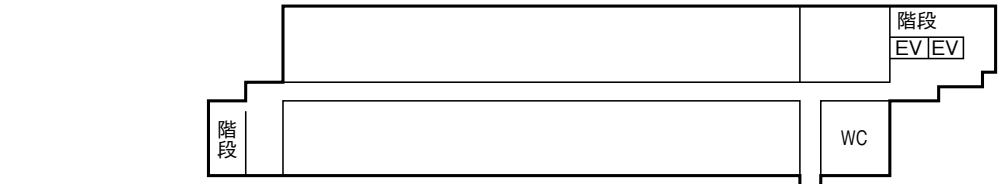
【理学研究科合同Ｂ棟２階】【Science Complex B, 2F】

【理学研究科合同Ａ棟３階】【Science Complex A, 3F】



【理学研究科合同Ｂ棟３階】【Science Complex B, 3F】

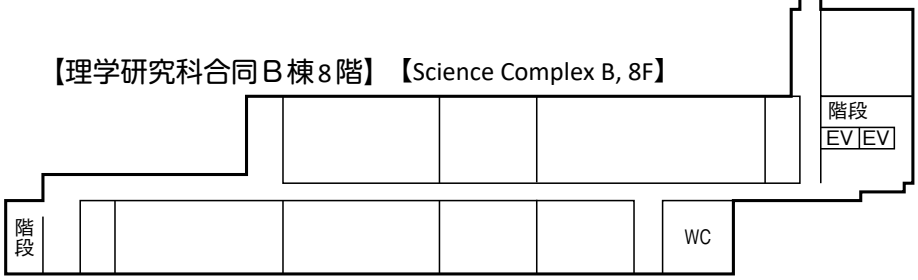
【理学研究科合同Ａ棟7階】【Science Complex A, 7F】



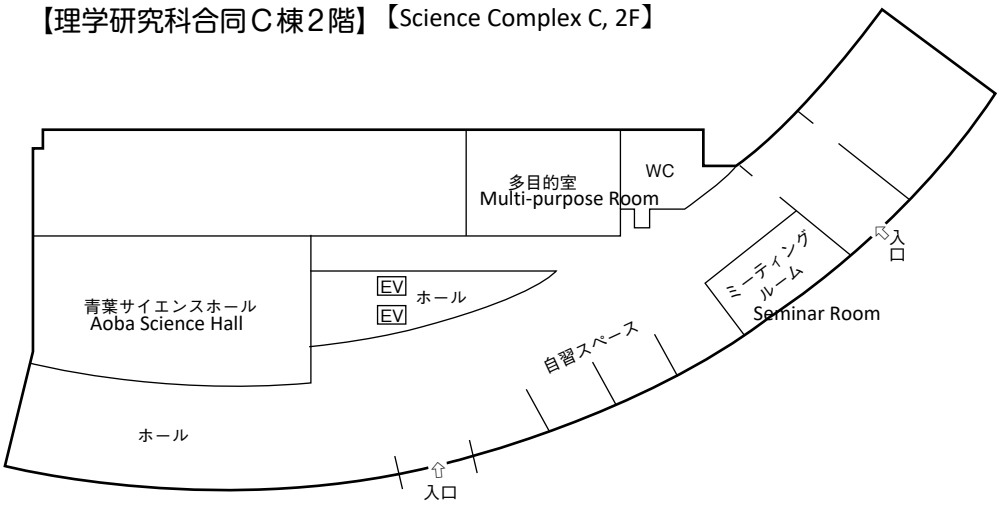
【理学研究科合同Ｂ棟7階】【Science Complex B, 7F】

【理学研究科合同Ａ棟8階】【Science Complex A, 8F】

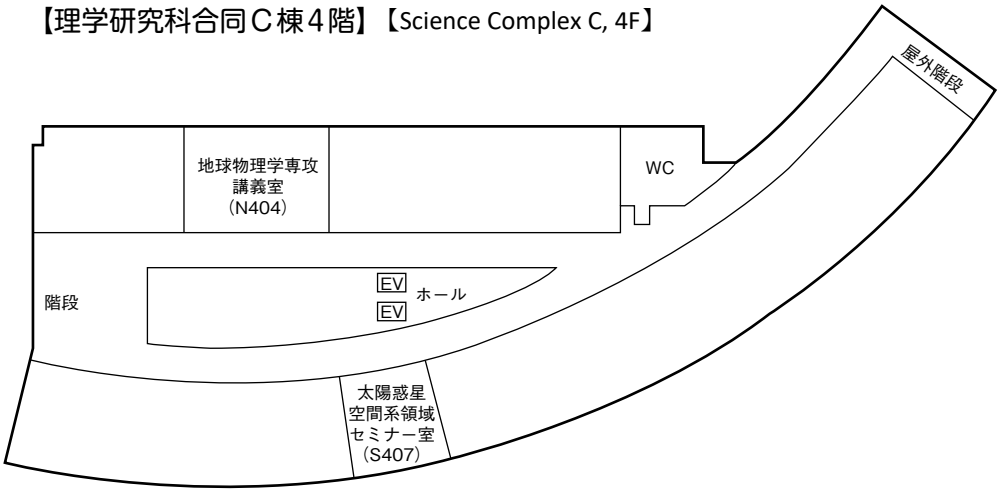
【理学研究科合同Ｂ棟8階】【Science Complex B, 8F】



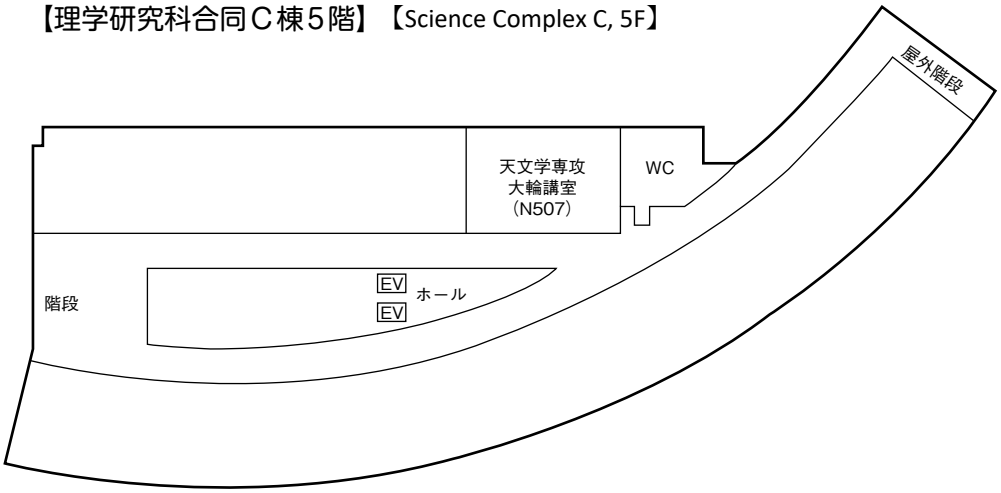
【理学研究科合同Ｃ棟２階】【Science Complex C, 2F】



【理学研究科合同Ｃ棟４階】【Science Complex C, 4F】



【理学研究科合同Ｃ棟５階】【Science Complex C, 5F】



<Miscellaneous: Facilities for students etc.>

○International Students Break Room & Prayer Room 留学生休憩室 & 礼拝室

On the Kita Aobayama Campus, two common usage rooms are available for international students.
Any international student of the School of Science can use the rooms without an appointment during the normal open hours. However, it's important to note that the rooms cannot be occupied for an extended period by an individual or a group.
The rooms can be used for prayer, but users are not allowed to organize or schedule particular religious meetings in the space.

International Students Break Room
Location: Physics Building (Room 826 & 828)
Open Hours: Monday-Friday 9:00 am-5:00 pm

Prayer Room
Location: Kita Aobayama Library (1st Floor at the Entrance Hall)
Open Hours: During the Semester: Monday-Friday 9:00 am-8:00 pm/During the Semester Break: Monday-Friday 9:00 am-5:00 pm

○Women's Break Room 女性休憩室

There are several women's break rooms available at the School of Science. The rooms are open for all women who belong to the School of Science and can be used for taking a break. This includes when feeling in a bad condition and when needing nursing a baby.
To use the rooms, registration is required and the procedure for updating the membership is necessary every academic year. The registration procedure and the details of the rooms are provided via e-mail etc. in each semester/year.
Please note that women's break room locations are confidential due to security reasons. You will be notified after registering.

Contact:
Campus Life Support Office
Email: sci-campuslife@grp.tohoku.ac.jp

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〒980−8578 仙台市青葉区荒巻字青葉6番3号

☎022−795−6351

[NOTE]
This is an unofficial translation edited by DiRECT for the reference of international students.
The official text is the Japanese version, and if there are any differences between the Japanese and English versions, the Japanese version always takes precedence.
Should you have any inquiry regarding this translation, please contact DiRECT.

DiRECT:

Division for International Research and Educational Cooperation, School of Science
2F, Science Administration Center [H-11] TEL: 022-795-5829
Email: direct@mail.sci.tohoku.ac.jp
URL: https://www.sci.tohoku.ac.jp/direct/english/

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