

**Graduate School of Science and Engineering
Master's Program
【Science Division】**

Application Guide for International Students

**October 2018 Enrollment
April 2019 Enrollment**

**May 2018
University of Toyama**

Admission Policy of Each Department

Each department of the Master's course of the Graduate School of Science and Engineering (Science Division) of the University of Toyama has set the following admission policy for suitable candidates.

Department of Mathematics

We aim at educating talented people who have competence in considering logically the mathematical structures of phenomena, competence in communication, and deep knowledge of mathematical sciences and its applications, and who can give a high-quality class with deep expert knowledge as teachers or can utilize mathematics to cope with problems as specialist personnel. The master's program for mathematics has set the following admission policy for suitable candidates:

- A person with an intellectual curiosity about mathematics and mathematical sciences, and with enthusiasm to learn voluntarily.
- A person with the capability of searching for subjects by flexible and accurate logical thinking.
- A person with mathematical basic scholarship, fundamental research capability, and capability to read and comprehend research papers.

Department of Physics

- A person with a strong curiosity about diverse natural phenomena
- A person with an inquisitive and aggressive mind to solve new problems
- A person who wants to contribute to the local community and international society through physics

Department of Chemistry

We aim at educating talented people who have skills of problem-setting and solving by themselves. The master's program for chemistry has set the following admission policy for suitable candidates:

- A person who is eager to equip oneself with broad, expert knowledge and techniques of advanced chemistry
- A person who is inquisitive about multidisciplinary science on the basis of his/her expert knowledge
- A person who is eager to conduct frontiers research in chemistry

Department of Biology

- A person who is interested in living organisms and life sciences
- A person who is eager to learn biology based on fundamental knowledge
- A person who aims to contribute to future society by biological knowledge and techniques
- A person who wants to contribute to the local community and international society through biology

Department of Earth Sciences

- A person who has acquired undergraduate scholastic ability
- A person who wants to conduct special research in Earth Sciences
- A person who wants to challenge unexplained problems
- A person who wants to contribute to the local community and international society through Earth Sciences

Department of Environmental Biology and Chemistry

- A person who wants to take up employment with taking advantage of sophisticated expertise
- A person who is interested in natural phenomena and environmental problems
- A person who wants to play an active role in the international community

Contents

Admission Examination for International Students

1. Admission quota 1
2. Eligibility for application 1
3. Selection methods 3

Common Items

1. Application period and ways of submission of application documents 4
2. Submission of application documents 4
3. Delivery of the examination admission ticket 5
4. Application documents 5
5. Remittance of the examination fee 6
6. Approval of the eligibility for application 6
7. Announcement of successful applicants 7
8. Admission procedures 7
9. Miscellaneous 8
10. Privacy policy 8

Overview of the Master’s Program

1. Departments and fields of education 9
2. Fields of education and academic advisors 11
3. Requirements for completion of the program 12
4. List of subjects and credits 13

Instructions for filling out the application documents

1. Overall 16
2. Application form, examination admission ticket, and photo ID card 16

Admission Examination for International Students

※ Please first consult the Admission Office (Educational Affairs Division) of the Faculty of Science, University of Toyama beforehand.

Contact address: Admission Office, Faculty of Science, University of Toyama

3190 Gofuku, Toyama 930-8555, Japan

FAX: +81-76-445-6550

E-mail: rikyoumu@adm.u-toyama.ac.jp

1. Admission quota

| Department | Quota | | | Related research centers |
|-------------------------------------|-----------------------------|-----------------------|------------------------------|----------------------------------|
| | First call for applications | | Second call for applications | |
| | October 2018 enrollment | April 2019 enrollment | April 2019 enrollment | |
| Mathematics | A few | A few | TBD | |
| Physics | A few | A few | | |
| Chemistry | A few | A few | | Hydrogen Isotope Research Center |
| Biology | A few | A few | | |
| Earth Sciences | A few | A few | | |
| Environmental Biology and Chemistry | A few | A few | | |

Note (1) Some fields of education may not launch the second call for applications if they fill their quota in the first call. Information for the second call will be published on the Faculty of Science web site in late September, 2018.

(2) Applicants who intend to study in the Hydrogen Isotope Research Center, select the Hydrogen Isotope Science of the Department of Chemistry as the first choice of the field of education in the application form.

2. Eligibility for application

Applicants must not possess Japanese citizenship and must fulfill one of the following criteria:

- ① A person who has graduated from a Japanese college, prior to admission to the Graduate School.
- ② A person who has received a bachelor degree in conformity with Article 104, Clause 4, of the School Education Law of Japan, prior to admission to the Graduate School.
- ③ A person who has completed a 16-year overseas school education course, prior to admission to the Graduate School.
- ④ A person who has completed a 16-year course of education in Japan through a correspondence course offered by an overseas educational institution, prior to admission to the Graduate School.
- ⑤ A person who has completed education at an institution in Japan that is recognized as equivalent to a university by a foreign country (limited to individuals who are recognized by a foreign educational system as having completed 16 years of education) and that is designated by the Minister of

Education, Culture, Sports, Science, and Technology of Japan (MEXT), prior to admission to the Graduate School.

- ⑥ A person who has completed a program of a foreign university or a foreign educational institution (limited to which its comprehensive progress of education and research have been evaluated by an external personnel certified by its government or its related agency, or an institution designated as equivalent by the Minister of MEXT) which requires more than three years to graduate and has been awarded a degree equivalent to a bachelor's degree, prior to admission to the Graduate School.
 - ⑦ A person who completed a specialized course at a vocational school (limited to courses with a duration of four years or more and that satisfy the conditions set by MEXT) designated by the Ministry after the date set by the Ministry, prior to admission to the Graduate School.
 - ⑧ A person who is designated by MEXT (February 7, 1953 Ministry of Education Notification No. 5)
 - ⑨ A person who has spent three years studying at a college prior to admission to the Graduate School, and was recognized by the Graduate School as having completed the prescribed number of credits with an excellent academic record.
 - ⑩ A person who has completed a 15-year overseas school education course prior to admission to the Graduate School, and was recognized by the Graduate School as having completed the prescribed number of credits with an excellent academic record.
 - ⑪ A person who was recognized by the Graduate School as having reached an academic level equivalent to or higher than that of university graduates, as verified by individual admission qualification screening, and was at least age 22, prior to admission to the Graduate School.
- ※ Applicants who intend to apply in accordance with the criteria ⑨～⑪ must submit in advance to an individual evaluation of their academic ability as described on page 6.

3. Selection methods

(1) Persons eligible to enroll are selected on the basis of the results of the oral examination and submitted documents. The examinees need not take a paper test.

(2) Date and subject of examination

First call for applications

| Date, time, subject Department | Date | Time | Subject of examination |
|--|--------------------------------|-------|------------------------|
| Mathematics | August 29 (Wednesday), 2018 | 9:30~ | Oral examination |
| Physics | | | |
| Chemistry | | | |
| Biology | | | |
| Earth Sciences | | | |
| Environmental Biology and Chemistry | | | |

Second call for applications

| Date, time, subject Department | Date | Time | Subject of examination |
|--|---------------------------------|--------|------------------------|
| Mathematics | January 30 (Wednesday), 2019 | 13:30~ | Oral examination |
| Physics | November 29 (Thursday), 2018 | 13:30~ | |
| Chemistry | | | |
| Biology | January 30 (Wednesday), 2019 | 13:30~ | |
| Earth Sciences | | | |
| Environmental Biology and Chemistry | | | |

※ Some fields of education may not launch the second call for applications if they fill their quota in the first call. Information for the second call will be published on the Faculty of Science web site in late September, 2018.

(3) Site for examination Faculty of Science, University of Toyama (3190 Gofuku, Toyama)

Common Items

1. Application period and ways of submission of application documents

| Division | Application period |
|---|--|
| First call for applications | July 23 (Monday)~July 27 (Friday), 2018 |
| Second call for applications ※Departments of Physics and Chemistry | October 29 (Monday)~November 2 (Friday), 2018 |
| Second call for applications ※Departments of Mathematics, Biology, Earth Sciences, and Environmental Biology and Chemistry | January 4 (Friday)~January 9 (Wednesday), 2019 |

※ Some fields of education may not launch the second call for applications if they fill their quota in the first call. Information for the second call will be published on the Faculty of Science web site in late September,2018.

◎Applicants are expected to consult the future supervisor about his/her educational and research policies.

- Application documents will be accepted at the campus during the application period (except for Saturdays, Sundays, and national holidays) from 9 am to 4 pm.
- If the applicant mails the application documents, enclose them in the designated envelope (出願用封筒 : Envelope for Application) and send by registered express mail during the period of application (as indicated by the postmark of a Japanese post office on the envelope).

The University provides consultation for applicants with a disability (specified by the Article 22-3, Enforcement Regulations for the School Education Law) that may require special arrangements for the entrance examination or in classes after enrollment. Please contact the Admission Office of the Faculty of Science, by one month before the beginning of the application period.

On the consultation, the Admission Office may require the submission of a document and a medical certificate with the following descriptions.

- The type and degree of disability of the applicant.
- The special arrangements for the entrance examination that the applicant needs.
- The special arrangements in classes that the applicant needs after enrollment.
- The state of daily life and other matters to be used as a reference.

2. Submission of application documents

Submit to: Admission Office, Faculty of Science, University of Toyama
3190 Gofuku, Toyama 930-8555, Japan

3. Delivery of the examination admission ticket

The examination admission ticket will be mailed to the address written on the envelope (application document ⑤). If the applicant does not receive the examination admission ticket by a week before the date of examination, please contact the Admission Office of the Faculty of Science.

4. Application documents

If the applicant is going to apply on both first and second calls, please ask for the application guide once again.

| | Documents | Remarks |
|---|--|---|
| ① | Application Form | Fill out the designated form. |
| ② | Certificate of (Expected) Bachelor's Degree | Issued and enclosed in a sealed envelope by the institution from which you will graduate or graduated most recently. An applicant who is expected to graduate from the Faculty of Science of the University of Toyama is not required to submit this document. |
| ③ | Academic Record | Issued and enclosed in a sealed envelope by the institution from which you will graduate or graduated most recently. A document using forgery copy prevention paper is not required to be enclosed in a sealed envelope. |
| ④ | Examination Admission Ticket and Photo ID Card | Fill out the designated forms and attach a passport grade photo of the applicant (H 4 cm×W 3 cm, taken within the last three months before the application) to each form. |
| ⑤ | Designated envelope to issue the examination admission ticket | Please clearly write your postal code, address and name, and attach a 362-yen stamp on it. |
| ⑥ | ※Mount for Certificate of Remittance (Examination Fee: 30,000 JPY) | After remitting the examination fee from a financial institution using the "Request Form for Remittance", please attach the "Certificate of Remittance" received from the financial institution on the "Mount for certificate of remittance" ※Japanese Government (MEXT) scholarship foreign students are not required to pay the examination fee. |
| ⑦ | Mailing Label | Use the designated form and write on the form your zip code, address, and name. |
| ⑧ | Certificate of Residence | Issued by the municipal government of your place of residence. The status of residence should be specified in the document. The University also accepts a copy of one's passport (Copied page(s) must include the applicant's photograph and the status of residence.) or resident card (both sides). |

※ Documents written in a foreign language other than English must be accompanied by documents translated into Japanese or English.

5. Remittance of the examination fee

An applicant for admission must remit the examination fee from a financial institution (excluding the Japanese Post Office Bank) via wire transfer, using the “Request Form for Remittance.” Please do not remit the examination fee via ATM (automatic teller machine). The applicant should pay the bank transfer fee.

The examination fee received by the University of Toyama cannot be refunded except for the following cases.

| Refundable cases | Amount of refund |
|--|-----------------------|
| A person had remitted the examination fee but he/she did not submit the application documents or his/her application was not accepted. | 30,000 JPY |
| An applicant made duplicate payments for the examination fee. | 30,000 JPY |
| An applicant made an overpayment for the examination fee. | Amount of overpayment |

※ When applying to the University of Toyama for an examination fee refund, affix the Examination Fee Payment receipt to the designated Examination Fee Refund Request Form and mail it to the University of Toyama at:

Accounting Group, Financial Affairs Division, University of Toyama
3190 Gofuku, Toyama 930-8555, Japan
TEL: +81-76-445-6053

6. Approval of the eligibility for application

The applicant who falls under the “Eligibility for Application ⑨～⑪” is subject to preliminary review of eligibility. Contact the Admission Office of the Faculty of Science, ask for the necessary documents for the application, and send them to the Admission Office by the deadline.

| Division | Deadlines for application |
|--|---|
| First call for applications | 4 PM, July 2 (Monday), 2018 |
| Second call for applications ※Departments of Physics and Chemistry | 4 PM, October 5 (Friday), 2018 |
| Second call for applications ※Departments of Mathematics, Biology, Earth Sciences, and Environmental Biology and Chemistry | 4 PM, December 20 (Thursday), 2018 |

※ **Some fields of education may not launch the second call for applications if they fill their quota in the first call. Information for the second call will be published on the Faculty of Science web site in late September, 2018.**

Contact address: Admission Office, Faculty of Science, University of Toyama
3190 Gofuku, Toyama 930-8555, Japan
FAX: +81-76-445-6550
E-mail: rikyoumu@adm.u-toyama.ac.jp

7. Announcement of successful applicants

The ID numbers of successful applicants will be posted on the notice board in the entrance hall of the Faculty of Science Building and on the Faculty of Science website of the University of Toyama. The Graduate School will also send notification of acceptance to successful applicants.

Personal inquiries (by phone, fax, e-mail, etc.) will not be accepted.

| Division | Date and time for the announcements |
|--|---|
| First call for applications | 1 PM, September 7 (Friday), 2018 |
| Second call for applications ※Departments of Physics and Chemistry | 1 PM, December 7 (Friday), 2018 |
| Second call for applications ※Departments of Mathematics, Biology, Earth Sciences, and Environmental Biology and Chemistry | 1 PM, February 15 (Friday), 2019 |

8. Admission procedures

Admission procedures are shown below. Enrollment forms and details will be sent to successful applicants.

- (1) Procedure period: (October 2018 enrollment) Mid-September 2018 (scheduled)
(April 2019 enrollment) Mid-March 2019 (scheduled)

- (2) Submission of admission documents

Submit to: The Examination Section of the Admissions Office
3190 Gofuku, Toyama, 930-8555 Japan

- (3) Fees for admission procedure

| Division | Amount | Remarks |
|------------------|-------------|--|
| ① Enrollment Fee | 282,000 JPY | Please use the "Request Form for Remittance" in the admission documents sent to successful applicants. The enrollment fee received by the University of Toyama cannot be refunded. |
| ② Insurance Fee | 2,430 JPY | Enrolled students are obliged to get the Personal Accident Insurance for Students Pursuing Education and Research for two years. |

※ The above is the currently valid enrollment fee. Should the enrollment fee be revised, the new enrollment fee will go into effect as of the time of the revision.

Note 1: Tuition fee

The tuition fee for the summer and winter semesters should be remitted in May and November, respectively. Notification of the amount and method of payment will be provided during enrollment procedures. For reference, the tuition fee for FY 2018 was 535,800 JPY.

Note 2

Students who have difficulties paying the enrollment fee and/or tuition fee may be exempted from or granted a postponement for the payment upon screening.

Scholarships are available through the Japan Student Services Organization.

- (4) The successful applicants who have not completed the admission procedures in the designated period will be considered to have declined enrollment.

9. Miscellaneous

- (1) No change in the submitted application documents will be accepted.
- (2) Those who are absent from the examination will be considered to have declined application. Do not forget to carry your “Examination Admission Ticket” to the oral examination.
- (3) A false statement in the application documents may result in the cancellation of enrollment.

10. Privacy policy

The University of Toyama handles all personal information in accordance with the “Act on the Protection of Personal Information Held by Independent Administrative Agencies, etc.” and “The University of Toyama Policies on Personal Information Protection.”

- (1) Names, addresses, and other personal information that the University of Toyama obtains from applicants will be used for 1) the selection of students (accepting applications and providing examinations), 2) announcement of successful applicants, 3) admission procedures, 4) investigation and research for the selection process, and 5) other related operations.
- (2) Personal information obtain from the students who have completed the admission procedures will be used for preparatory education before admission and 1) matters related to instruction and administration (registration, instruction, etc.), 2) student assistance (health management, application for scholarships and tuition exemptions, employment assistance, etc.), 3) the collection of tuition after admission, and 4) statistical survey and data analysis.
- (3) ID numbers, the names and addresses of successful applicants may be used to facilitate contact by organizations related to after-school activities, the alumni association, the support association, and the student cooperative association of the University of Toyama.

Note: If you are a successful applicant and would not like to be contacted by the above-mentioned organizations, please notify the Admissions Office, Faculty of Science, University of Toyama.

- (4) The University of Toyama may partially outsource operations to commissioned companies (hereinafter referred to as “Contractors”). We may supply said Contractors with all or part of the personal information obtained through the application process as required for the execution of their contracted business. We supervise the use of information to ensure compliance with confidentiality.

Overview of the Master's Program

1. Departments and fields of education

| Department | Field of Education | |
|-------------|-------------------------------------|--|
| Mathematics | Mathematical Analysis | Number theory, Differential geometry, Topology, Complex analysis, Several complex variables, Real analysis, and so on. |
| | Mathematical Science of Information | Algebra, Theory of functional equations, Applied analysis, Numerical analysis, Probability theory, and so on. |
| Physics | Solid State Physics | Magnetic, electrical and thermal properties of condensed matter including strongly correlated electron systems at low temperatures. |
| | Nanophysics | Structures and properties of nanoparticles and disordered systems. |
| | Theoretical Physics | Theoretical elementary particle physics, cosmology and related topics. |
| | Microwave Physics | Microwave and laser spectroscopy of molecules; Control of molecular motion. |
| | Laser Physics | Development of coherent light sources and their application to precise optical measurements and spectroscopic works. |
| Chemistry | Physical Chemistry | We study catalysts, which are important substances in the manufacture of numerous industrial chemicals. Catalysts are also widely used to eliminate pollutants, such as NO _x , or mal-odors from the environment. Although catalysts are widely used, the underlying mechanisms of their activities can be complicated and varied. Our major interests lie in conducting both theoretical and experimental basic research to acquire a more thorough understanding of these catalytic interactions. |
| | Coordination Chemistry | Coordination compounds, being composed of metal ions and organic/inorganic ligands, have huge diversity and potential. In this laboratory, coordination compounds with novel structures and properties are being prepared. Our interests are divided into three areas: 1. emissive coordination complexes; 2. multinuclear complexes that respond to external stimuli; and 3. functional complexes, inspired by renewable energy conversion in nature, which exhibit catalytic activity toward the reduction of CO ₂ , O ₂ , and N ₂ . |
| | Organic Chemistry | We synthesize numerous compounds with new, hitherto unknown properties, and then investigate the intricacies of their structures. Some of the compounds we have created include fragrant compounds and emerald crystals. The nature of such compounds and their molecular structure are intimately related. Currently, we are developing compounds that are highly responsive to heat, light, and magnetic fields. |

| | | |
|-------------------------------------|--|---|
| Chemistry | Natural Products Chemistry | Numerous bioactive organic compounds occur in nature, many of which possess complex structures with large numbers of asymmetrical carbon atoms. We are developing useful reactions for the synthesis of such complex-structured organic compounds, and applying these compounds to the synthesis of bioactive natural products. |
| | Biofunctional Chemistry | RNAs play versatile roles in biological systems because they not only serve as a genetic material but also act as functional molecules. We study the molecular basis of naturally occurring RNAs with catalytic and receptor functions. Another interest of our group lies in the artificial generation of RNAs with desirable functions through rational and evolutionary approaches. |
| | Hydrogen Isotope Science | We conduct education and research on the physicochemical properties of hydrogen isotopes and the development of functional materials for safe and efficient utilization of hydrogen isotopes as fuels of fusion reactors and hydrogen energy systems. Our research topics are in an interdisciplinary field that covers materials science, physical chemistry, nuclear fusion engineering, and hydrogen energy engineering. |
| Biology | Structural Biology | Morphology and phylogenetic systematics of spermatophyte, insects, and fishes; Population dynamics of fishes, birds, and mammals. Community structures and dynamics of insects and their symbiotic microorganisms. |
| | Cell Biology | Division and differentiation of plant cells; photo-morphogenesis; genome structure and functions; organ differentiation in higher plants. |
| | Regulatory Biology | Physiology and biochemistry of functional peptides and their receptor signaling in fishes, amphibians, and mammals; sleep regulations, circadian rhythms and photoperiodism in insects and mammals; genetic manipulation and mutagenesis. |
| Earth Sciences | Solid Earth Geophysics | Geoelectromagnetism and paleomagnetism; tectonophysics; geodesy; physical properties of rocks. |
| | Geophysical Fluid Dynamics | Meteorology; climate dynamics; atmospheric physics; ocean dynamics; glaciology; interaction of atmosphere, hydrosphere and lithosphere; cryosphere science; solid-state physics and environmental science of ice and snow; nucleation and growth of clathrate hydrates. |
| | Geological Science | Mineral sciences; tectonics and geochronology; sedimentary geology; paleontology; volcanology. Earth system history; seismogeology; hazard geology. |
| Environmental Biology and Chemistry | Environmental and Analytical Chemistry | Environmental/analytical chemistry; geochemical engineering; geochemistry; paleoceanography; marine chemistry; bio/chemical sensor |
| | Environmental Biology | Environmental biology; ecology; plant-animal interactions; microbiology; plant physiology; conservation biology |

2. Fields of education and academic advisors

| Department | Field of Education | Academic Advisor | |
|---------------------|-------------------------------------|---------------------|----------------------|
| Mathematics | Mathematical Analysis | Professor | Yukitaka Abe* |
| | | Professor | Masato Kikuchi |
| | | Professor | Takashi Koda |
| | | Professor | Setsuo Nagai |
| | | Professor | Keiko Fujita |
| | | Associate Professor | Tatsuya Kawabe |
| | Mathematical Science of Information | Associate Professor | Iwao Kimura |
| | | Professor | Yasuhiro Fujita |
| | | Professor | Hiroyuki Yamane |
| | | Associate Professor | Kei-ichi Ueda |
| Associate Professor | | Hideo Deguchi | |
| Physics | Solid State Physics | Assistant Professor | Naoto Kouyama |
| | | Professor | Tomohiko Kuwai |
| | | Associate Professor | Takashi Tayama |
| | Nanophysics | Assistant Professor | Yuji Matsumoto |
| | | Professor | Hiroyuki Ikemoto |
| | Theoretical Physics | Associate Professor | Keisuke Hatada |
| | | Professor | Takeshi Kurimoto |
| | Microwave Physics | Associate Professor | Mitsuru Kakizaki |
| | | Professor | Kaori Kobayashi |
| | Laser Physics | Associate Professor | Katsunori Enomoto |
| Professor | | Yoshiki Moriwaki | |
| Chemistry | Physical Chemistry | Associate Professor | Kazuhiro Yamamoto |
| | | Professor | Yoshiki Moriwaki |
| | | Associate Professor | Koichi Nozaki |
| | | Associate Professor | Tsutomu Osawa |
| | Coordination Chemistry | Lecturer | Honoh Suzuki |
| | | Lecturer | Munetaka Iwamura |
| | Organic Chemistry | Professor | Kiyoshi Tsuge |
| | | Associate Professor | Hideki Ohtsu |
| | Natural Products Chemistry | Professor | Naoto Hayashi |
| | | Assistant Professor | Junro Yoshino |
| | Biofunctional Chemistry | Associate Professor | Junro Yoshino |
| | | Associate Professor | Masahiro Miyazawa |
| | Hydrogen Isotope Science | Lecturer | Hajime Yokoyama |
| | | Professor | Yoshiya Ikawa |
| | | Lecturer | Shigeyoshi Matsumura |
| | | Professor | Takayuki Abe |
| Professor | | Yuji Hatano | |
| Associate Professor | | Masanori Hara | |
| Biology | Structural Biology | Associate Professor | Hidehisa Hagiwara |
| | | Lecturer | Akira Taguchi |
| | | Assistant Professor | Satoshi Akamaru |
| | | Assistant Professor | Satoshi Akamaru |
| Biology | Structural Biology | Professor | Yoshikane Iwatsubo* |
| | | Associate Professor | Yuji Yamazaki |
| | | Associate Professor | Kiyoto Maekawa |
| | | Associate Professor | Tsutomu Tsuchida |

| | | | |
|---|-------------------------------------|---|--------------------|
| Biology | Cell Biology | Professor | Tatsuya Wakasugi |
| | | Professor | Ichiro Karahara |
| | | Lecturer | Masayuki Yamamoto |
| | | Specially Appointed Assistant Professor | Daisuke Tamaoki |
| | Regulatory Biology | Professor | Kouhei Matsuda |
| | | Professor | Masayuki Ikeda |
| | | Associate Professor | Shigeru Kikukawa* |
| | | Lecturer | Norifumi Konno |
| | | Lecturer | Tomoya Nakamachi |
| | | Assistant Professor | Eri Morioka |
| Earth Sciences | Solid Earth Physics | Professor | Tohru Watanabe |
| | | Professor | Shigekazu Kusumoto |
| | | Associate Professor | Kazuo Kawasaki |
| | | Assistant Professor | Kohei Hotta |
| | Geophysical Fluid Dynamics | Professor | Kazuaki Yasunaga |
| | | Professor | Kazuma Aoki |
| | | Professor | Konosuke Sugiura |
| | | Associate Professor | Wataru Shimada |
| | | Associate Professor | Atsushi Hamada |
| | Physical Oceanography | Professor | Shigeru Otoh |
| | | Professor | Yasuo Ishizaki |
| | | Professor | Shin-ichi Sano |
| | | Associate Professor | Kenji Kashiwagi |
| | | Associate Professor | Ken-ichi Yasue |
| | | Associate Professor | Ryo Tateishi |
| | Environmental Biology and Chemistry | Environmental and Analytical Chemistry | Professor |
| Professor | | | Katsumi Marumo* |
| Professor | | | Hideki Kuramitsu |
| Associate Professor | | | Noriko Hata* |
| Associate Professor | | | Keiji Horikawa |
| Assistant Professor | | | Kazuto Sazawa |
| Specially Appointed Assistant Professor | | | Tamihisa Ohta |
| Environmental Biology | | Professor | Daisuke Tanaka |
| | | Professor | Naoya Wada |
| | | Professor | Yasushi Yokohata |
| | | Professor | Hiroshi Ishii |
| | | Associate Professor | Hiroyuki Kamachi |
| | | Lecturer | Akihiro Sakatoku |

Note: An advisor with "*" after his/her name will retire on March 31,2020.

3. Requirements for completion of the program

The requirements for the master's program in the Graduate School of Science and Engineering are enrollment for a period of two or more years, 30 or more credits in the designated subjects and successful completion of a screening of a master's dissertation and final examination.

4. List of subjects and credits (The class subjects listed in the table are held in academic year 2018)

Science Division

| Department | Subject Name | Credits | Remarks | |
|---|---|---------|--|--|
| Mathematics | Advanced Study of Algebra A | 2 | ○denotes a required subject. | |
| | Advanced Study of Algebra B | 2 | | |
| | Advanced Study of Geometry A | 2 | | |
| | Advanced Study of Geometry B | 2 | | |
| | Advanced Study of Analysis A | 2 | | |
| | Advanced Study of Analysis B | 2 | | |
| | Advanced Study of Analysis C | 2 | | |
| | Advanced Study of Analysis D | 2 | | |
| | Advanced Study of Applied Mathematics A | 2 | | |
| | Advanced Study of Applied Mathematics B | 2 | | |
| | Common Core for Advanced Mathematics A | 2 | | |
| | Common Core for Advanced Mathematics B | 2 | | |
| | Common Core for Advanced Mathematics C | 2 | | |
| | Common Core for Advanced Mathematics D | 2 | | |
| | Common Core for Advanced Mathematics E | 2 | | |
| | Common Core for Advanced Mathematics F | 2 | | |
| | Advanced Study of Mathematics | * | | * Credits of “Advanced Study of Mathematics” will be decided when the instruction of the subject begins. |
| | Science Outreach Practice I | 1 | | |
| | Science Outreach Practice II | 1 | | |
| Career Development for Science Students | 1 | | | |
| ○Seminar | 6 | | | |
| ○Master's Research in Mathematics | 14 | | | |
| Physics | Condensed Matter Physics I | 2 | ○denotes a required subject. | |
| | Condensed Matter Physics II | 2 | | |
| | Low Temperature Physics I | 2 | | |
| | Low Temperature Physics II | 2 | | |
| | Elementary Particle Physics I | 2 | | |
| | Elementary Particle Physics II | 2 | | |
| | Quantum Theory of Field I | 2 | | |
| | Quantum Theory of Field II | 2 | | |
| | Physics of Disordered System | 2 | | |
| | Nanoparticle Physics | 2 | | |
| | Synchrotron Radiation Physics | 2 | | |
| | Many-Body Physics | 2 | | |
| | Spectroscopy I | 2 | | |
| | Spectroscopy II | 2 | | |
| | Quantum Electronics I | 2 | | |
| | Quantum Electronics II | 2 | | |
| | Atomic and Molecular Physics | 2 | | |
| | Optical Physics | 2 | | |
| | Gravitational Wave Physics I | 2 | * Credits of “Special Topics in Physics” will be decided when the instruction of the subject begins. | |
| | Gravitational Wave Physics II | 2 | | |
| | Frontiers in Physics | 2 | | |
| | Special Topics in Physics | * | | |
| | Science Outreach Practice I | 1 | | |
| Science Outreach Practice II | 1 | | | |
| Career Development for Science Students | 1 | | | |
| ○Seminar | 6 | | | |
| ○Master's Research in Physics | 14 | | | |

| Department | Subject Name | Credits | Remarks |
|---|--|---------|------------------------------|
| Chemistry | Chemistry of Catalysis | 2 | ○denotes a required subject. |
| | Photochemistry | 2 | |
| | Chemical Spectroscopy | 2 | |
| | Advanced Solution Chemistry | 2 | |
| | Structural Inorganic Chemistry | 2 | |
| | Bioinorganic Chemistry | 2 | |
| | Solid-State Organic Chemistry | 2 | |
| | Synthetic Organic Chemistry | 2 | |
| | Organometallic Chemistry | 2 | |
| | Biofunctional Chemistry | 2 | |
| | Advanced Biomolecular Engineering | 2 | |
| | Physical Chemistry of Solids | 2 | |
| | Advanced Radiation Chemistry | 2 | |
| | Functional Materials | 2 | |
| | Advanced Energy Conversion | 2 | |
| | Chemistry of Isotopes | 2 | |
| | Frontier Chemistry | 2 | |
| | Special Topics in Reaction and Molecular Field Chemistry | 1 | |
| | Special Topics in Synthetic Organic Chemistry | 1 | |
| | Special Topics in Hydrogen Isotope Science | 1 | |
| | Advanced Laboratory Chemistry | 2 | |
| | Science Outreach Practice I | 1 | |
| | Science Outreach Practice II | 1 | |
| Career Development for Science Students | 1 | | |
| ○Seminar | 6 | | |
| ○Master's Research in Chemistry | 14 | | |
| Biology | Advanced Cell Biology | 2 | ○denotes a required subject. |
| | Advanced Animal Physiology | 2 | |
| | Advanced Comparative Endocrinology | 2 | |
| | Chronobiology | 2 | |
| | Advanced Functional Biology of Symbiosis | 2 | |
| | Advanced Regulation Biology | 2 | |
| | Advanced Seminar on Regulation of Organisms | 2 | |
| | Advanced Biochemistry for Signal Transmitters | 2 | |
| | Advanced Molecular Breeding | 2 | |
| | Advanced Evolutionary Genetics | 2 | |
| | Advanced Ecological Developmental Biology | 2 | |
| | Advanced Animal Pathophysiology | 2 | |
| | Advanced Experiments in Biology | 2 | |
| | Science Outreach Practice I | 1 | |
| | Science Outreach Practice II | 1 | |
| | Career Development for Science Students | 1 | |
| | ○Seminar | 6 | |
| | ○Master's Research in Biology | 14 | |

| Department | Subject Name | Credits | Remarks |
|---|---|---------|------------------------------|
| Earth Sciences | Advanced Tectonophysics | 2 | ○denotes a required subject. |
| | Advanced Seismology | 2 | |
| | Geoelectromagnetism | 2 | |
| | Climate Dynamics | 2 | |
| | Advanced Dynamic Meteorology | 2 | |
| | Atmospheric Physics | 2 | |
| | Ocean Dynamics | 2 | |
| | Advanced Glaciology | 2 | |
| | Cryospheric Change | 2 | |
| | Advanced Paleontology | 2 | |
| | Advanced Volcanology | 2 | |
| | Structural Geology | 2 | |
| | Advanced Economic Geology | 2 | |
| | Earth's Evolution | 2 | |
| | Geology Excursion I | 3 | |
| | Geology Excursion II | 1 | |
| | Advanced Earth Science | 2 | |
| | Special Topics in Earth Sciences I | 2 | |
| | Special Topics in Earth Sciences II | 2 | |
| | Science Outreach Practice I | 1 | |
| | Science Outreach Practice II | 1 | |
| Career Development for Science Students | 1 | | |
| ○Seminar | 6 | | |
| ○Master's Research in Earth Sciences | 14 | | |
| Environmental Biology and Chemistry | Advanced Environmental Chemistry | 2 | ○denotes a required subject. |
| | Advanced Environmental Analytical Chemistry | 2 | |
| | Advanced Environmental Inorganic Chemistry | 2 | |
| | Advanced Environmental Aquatic Chemistry | 2 | |
| | Advanced Hydrosphere Geochemistry | 2 | |
| | Advanced Isotope Geochemistry | 2 | |
| | Advanced Environmental Biology | 2 | |
| | Environmental Microbiology Advanced | 2 | |
| | Advanced Plant Ecology | 2 | |
| | Advanced Environmental Plant Physiology | 2 | |
| | Advanced Ecology | 2 | |
| | Advanced Evolutionary Biology | 2 | |
| | Advanced Microbial Ecology | 2 | |
| | Biostatistics | 2 | |
| | Current Topics of Environmental Science I | 1 | |
| | Current Topics of Environmental Science II | 1 | |
| | Laboratory Works of Advanced Environments | 2 | |
| | Science Outreach Practice I | 1 | |
| | Science Outreach Practice II | 1 | |
| | Career Development for Science Students | 1 | |
| | ○Seminar | 6 | |
| ○Master's Research in Environmental Biology and Chemistry | 14 | | |

Instructions for filling out the application documents

1. Overall

- (1) Use a black ballpoint pen. Write characters in block style. Please leave the sections with *(asterisk mark) blank.
- (2) Circle the appropriate item for multiple-choice questionnaires.
- (3) Indicate numbers in Arabic numerals.
- (4) The descriptions on the application documents cannot be changed after submission.
- (5) If any fact that is different from the description in the submitted documents is found, the admission of the successful applicant may be cancelled even after the acceptance of admission.

2. Application form, examination admission ticket, and photo ID card

- (1) Names of applicant
Write exactly the same names as those on the “Certificate of Residence (foreigner residents only)” or “Passport.”
- (2) Department and field of education
Please enter the preferred department and field of education on pages 9 to 11.
You can fill in the column of the second-choice field of education in the same department. If you do not have a second-choice field of education, draw a diagonal stroke in the column.
- (3) Graduating educational institution
Please enter the names of the department (school) and faculty of the graduating university or other educational institution as well as the month and year of (expected) graduation / (expected) completion.
- (4) Period of enrollment
Please circle the corresponding period on the admission form, examination admission ticket, and photo ID card.
- (5) Curriculum vitae
Please write the academic and work history of the applicant. As for the academic background, please enter the names of all the schools attended, including elementary school, in chronological order. As for university or equivalent educational institute, please enter the names of the graduate course (department and faculty).
- (6) Contact address
Please enter the address, telephone number, and e-mail address where the applicant can receive the documents for the admission exam without fail from the time of application to the time of determination of admission. If any change occurs after submitting the application, please immediately notify the Admission office of the change.