

Application Guidelines for Doctor's Course
April 2019

Graduate School of Natural Science and Technology
OKAYAMA UNIVERSITY

Policy for acceptance of admitted students

The Doctor's program is looking for students who wish to harmoniously make use of specialized field-related leading-edge knowledge, techniques and foundational knowledge beyond the students' specialized fields; students who, by means of a rich creativity, the ability to set up original solutions to issues, deep insight, and superior communicative abilities, wish to participate in the rapid development of science and technology, and exploration of unknown academic and technical fields. The Doctor's program selects and accepts both domestic and international candidates based on an examination, which measures their problem-identification/solution abilities.

Policy for acceptance of admitted students in Each Major

[Mathematics and Physics]

Our goal in this division is to educate and train human resources who are capable of deploying their own research and can contribute to developments of natural sciences with strong interests and deep expertise in the field. From this point of view, we seek people who possess passion for solid knowledge in pursuit of truth and strong will for diligent studies.

[Earth, Life, and Molecular Sciences]

Basic researches in earth science, biological science, and chemistry provide great discoveries and important achievements not only as our source of knowledge but also as the common human heritage. Because modern society faces a lot of global issues ahead, the basic researches and their comprehensive achievements should resolve these issues. We welcome people who have a strong desire for scientific discovery and responsibility for its application.

[Interdisciplinary Science]

This division encourages students to play a key role in the frontiers of science where physics, mathematics, chemistry, biology, and other disciplines merge. We welcome students who have a strong desire for scientific discovery, development and innovation as their doctoral research in a broad range of sciences.

[Industrial Innovation Sciences]

This division seeks students who wish to make contributions to technological developments and industrial innovations with their expertise in natural science including mathematics, physics, and engineering. All applicants are thus expected to have a sense of ethics as researchers and engineers, the ability of problem finding and solving from a broad perspective, international communication skills, and a strong motivation to create new industries and businesses involving state-of-the-art technologies.

[Applied Chemistry]

This division seeks people who have wide knowledge about fundamentals for the chemical analysis and synthesis of functionalized molecules and/or materials, and who have a strong interest in research activities in the research fields that the division addresses.

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I. Admission Quota

Division	Quota
Mathematics and Physics	A Few
Earth, Life, and Molecular Sciences	
Interdisciplinary Science	
Industrial Innovation Sciences	
Applied Chemistry	

Note 1: The admission quota of each division shows the number of applicants who will be selected through screening for advancement.

II. Application Guidelines for Entrance Examination (Time of Enrollment: April 2019)

1. Eligibility for Application

Those to whom any of the following items is applicable, or is expected to be applicable by March 2019.

- (1) Have a master's or professional degree.
- (2) Have been awarded a degree equivalent to a master's degree or professional degree abroad.
- (3) Have taken a correspondence course of education provided by a foreign school in Japan and have been awarded a degree equivalent to a master's or professional degree.
- (4) Have completed a program in Japan provided by an educational institution that is positioned as having graduate programs under the relevant foreign education system and which is designated separately by the Japanese Minister of Education, Culture, Sports, Science and Technology, and who have been awarded a degree equivalent to a master's or professional degree.
- (5) Have completed the program at United Nations University and have been awarded a degree equivalent to a master's degree.
- (6) Have completed a curriculum at a foreign school, an educational institution that has received the designation under item (4), or the United Nations University, who have passed an examination or a screening equivalent to those stipulated in Article 16-2 of Standards for the Establishment of Graduate Schools, and who are deemed to have academic ability equivalent to or greater than that of a master's degree holder.
- (7) Are designated by the Minister of Education, Culture, Sports, Science and Technology.
- (8) Are deemed to have academic ability equal to or greater than that of a master's or professional degree holder by the Graduate School through an individual admission eligibility screening and who have reached the age of 24 years.

Note 1: Applicants who are expected to complete a master's program or master's course at Okayama University in March 2019 must apply following **"III Guidelines for Screening for Advancement"** (described on p. 9).

Note 2: Those who “(A)re designated by the Minister of Education, Culture, Sports, Science and Technology” specified in item (7) above refers to applicants who meet any of the following conditions, and who have the experience of engaging in research in a university or research institution for more than 2 years after graduation or completion of university or other institution, with research achievements, such as published books, academic papers, academic lectures, academic reports, or patents, which are considered to be equivalent to or higher than a master’s thesis. (It is necessary to apply Application Eligibility Screening. See “**2 Application Eligibility Screening**”.)

1) Those who graduated from a university.

2) Those who have completed 16 years of school education in a foreign country or who have completed 16 years of school education in Japan by taking a correspondence course of education provided by a foreign school.

Note 3: Those who “(A)re deemed to have academic ability equal to or greater than that of a master’s or professional degree holder by the Graduate School through an individual admission eligibility screening” specified in the item above refers to applicants who have passed an academic proficiency test (written and oral examinations) and an interview that the Graduate Schools provides as the screening of the eligibility for application after document screening. (It is necessary to apply Application Eligibility Screening. See “**2 Application Eligibility Screening**”.) However, when an applicant’s ability can be confirmed based on the documents submitted, the applicant will be exempted from the written examination.

The date, method, and other information related to the academic ability test and the interview will be assigned to cases individually.

2. Application Eligibility Screening

For those applicants who fall under **item (7) or (8)** specified in the previously described “**1 Eligibility for Application**”, we conduct application eligibility screenings before application. The applicants must submit the following documents to the Graduate School Section, Academic Affairs Division, Graduate School of Natural Science and Technology during each period.

Acceptance Period of Documents for Application Eligibility Screening

Submission Period	December 20, 2018 to December 21, 2018
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Documents Required for Application Eligibility Screening

Documents Required for Application	Remarks
〈1〉 Form of Eligibility for Application	Use the forms prescribed by the Graduate School of Natural Science and Technology.
〈2〉 Record of Academic Performance	Use the form prescribed by the Graduate School of Natural Science and Technology. (Briefly describe objective findings from research results relevant to the field of major.) For academic papers, attach an offprint or a copy. In the case of presentations, attach a summary or an abstract for research presentations.
〈3〉 Certificate of Research Participation	Use the form prescribed by the Graduate School of Natural Science and Technology. (The form must be completed by the institution with which the applicant is affiliated.)

〈4〉 Academic Transcript (of last completed education)	Submit a transcript issued by the president of the final school from which the applicant graduated.
〈5〉 Graduation Certificate (of last completed education)	Submit a graduation certificate issued by the president of the final school from which the applicant graduated.
〈6〉 Qualifications and Licenses	Submit copies of licenses relevant to the field of major that might be of some help for assessing proficiency. (Make A4-sized photocopies with brief explanations.)

Note1. Forms 〈1〉 – 〈3〉 are attached to the end of the submission documents.

For additional details related to the application eligibility screening, see Notes 2 and 3 in “**1 Eligibility for Application.**”

3. Application of Persons with Disabilities

Applicants with disabilities might need special considerations when taking examinations and classes. Consult with us in the way described below before application.

Have a consultation as early as possible, considering the time necessary to inform you of the results of the consultation and take necessary measures based on special considerations.

Deadline of Consultation	December 21, 2018
Method of Consultation	Request a “Form of Preliminary Consultation for Application”, and consult with a doctor’s medical certificate and (for only those who have been issued) a copy of the handbook for people with disabilities.
Request to: Consult with:	Graduate School Section Academic Affairs Division Graduate School of Natural Science and Technology Okayama University 3-1-1, Tsushima-naka, Kita-ku, Okayama 700-8530, Japan Phone: 086-251-8576

4. Application Procedures

1) How to Apply

Applicants must submit all the document described in “(5) Documents Required for Application” below during the acceptance hours (8:30–17:00) in “(2) Application Periods.”

2) Application Periods

Submission Period	January 31, 2019 to February 1, 2019
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When sending the documents by mail, they must be sent by “Registered, Express Mail”. Write “Enc. Application Form for Doctoral Program of Graduate School of Natural Science and Technology” in red on the envelope and send it to arrive no later than each date stated in the **Application Period** above.

Applicants must contact a prospective supervisor as early as possible before application to consult about research content, etc.

3) Address for Submission

Graduate School Section
Academic Affairs Division

Graduate School of Natural Science and Technology
 Okayama University
 3-1-1, Tsushima-naka, Kita-ku, Okayama 700-8530, Japan
 Phone: 086-251-8576

4) Notes on Application

- (1) No change shall be permitted after submission in terms of the contents of the submitted documents.
- (2) No document shall be returned for any reason after the application documents are accepted.
- (3) Application with incomplete application documents or shortage of entrance examination fee shall not be accepted.
- (4) Please note carefully that admission might be withdrawn even after enrollment if the contents of the submitted documents are found to include false entries.
- (5) Certificates issued under the former name (surname and first name), which differs from the name written on the application form are usable. However, in such cases, attach a document (in any form) that the date of name change and the new name are written personally by the applicant.

5) Documents Required for Application

Documents Required for Application	Remarks
〈1〉 Application for Admission, Curriculum Vitae (CV) and Admission Ticket for the Examination	Fill out necessary items on the forms prescribed by Graduate School of Natural Science and Technology personally by the applicant.
〈2〉 Photograph	Affix a photograph (4 cm long × 3 cm wide, upper body, no headwear, facing forward, taken within the three months before application) on the prescribed space on the “Application for Admission” and the “Admission Ticket for Examination.” Before affixing, write the name of the intended major course of study and your name on the back of the photographs.
〈3〉 Entrance Examination Fee 30,000 yen (A transfer fee is required separately.)	<p>The entrance examination fee must be paid using the attached “Transfer Slip for Entrance Examination Fee” from a window of financial institutions, including JP banks and post offices (<u>ATM cannot be used</u>). Glue a “Certificate of Transfer for Entrance Examination Fee” on the prescribed space (the column bottom of Admission Ticket for Examination).</p> <p>Refund of Entrance Examination Fee The entrance examination fee paid is not refundable for any reason, except in the following cases:</p> <ol style="list-style-type: none"> a) Entrance examination fee was paid, but application was not made (or application documents were not submitted or accepted.) b) Entrance examination fee was paid twice by mistake. c) Those applicants who are Monbukagakusho

	<p>sponsored students need not pay the entrance examination fee, in principle. However, for cases in which the period of their scholarship ends by March 31, 2019, the payment of the entrance examination fee is required.</p> <p>When the extension of the scholarship period is approved, the entrance examination fee will be refunded.</p>
〈4〉 Transcript of Faculty	Submit a certificate issued by the president of the university or the dean of the faculty from which you graduated.
〈5〉 Transcript of Graduate School	Submit a certificate issued by the president or the dean of the graduate school from which you graduated.
〈6〉 (Prospective) Completion Certificate	Submit a certificate issued by the master's program (master's course) or the professional graduate school from which you completed.
〈7〉 Theses	<p>Submit one of the following:</p> <p>a) For master's degree holders with a master thesis, a "copy of the master's thesis" and an "Abstract of Thesis (of approx. 2,000 words using the form prescribed by Graduate School of Natural Science and Technology)."</p> <p>b) For applicants who are expected to complete a master's program, who are master's degree holders without a master thesis, or who apply under item (6), (7) or (8) of "1 Eligibility for Application", a "Report of Research Progress (of approx. 2,000 words using the form prescribed by the Graduate School of Natural Science and Technology)."</p> <p>Attach other materials such as research publications, if any.</p>
〈8〉 Research Planning Sheet	Use the form prescribed by Graduate School of Natural Science and Technology.
〈9〉 Curriculum Vitae (CV) and Certificate of Research Participation	With regard to those who will fall under item (2) or (3) of "1 Eligibility for Application" , the years of curriculum and the history of research must be confirmed. Submit the form prescribed by Graduate School of Natural Science and Technology after filling out necessary items.

〈10〉 Pertaining to the Qualifying Examination	Those who will apply under item (6) of “1 Eligibility for Application” must submit a “ Pertaining to the Qualifying Examination” (see an example of the format) issued by the president of the university (or the graduate school) that conducted the screening and its accompanying documents.
〈11〉 Sticker of Address	Fill out the necessary items.

Applicants who were confirmed to be eligible for application in the application eligibility screening need not submit certificates from 〈4〉 – 〈6〉 .

6) Purpose of Use of Personal Information

Application documents submitted and personal information written on them are used for affairs related the selection of entrants.

However, regarding entrants, we use their personal information written on the application form, including name, gender, date of birth, current address, and schools graduated from, as registry data for basic student information in the academic affairs system at Okayama University.

In addition, successful applicants’ personal information, examinee number and name (kanji/ kana), are used for the systems for tuition fee debt management and tuition fee exemption at Okayama University.

When application for admission fee exemption, postponement of admission fee collection, tuition fee exemption, or scholarships such as those of Japan Student Services Organization was made, the applicant’s entrance examination results and academic transcript might be used to handle academic ability judgment related to affairs such as postponement of admission fee collection.

5. Issue of Admission Ticket for Examination

Admission tickets for examination will be sent to your prospective supervisor around date stated below. Please receive it from your prospective supervisor. When hoping for mailing, please inquire to the office in charge. (P. 8).

Submission Period	Around February 5, 2019
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6. Methods for Selection of Entrants

Selection of entrants shall be made comprehensively based on the results of an oral examination and document review.

The oral examination will be conducted mainly concerning the applicant’s master’s thesis and research plan document.

If necessary, we will pose questions to assess English language ability (or Japanese language ability for international students) during the oral examination.

Date	Examination Category	Time	Place of Examination
February 12, 2019	Oral Examination	9:30 a.m. –	A prospective supervisor will notify applicants of the location later.

Note 1: The date and time of the oral examination above might be changed after applicants are contacted.

Note 2: If no information about the date, time, or place of the oral examination has been received by February 7, please inquire to the office in charge (P. 8).

7. Announcement of Successful Applicants

Successful applicants will be announced on a bulletin board.

Date	Place of Bulletin Board
10:00 a.m. on March 1, 2019	The bulletin board in front of the office of Graduate School Section, Academic Affairs Division, Graduate School of Natural Science and Technology, Okayama University (1F, Building No. 1, Faculty of Engineering)

Note 1: The examinee numbers of successful applicants will be announced on the bulletin board. A letter of acceptance and other materials will be sent directly to successful applicants dated on the day of the announcement.

Note 2: After the announcement on the bulletin board, the examinee numbers of successful applicants will be posted on the homepage (<https://www.gnst.okayama-u.ac.jp/>).

Note 3: We will never under any circumstances respond to inquiries by phone, etc. concerning passing or failing the examination.

8. Admission Procedures

(1) Method of Admission Procedures

Successful applicants will be accepted into the program after having completed the admission procedures. Details will be separately informed to successful applicants later.

(2) Period of Admission Procedures

The period of admission procedures has been scheduled as follows. However, successful applicants will be informed about details later.

April 2019 Entrants: March 13, 2019 to March 14, 2019

9. Other

(1) Admission Fee and Tuition Fee

Admission fee: 282,000 yen (expected amount)

Tuition fee: 267,900 yen (for half a year); 535,800 yen (for a year) (expected amount)

※ When the amount was revised at the time of admission or while at school, the new amount will be applied from the time of the revision.

In addition, a premium for Personal Accident Insurance for Students Pursuing Education and Research, etc. will be needed as an additional expense.

(2) Study Assistance

We have many systems for study assistance: admission fee exemptions, admission fee collection postponement, tuition fee exemptions, and scholarships.

(3) Day/Evening Course System

Graduate School of Natural Science and Technology applies the special provision for educational methods (Day/Evening Course System) stipulated in Article 14 of Standards for Establishment of Graduate Schools to make it easier for students who work during class hours to take courses. We provide classes and research guidance not only during the day, but also during evenings (and Saturdays, summer and winter vacations, etc.).

(4) Extended doctoral course system

This system is designed that students, who are unable to complete their course within the standard doctoral study term (3 years) due to circumstances such as work schedule, can complete a previously scheduled and extended course period over a certain period of time beyond the standard term. If you are permitted, you can complete the course by paying tuition fee of standard study term (for 3 years). Details will be announced at the entrance procedure.

(5) If there is anything unclear about application, please inquire to the office in charge below.

Graduate School Section Academic Affairs Division

Graduate School of Natural Science and Technology

Okayama University

3-1-1, Tsushima-naka, Kita-ku, Okayama 700-8530, Japan

Phone: 086-251-8576

Fax: 086-251-8580

URL of Graduate School of Natural Science and Technology: <https://www.gnst.okayama-u.ac.jp/>

E-mail: agf8576@adm.okayama-u.ac.jp

III. Guidelines for Screening for Advancement
(Time of Advancement: April 2019)

1. Eligibility for Application

Okayama University Students who are expected to complete the master’s program or masters’ course at the graduate school by March2019.

2. Application Procedures

1) How to Apply

Applicants for advancement must bring all the “Documents Required for Application” during the acceptance hours (8:30–17:00) during the “Application Period.”

(No examination fee is needed. Do not transfer it by mistake.)

Applicants for advancement must, in advance, contact a prospective supervisor who will teach after advancement.

2) Application Period

Submission Period	January 31, 2019 to February 1, 2019
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3) Address for Submission

Graduate School Section
 Academic Affairs Division
 Graduate School of Natural Science and Technology
 Okayama University
 3-1-1, Tsushima-naka, Kita-ku, Okayama 700-8530, Japan
 Phone: 086-251-8576

4) Notes on Application

- (1) No change shall be permitted after submission in terms of the contents of the submitted documents.
- (2) No document shall be returned for any reason after the application documents are accepted.
- (3) Please note carefully that admission might be withdrawn even after advancement if the contents of the submitted documents are found to include false entries.

5) Documents Required for Application

Documents Required for Application	Remarks
〈1〉 Application for Admission, Curriculum Vitae (CV) and Admission Ticket for the Examination	Fill out necessary items on the forms prescribed by Graduate School of Natural Science and Technology personally by the applicant.
〈2〉 Photograph	Affix a photograph (4 cm long × 3 cm wide, upper body, no headwear, facing forward, taken within the three months before application) on the prescribed space on the “Application for Admission” and the “Admission Ticket for Examination.” Before affixing, write the name of the intended major course of study and your name on the back of the photographs.

〈3〉 Transcript of Graduate School	Submit a certificate issued by the master's program (master's course)
〈4〉 Report of Research Progress	Use the form (approx. 2,000 words) prescribed by the Graduate School of Natural Science and Technology
〈5〉 Research Planning Sheet	Use the form prescribed by Graduate School of Natural Science and Technology.
〈6〉 Sticker of Address	Fill out the necessary items.

6) Purpose of Use of Personal Information

Application documents submitted and personal information written on them are used for affairs related the selection of advancement.

However, regarding advancing students, we use their personal information written on the application form, including name, gender, date of birth, current address, and schools graduated from, as registry data for basic student information in the academic affairs system at Okayama University.

In addition, successful applicants' personal information, examinee number and name (kanji/ kana), are used for the clerical systems for tuition fee debt management and tuition fee exemption at Okayama University.

When application for tuition fee exemption, or scholarships such as those of Japan Student Services Organization was made, the applicant's entrance examination results and academic transcript might be used to handle academic ability judgment related to affairs such as tuition fee exemption.

3. Issue of Admission Ticket for Examination

Admission tickets for examination will be sent to your prospective supervisor around date stated below. Please receive it from your prospective supervisor. When hoping for mailing, please inquire to the office in charge. (P. 12).

Submission Period	Around February 5, 2019
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4. Methods for Screening for Advancement

Selection of advancing students shall be made in a comprehensive manner on the basis of results of an oral examination and document screening.

The oral examination will be conducted mainly concerning the applicant's progress report of research and the research plan document.

If necessary, we will present questions related to English language ability (or Japanese language ability for international students) during the oral examination.

When an applicant's ability can be fully assessed by document screening, etc., the applicant's oral examination might be omitted.

Date	Examination Category	Time	Place of Examination
February 12, 2019	Oral Examination	9:30 a.m. –	A prospective supervisor will notify applicants of the location later.

Note 1: The date and time of the oral examination above might be changed after applicants are contacted.

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10:00 a.m. on March 1, 2019	The bulletin board in front of the office of Graduate School Section, Academic Affairs Division, Graduate School of Natural Science and Technology, Okayama University (1F, Building No. 1, Faculty of Engineering)

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Successful applicants will be accepted into the program after having completed the admission procedures. Details will be separately informed to successful applicants later.

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7. Other

(1) Admission Fee and Tuition Fee

No Admission fee is needed.

Tuition fee: 267,900 yen (for half a year); 535,800 yen (for a year) (expected amount)

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In addition, a premium for Personal Accident Insurance for Students Pursuing Education and Research, etc. will be needed as an additional expense.

(2) Study Assistance

We have many systems for study assistance: tuition fee exemptions, and scholarships.

(3) Extended doctoral course system

This system is designed that students, who are unable to complete their course within the standard doctoral study

term (3 years) due to circumstances such as work schedule, can complete a previously scheduled and extended course period over a certain period of time beyond the standard term. If you are permitted, you can complete the course by paying tuition fee of standard study term (for 3 years). Details will be announced at the entrance procedure.

(4) If there is anything unclear about application, please inquire to the office in charge below.

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Graduate School of Natural Science and Technology

Okayama University

3-1-1, Tsushima-naka, Kita-ku, Okayama 700-8530, Japan

Phone: 086-251-8576

Fax: 086-251-8580

URL of Graduate School of Natural Science and Technology: <https://www.gnst.okayama-u.ac.jp/>

E-mail: agf8576@adm.okayama-u.ac.jp

IV. Purpose of Human Resources Development in Each Division

[Mathematics and Physics]

This division course develops pioneering researchers who can open up important subjects of research in advanced basic science and who can promote them independently with the practical ability that is supported by mathematical basic ability in natural sciences and broad knowledge of basic science and the experience of cutting-edge science research that implements it as their sustenance. We also develop researchers and engineers who have both a high level of numerical analysis capability and a deep understanding of basic concepts and who can conceive of new principles.

[Earth, Life, and Molecular Sciences]

This division conducts wide-ranging, interdisciplinary education and research on phenomena associated with the universe, the earth, and the atmosphere, structure and function of organisms, and properties of atoms and molecules and their aggregates, using experiments and theoretical methods based on substances. Through the educational and research activities, we develop personnel to become researchers, engineers, and educators who have deep knowledge and a broad view of natural sciences and possess a high level of research ability and rich creativity.

[Interdisciplinary Science]

Our mission of this division is to cultivate global scientific leaders of the next generation who have strengths in a wide range of scientific disciplines and a high level of research ability and a rich creativity in the field of interdisciplinary science.

[Industrial Innovation Sciences]

This division course of study develops researchers and core engineers for employment in industry who advance research and development through the use of advanced knowledge of mechanical and systems engineering and electronic information system engineering, with problem-seeking ability and communication skills, who have the ability to create new industries and new businesses that have put cutting-edge technology, and who are able to play an active role internationally with a wide-ranging perspective, a high degree of specialization, and problem-solving ability.

[Applied Chemistry]

Chemistry is the starting point of manufacturing. This division develops personnel who understand the properties based on the molecules that are the building blocks of substances, not only manufacturing things by engineering molecules but also opening up various functions of inorganic and organic molecules, and who further have widely various disciplines covering biological macromolecules and microorganisms. Additionally, we develop researchers, technology developers, and business creators who can play an active role internationally.

V. Guide to Divisions in Graduate School of Natural Science and Technology

(As of May 1, 2018)

① Division of Mathematics and Physics

1. Department of Mathematics

Research Areas	Class Subjects	Instructors
Algebra	Invariant Theory	HASHIMOTO Mitsuyasu, Professor
	Theory of Representations	ISHIKAWA Masao, Professor
	Commutative Algebra	YOSHINO Yuji, Professor
	Model Theory	TANAKA Katsumi, Professor
	Rings and Categories of Modules	SUZUKI Takeshi, Associate Professor
Geometry	Geometric Structures	KIYOHARA Kazuyoshi, Professor
	Combinatorial Homotopy Theory	MONDEN Naoyuki, Associate Professor
	Differential Geometry of Submanifolds	FUJIMORI Shoichi, Professor
	Stable Homotopy Theory	TORII Takeshi, Professor
Analysis	Infinite Dimensional Analysis	(To Be Determined)
	Nonlinear Partial Differential Equation	OSHITA Yoshihito, Associate Professor
Discrete Mathematics	Geometry by Discrete Invariants	MORIMOTO Masaharu, Professor

2. Department of Physics

Research Areas	Class Subjects	Instructors
Quantum Structural Physics in Correlated Matter	Quantum Structural Physics in Correlated Matter	NOGAMI Yoshio, Professor
	Quantum Structural Physics in Low Dimensional Materials	KONDO Ryusuke, Associate Professor
Quantum Physics in Correlated Matter	Magnetism in Correlated Matter	MINO Michinobu, Professor
Physics in Advanced Functional Materials	Functional Correlated Electron System	IKEDA Naoshi, Professor
	Advanced Solid State Spectroscopy	KAMBE Takashi, Associate Professor
	Physics of Antienvironmental Materials	MATSUSHIMA Yasushi, Senior Assistant Professor
Materials Physics in Extreme Environments	Physics under Extreme Environment	KOBAYASHI Tatsuo, Professor
	Low Temperature Physics in Strongly Correlated Matter	INADA Yoshihiko, Professor
	Low Temperature Magnetism	ARAKI Shingo, Associate Professor
Low Temperature Condensed Matter Physics	Superconductivity	ZHENG Guo-Qing, Professor
	Physical Properties of Solids in High Magnetic Fields	KAWASAKI Shinji, Associate Professor
Physics of Condensed Matter	Quantum Theory for Solid-State Spectroscopy	OKADA Kozo, Professor
Astroparticle Physics	Neutrino Physics	SAKUDA Makoto, Professor ☆
	Cosmology	ISHINO Hirokazu, Professor
High Energy Physics	High Energy Particle Physics	KOSHIO Yusuke, Associate Professor

A name marked with a star (☆) is scheduled for retirement as of March 31, 2019

3. Cooperative Course (Department of X-ray Frontier Physics)

Research Areas	Class Subjects	Instructors
Advance Synchrotron Radiation Physics	Condensed Matter Physics Using Synchrotron Radiation	SAKURAI Yoshiharu, Guest Professor
	Instrumentation for Synchrotron Radiation Physics	KIMURA Shigeru, Guest Professor
	Application of Condensed Matter Physics Using Synchrotron Radiation	HIROSAWA Ichiro, Guest Professor
	Structural Physics using Synchrotron Radiation	ISHII Kenji, Guest Professor

② Division of Earth, Life, and Molecular Sciences

1. Department of Chemistry

Research Areas	Subjects	Instructors
Structural Chemistry	Solid Structural Chemistry	ISHIDA Hiroyuki, Professor
		GOTOH Kazuma, Associate Professor
Spectrochemistry	Laser Spectroscopy	TANG Jian, Professor
Synthetic and Physical Organic Chemistry	Organic Photochemistry	OKAMOTO Hideki, Associate Professor
Inorganic Chemistry	Physical Coordination Chemistry	KITA Masakazu, Professor
	Surface Inorganic Chemistry	OHKUBO Takahiro, Associate Professor
	Functional Coordination Chemistry	SUNATSUKI Yukinari, Assistant Professor
Physical Chemistry	Advanced Chemical Reaction Theory	SUEISHI Yoshimi, Professor
Organic Chemistry	Natural Products Chemistry	KADOTA Isao, Professor
		TAKAMURA Hiroyoshi, Associate Professor
Analytical Chemistry	Analytical Chemistry	KANETA Takashi, Professor
		TAKEYASU Nobuyuki, Associate Professor
Organic Synthetic Chemistry	Synthetic Carbohydrate Chemistry	HANAYA Tadashi, Professor

2. Department of Biological Science

Research Areas	Class Subjects	Instructors
Molecular Genetics	Molecular and Developmental Genetics	NAKAGOSHI Hideki, Professor
	Biological Chemistry of Gene Regulation	ABO Tatsuhiko, Associate Professor
	Bacterial Gene Evolution	TOMINAGA Akira, Associate Professor
Molecular Cell Biology	Fungal Molecular Cytology	TAGA Masatoki, Professor ☆
Neural Control of Behavior	Behavioral Neurobiology	SAKAMOTO Hirotaka, Associate Professor
	Integrative Social Neuroscience	TAKEUCHI Hideaki, Associate Professor
Environmental Biology and Chronobiology	Chronobiology	TOMIOKA Kenji, Professor
	Chronoecology	YOSHII Taishi, Associate Professor
Chemical Correlation and Control	Chemical Correlation and Control	(To Be Determined)
	Adaptational Zoology	SAKAMOTO Tatsuya, Professor
	Humoral Regulation of Cell Function	TAKEUCHI Sakae, Professor
Developmental Biology	Developmental Genetics	UEDA Hitoshi, Professor
	Plant Developmental Genetics	TAKAHASHI Taku, Professor
	Regeneration Biology	SATOH Akira, Associate Professor
	Plant Cell Biology	MOTOSE Hiroyasu, Associate Professor

A name marked with a star (☆) is scheduled for retirement as of March 31, 2018

3. Department of Earth System Science

Research Areas	Class Subjects	Instructors
Dynamic Geology	Advanced Geology	SUZUKI Shigeyuki, Professor
	Crustal Evolution	NAKAMURA Daisuke, Associate Professor
	Petrology of Fluid-Rock Interaction	NOZAKA Toshio, Associate Professor
Physics of the Earth and Planetary Interior	Earthquake Physics	TAKENAKA Hiroshi, Professor
	Mineral Physics	URAKAWA Satoru, Professor
	Seismotectonics	KUMAMOTO Takashi, Professor
	Paleomagnetism and Rock Magnetism	UNO Koji, Professor
	Active Tectonics	MATSUTA Nobuhisa, Professor
Geochemistry and Cosmochemistry	Solar System Chemistry	YAMASHITA Katsuyuki, Associate Professor
	Carbonate Geochemistry	INOUE Mayuri, Associate Professor
Atmospheric Sciences	Atmospheric and Cryospheric Radiation	AOKI Teruo, Professor
	Physical Climatology	NOZAWA Toru, Professor
	Atmospheric Water Cycle and Climate Systems	KATO Kuranoshin, Professor
	Science of Planetary Surface Environment	HASHIMOTO George L, Associate Professor

③ Division of Interdisciplinary Science

1. Department of Interdisciplinary Science

Research Areas	Class Subjects	Instructors
Mathematical Analysis	Mathematical Theory on Traveling Waves	TANIGUCHI Masaharu, Professor
	Stochastic Differential Equations	KUSUOKA Seiichiro, Associate Professor
Extreme Quantum Physics	Experimental Quantum Physics	YOSHIMURA Koji, Professor
	Fundamental Atomic Physics	YOSHIMI Akihiro, Associate Professor
Physics of Quantum Universe	Atomic, Molecular, and Optical Physics	UETAKE Satoshi, Associate Professor
Molecular Physiology	Light Energy Metabolism	TAKAHASHI Yuichiro, Professor
		NISHIMURA Miho, Assistant Professor
Structural Biology	Structural Biology	SHEN Jian-Ren, Professor
		SUGA Michihiro, Associate Professor
		AKITA Fusamichi, Associate Professor
Coordination Chemistry	Advanced Coordination Chemistry	SUZUKI Takayoshi, Professor
Quantum Physics in Condensed Matter	Physics in Functional Materials	NOHARA Minoru, Professor
	Physics in Superconducting Materials	KUDO Kazutaka, Associate Professor
Physics of Solid Surfaces and Interfaces	Photoemission Spectroscopy of Solid Interfaces	YOKOYA Takayoshi, Professor
	Physical Properties of Thin Films	MURAOKA Yuji, Associate Professor
	Physics of Quantum Electronics	KOBAYASHI Kaya, Associate Professor
Quantum Many-Body Physics	Quantum Many-Body Physics	ICHIOKA Masanori, Professor
	Physics in Strongly Correlated Electron Systems	JESCHKE Harald Olaf, Special Contract Personnel Professor (Special Appointment) ●
	Quantum Transport Physics	ADACHI Hiroto, Associate Professor
Physical Chemistry of Surface and Interface	Physical Chemistry of Interface	KUBOZONO Yoshihiro, Professor
		EGUCHI Ritsuko, Assistant Professor
	Solid Material Science	GOTO Hidenori, Associate Professor
Theoretical Physical Chemistry	Statistical Mechanics	KOGA Kenichiro, Professor
		SUMI Tomonari, Associate Professor
Theoretical Chemistry	Theoretical Chemistry of Condensed Matter	TANAKA Hideki, Professor
		MATSUMOTO Masakazu, Associate Professor
Functional Organic Chemistry	Synthetic Organic Chemistry	NISHIHARA Yasushi, Professor
		IWASAKI Masayuki, Assistant Professor
		MORI Hiroki, Assistant Professor

If you would like to chose "● maked" instructor, please contact the office (P.8)

1. Department of Computer Science

Research Areas	Class Subjects	Instructors
Formal Language Science	Computer Model Theory	JIMBO Shuji, Senior Assistant Professor
Computer Engineering	Advanced Research in Computer Software	TANIGUCHI Hideo, Professor
	Advanced Research in Computer Hardware	NAGOYA Akira, Professor
	Parallel and Distributed Processing	YAMAUCHI Toshihiro, Associate Professor
	Software Design	NOMURA Yoshinari, Associate Professor
Pattern Information Processing	Pattern Understanding	SHAKUNAGA Takeshi, Professor ☆
	Natural Language Processing	TAKEUCHI Koichi, Senior Assistant Professor
Intelligent Design	Information Retrieval and Data Mining	OHTA Manabu, Professor
	Advanced Research in Applied Information System	GOTOH Yusuke, Associate Professor
Theory of Programming and Artificial Intelligence	Network Computation Theory	TAKAHASHI Norikazu, Professor
	Software Analytics	MONDEN Akito, Professor
	Theory of Concurrency	MURAKAMI Masaki, Professor ●

A name marked with a star (☆) is scheduled for retirement as of March 31, 2019

If you would like to chose "● maked" instructor, please contact the office (P.8)

2. Department of Information and Communication Systems

Research Areas	Class Subjects	Instructors
Information Transmission	Theory of Statistical Signal Processing	YAMANE Nobumoto, Associate Professor
Information System Design	High-Level Hardware Synthesis	KAGOTANI Hiroto, Senior Assistant Professor
Mobile Communications	Mobile Communications	UEHARA Kazuhiro, Professor
	Mobile Radio Transmission	TOMISATO Shigeru, Associate Professor
Multimedia Radio Systems	Multimedia Radio Systems	DENNO Satoshi, Professor
Distributed System Design	Theory of Distributed Algorithms	FUNABIKI Nobuo, Professor
	Advanced Information Hiding Techniques	KURIBAYASHI Minoru, Associate Professor
Optical and Electromagnetic Waves	Optical and Electromagnetic Waves and Circuits	TOYOTA Yoshitaka, Professor
	Digital EMC Design	TOYOTA Yoshitaka, Professor
Information Security	Cryptography Design	NOGAMI Yasuyuki, Professor
	High Reliable Communication	KUSAKA Takuya, Senior Assistant Professor
Network Systems	Network Systems	FUKUSHIMA Yukinobu, Associate Professor

3. Department of Electrical and Electronic Engineering

Research Areas	Class Subjects	Instructors
Applied Superconductivity Engineering	High Tc Superconductor Engineering	KIM Seok Beom, Professor
	Applied Superconductivity Machinery	UEDA Hiroshi, Associate Professor
Electric Power Conversion System Engineering	Power Quality	HIRAKI Eiji, Professor
	Superconducting Machinery Design	NANATO Nozomu, Associate Professor
Power System Control Engineering	Power Conversion & Control Theory	FUNABIKI Shigeyuki, Professor ☆
	Distributed Parameter Systems	IMAI Jun, Associate Professor
Microwave Circuits	Microwave Circuit Analysis	SANAGI Minoru, Associate Professor
	Microwave Circuit Design	SANAGI Minoru, Associate Professor
Nanodevice and Materials Engineering	Introduction to Nanotechnology for Energy Research	HAYASHI Yasuhiko, Professor
	Materials Properties	YAMASHITA Yoshifumi, Associate Professor
Multiscale Device Design	Multiscale Numerical Analysis	TSURUTA Kenji, Professor
	Functional Materials and Devices	TSURUTA Kenji, Professor
Optoelectronic and Electromagnetic Wave Engineering	Photonics Device Engineering	FUKANO Hideki, Professor
	Wireless Power Transmission Systems	FUJIMORI Kazuhiro, Associate Professor

A name marked with a star (☆) is scheduled for retirement as of March 31, 2019

4. Department of Intelligent Mechanical Systems

Research Areas	Class Subjects	Instructors
Advanced System Safety	Environmental Safety System Engineering	SATO Haruo, Associate Professor
Intelligent Adaptive and Learning System	Motion Control of Robotic Manipulator	MINAMI Mamoru, Professor
	Construction Methodology of Robot System	MATSUNO Takayuki, Associate Professor
Intelligent System Organization and Management	Intelligent Human Interface Engineering	MURATA Atsuo, Professor
	Intelligent Process Systematization	HAYAMI Takehito, Senior Assistant Professor
Production Intelligence	Selected Topics in Systems Management	ARIZONO Ikuo, Professor
	Decision Making for Production	YANAGAWA Yoshinari, Associate Professor
Intelligent Mechanical Control	Intelligent Mechanical Control System	HIRATA Kentaro, Professor
	Intelligent Mechanical Control Elements	NAKAMURA Yukinori, Senior Assistant Professor
System Integration	Micro Sensors and Actuators	KANDA Takefumi, Professor
	Actuator Engineering	WAKIMOTO Shuichi, Associate Professor
Mechatronic Systems	Mechatronic Systems	WATANABE Keigo, Special Contract Personnel Professor (Special Appointment) ●

If you would like to choose "● marked" instructor, please contact the office (P.8)

5. Department of Advanced Mechanics

Research Areas	Class Subjects	Instructors
Structural Materials Engineering	Prediction and Control of Microstructure and Mechanical Properties of Metals	OKAYASU Mitsuhiro, Professor
	Materials Analysis	TAKEMOTO Yoshito, Associate Professor
Applied Solid Mechanics	Solid Engineering	TADA Naoya, Professor
	Materials Design	UEMORI Takeshi, Associate Professor
Machine Design and Tribology	Advanced Machine Design	FUJII Masahiro, Professor
Nontraditional Machining	High Energy Beam Machining	OKADA Akira, Professor
	Nontraditional Micro-machining	OKAMOTO Yasuhiro, Associate Professor
Manufacturing Engineering	Advanced Precision Machining Technology	OHASHI Kazuhito, Professor
	Advanced Manufacturing System Design Engineering	KODAMA Hiroyuki, Senior Assistant Professor
Fluid Dynamics	Aerospace Propulsion Engineering	KOUCHI Toshinori, Associate Professor
Heat Transfer Engineering	Heat Transfer of Multi-phase Flow	HORIBE Akihiko, Professor
Heat Power Engineering	Heat Power Engine Engineering	TOMITA Eiji, Professor
	Laser-aided Diagnostics	KAWAHARA Nobuyuki, Associate Professor

⑤ Division of Applied Chemistry

1. Department of Applied Chemistry

Research Areas	Class Subjects	Instructors
Inorganic Materials	Thin Films of Inorganic Materials	FUJII Tatsuo, Professor
	Chemistry of Functional Inorganic Materials	KANO Jun, Associate Professor
Solid State Chemistry	Ceramics Materials	KISHIMOTO Akira, Professor
	Material Electrochemistry	TERANISHI Takashi, Associate Professor
Interface Process Engineering	Advanced Interface Design	ONO Tsutomu, Professor
Fluid and Particle Process Engineering	Advance in Particle Characteristics	GOTOH Kuniaki, Professor
	Thermal Transport Phenomena	NAKASO Koichi, Associate Professor
Bioprocess Engineering	Design of Biocatalysts and Bioprocesses	IMAMURA Koreyoshi, Professor
	Interface Science and Technology for Biomaterials	ISHIDA Naoyuki, Associate Professor
Synthetic Process Chemistry	Green Process Chemistry	SUGA Seiji, Professor
	Synthetic Processes of Organic Materials	MITSUDO Koichi, Associate Professor
Organometallic Chemistry	Organometallic Chemistry	TAKAI Kazuhiko, Professor
Synthetic Organic Chemistry	The Logic for Organic Synthesis	EMA Tadashi, Professor
	Mechanisms of Organic Reactions	TAKAISHI Kazuto, Senior Assistant Professor
Bioorganic Chemistry	Chemistry of Biological Reactions	SAKAKURA Akira, Professor
	Chemistry of Natural Product Synthesis	HAYAKAWA Ichiro, Associate Professor
Heteroatom Chemistry	Organic Electron Transfer Chemistry	KUROBOSHI Manabu, Associate Professor
Industrial Catalysis	Chemistry of Homogeneous Catalysts	OSHIKI Toshiyuki, Senior Assistant Professor
Polymeric Materials	Physical Properties of Polymers	UCHIDA Tetsuya, Associate Professor
	Fundamentals of Polymer Solid Materials	OKIHARA Takumi, Senior Assistant Professor
Functional Molecular Engineering	Molecular Technology	NISHINA Yuta, Associate Professor