

Application Guidelines for Doctor's Course
October 2021/ April 2022

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	6
Earth, Life, and Molecular Sciences	11
Interdisciplinary Science	10
Industrial Innovation Sciences	18
Applied Chemistry	5
Total	50

Note 1: The admission quotas presented above are for FY 2022 (April 2022) enrollment. Applications of new and advancing students for April 2022 enrollment will be accepted three times a year. **If the number of admission quota is satisfied by the second submission, the third time will not be conducted.**

Note 2: Each division course of study will accept a small number of applications as new and advancing students for October 2021 enrollment.

Note 3: The admission quota of each division shows the number of applicants who will be selected through screening for advancement.

III. Guidelines for Screening for Advancement (Time of Advancement: October 2021/ April 2022)

1. Eligibility for Application

Okayama University Students who are expected to complete the master's program or masters' course at the graduate school by March 2022, (or in case of October 2021 advancement, by September 2021).

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.)

Please note that some application documents can be downloaded from the website. Applicants must obtain other application documents, etc. directly by the office in charge (page15 "7 Other" (8)) or by mail (page15 "7 Other" (8)).

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

2) Application Periods

Examination for October 2021 Advancement		August 2, 2021 to August 3, 2021
Examination for April 2022 Advancement	First Submission Period	
	Second Submission Period	January 27, 2022 to January 28, 2022
	Third Submission Period	February 14, 2022 to February 15, 2022

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: 086-251-8810

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) , Admission Ticket for the Examination and Photograph	Fill out necessary items on the forms prescribed by Graduate School of Natural Science and Technology personally by the applicant. 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.
〈2〉 Transcript of Graduate School	Submit a certificate issued by the master’s program (master’s course)
〈3〉 Report of Research Progress	Use the form (approx. 2,000 words) prescribed by the Graduate School of Natural Science and Technology
〈4〉 Research Planning Sheet	Use the form prescribed by Graduate School of Natural Science and Technology.
〈5〉 Sticker of Address	Fill out the necessary items.
〈6〉 Copy of Residence Card (both side) or Original copy of Residence certificate	If you are not a Japanese citizen, please submit following documents for the purpose of confirmation of nationality, name, etc. • A copy of both sides of the residence card or Original copy of Residence certificate (issued by the city of municipality. The status of residence and residence must be specified) • A copy of passport (the page with your name, nationality, and photo)
〈7〉 Copy of Passport	

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. 15).

Examination for October 2021 Advancement		Around August 11, 2021
Examination for April 2022 Advancement	First Submission Period	
	Second Submission Period	Around February 3, 2022
	Third Submission Period	February 17, 2022

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.

Examination		Date and Time	Examination Category	Place of Examination	Due date
Examination for October 2021 Advancement		August 23, 2021, at 9:30 a.m.	Oral Examination	A prospective supervisor will notify applicants of the location later.	August 18, 2021
Examination for April 2022 Advancement	First Submission Period				February 2, 2022
	Second Submission Period	February 7, 2022, at 9:30 a.m.			February 17, 2022
	Third Submission Period	February 18, 2022, at 9:30 a.m.			

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 the due date, please inquire to the office in charge (P. 15).

5. Announcement of Successful Applicants

Successful applicants will be announced on a bulletin board.

Examination		Date	Place of Bulletin Board
Examination for October 2021 Advancement		September 8, 2021, at 10:00 a.m.	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)
Examination for April 2022 Advancement	First Submission Period		
	Second Submission Period	March 2, 2022, at 10:00 a.m.	
	Third Submission Period	March 7, 2022, at 10:00 a.m.	

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/ja/admission/>).

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

6. 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.

October 2021 Entrants: September 17, 2021 to September 21, 2021

April 2022 Entrants: March 14, 2022 to March 15, 2022

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)

※ 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: 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) Distance Learning Scholarship for Working Students of Graduate School Doctor's Course

This scholarship is for working students who do not receive any financial support from their companies, etc. for their study, and those who have a distance of 50 km or more to Okayama University from either their place of work or home, where the distance to Okayama University is shorter (hereinafter referred to as "the commuting place"), and also those who will enroll (or advance to) the University in April with excellent grades.

The amount of the scholarship is 120,000 Japanese yen to 240,000 yen per year, depending on the distance from the commuting place to the University. The period of payment is within the standard period of study (3 years). Payment will be suspended during the period of leave of absence from the University.

If you wish to receive the scholarship, please check the eligibility requirements at the following URL.

However, even in the case of recruitment, if the number of eligible applicants of this scholarship is reached in the first application period, the application for this scholarship will not be accepted in the second application period. In any case, we are not accepting applications for this scholarship for the third application period.

URL <https://www.gnst.okayama-u.ac.jp/ja/scholarship>

(5) Okayama University has established the "Security Export Control Regulations of Okayama University" under the Security Export Control System based on the "Foreign Exchange and Foreign Trade Act (FEFTA)", and conducts

strict screening when accepting foreign students. If you are subjected to this regulation or FEFTA, you may not be accepted or your desired research activities may be restricted.

For details concerning the Security Export Control System in Japan, please refer to the following website.

URL ; <https://www.meti.go.jp/policy/anpo/englishpage.html>

(6) How to request application documents by mail

- 1) Write “Request for Application Documents of Graduate School of Natural Science and Technology, Doctoral Program” in red on the envelope surface.
- 2) Please enclose the following things with the envelope;
 - A stamped and self-addressed envelope. (Stamp:140yen, Envelope size:240mm×332mm)
 - A memo written your contact (phone number and e-mail address) and name of your prospective professor who has accepted / will accept.
- 3) Send the envelope with all submissions to the office in charge.
Please note that the mailing address is limited to Japan. (No shipping to foreign countries)

(7) Emergency Warning or Weather Warnings

The entrance examination day and the start time may be postponed in case of Emergency Warning or Weather Warnings. Therefore, please check the website of the Graduate School before the examination.

https://www.gnst.okayama-u.ac.jp/ja/admission/nittei_henkou/

(8) 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: 086-251-8810

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.

Guide to Divisions (As of April 1, 2021)

【1】 Division of Mathematics and Physics

1. Department of Mathematics

Research Areas	Subjects	Instructors
Algebra	Theory of Representations	ISHIKAWA Masao, Professor
	Commutative Algebra	TERAI Naoki, Professor
	Model Theory	TANAKA Katsumi, Professor
	Rings and Categories of Modules	SUZUKI Takeshi, Associate Professor
	Algebraic Geometry	ITO Atsushi, Associate Professor
	Seminar in Algebra	Faculty Members in the Research Area
Geometry	Geometric Structures	KONDO Kei, Professor
	Geometry and Mathematical Physics	JINZENJI Masao, Professor
	Advanced Topics in Topology	MONDEN Naoyuki, Associate Professor
	Stable Homotopy Theory	TORII Takeshi, Professor
	Seminar in Geometry	Faculty Members in the Research Area
Analysis	Applied Analysis	UEHARA Takato, Associate Professor
	Nonlinear Partial Differential Equation	OSHITA Yoshihito, Professor
	Seminar in Analysis	Faculty Members in the Research Area

2. Department of Physics

Research Areas	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
	Seminar in Quantum Structural Physics in Correlated Matter	Faculty Members in the Research Area
Quantum Physics in Correlated Matter	Magnetism in Correlated Matter	MINO Michinobu, Professor
	Seminar in Quantum Physics in Correlated Matter	Faculty Members in the Research Area
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 ☆
	Seminar in Physics in Advanced Functional Materials	Faculty Members in the Research Area
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
	Seminar in Materials Physics in Extreme Environments	Faculty Members in the Research Area
Low Temperature Condensed Matter Physics	Superconductivity	ZHENG Guo-Qing, Professor
	Physical Properties of Solids in High Magnetic Fields	KAWASAKI Shinji, Associate Professor
	Seminar in Low Temperature Condensed Matter Physics	Faculty Members in the Research Area
Physics of Condensed Matter	Quantum Theory for Solid-State Spectroscopy	OKADA Kozo, Professor
	Seminar in Physics of Condensed Matter	Faculty Members in the Research Area
Astroparticle Physics	Cosmology	ISHINO Hirokazu, Professor
	Seminar in Astroparticle Physics	Faculty Members in the Research Area
High Energy Physics	High Energy Particle Physics	KOSHIO Yusuke, Associate Professor
	Seminar in High Energy Physics	Faculty Members in the Research Area

A name marked with a star (☆) is scheduled for retirement as of March 31, 2022

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

Research Areas	Subjects	Instructors
Advance Synchrotron Radiation Physics	Condensed Matter Physics using Synchrotron Radiation	MIZUMAKI Masaitiro, Guest Professor
	Instrumentation for Synchrotron Radiation Physics	TAMENORI Yusuke, Guest Professor
	Application of Condensed Matter Physics Using Synchrotron Radiation	SATO Masugu, Guest Professor
	Structural Physics using Synchrotron Radiation	ISHII Kenji, Guest Professor
	Seminar in Advance Synchrotron Radiation Physics	Faculty Members in the Research Area

【2】 Division of Earth, Life, and Molecular Sciences

1. Department of Chemistry

Research Areas	Subjects	Instructors
Structural Chemistry	Solid Structural Chemistry	ISHIDA Hiroyuki, Professor ☆
	Seminar in Structural Chemistry	GOTOH Kazuma, Associate Professor
Spectrochemistry	Laser Spectroscopy	TANG Jian, Professor
	Seminar in Spectrochemistry	Faculty Members in the Research Area
Synthetic and Physical Organic Chemistry	Organic Photochemistry	OKAMOTO Hideki, Associate Professor
	Seminar in Synthetic and Physical Organic Chemistry	Faculty Members in the Research Area
Inorganic Chemistry	Surface Inorganic Chemistry	OHKUBO Takahiro, Associate Professor
	Functional Coordination Chemistry	SUNATSUKI Yukinari, Assistant Professor
	Seminar in Inorganic Chemistry	Faculty Members in the Research Area
Organic Chemistry	Natural Products Chemistry	KADOTA Isao, Professor
	Seminar in Organic Chemistry	TAKAMURA Hiroyoshi, Associate Professor
Analytical Chemistry	Analytical Chemistry	KANETA Takashi, Professor
	Seminar in Analytical Chemistry	TAKEYASU Nobuyuki, Associate Professor
Organic Synthetic Chemistry	Synthetic Carbohydrate Chemistry	HANAYA Tadashi, Professor
	Seminar in Organic Synthetic Chemistry	Faculty Members in the Research Area
Nanochemistry	Advanced Nanoscience	FUJIWARA Masazumi, Associate Professor
	Seminar in Nanochemistry	Faculty Members in the Research Area

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2. Department of Biological Sciences

Research Areas	Class Subjects	Instructors
Molecular Genetics	Molecular and Developmental Genetics	NAKAGOSHI Hideki, Professor
	Biological Chemistry of Gene Regulation	ABO Tatsuhiko, Professor
	Seminar in Molecular Genetics	Faculty Members in the Research Area
Plant Ecology and Evolution	Evolutionary Ecology	MIMURA Makiko, Associate Professor
	Seminar in Plant Ecology and Evolution	Faculty Members in the Research Area
Neural Control of Behavior	Behavioral Neurobiology	SAKAMOTO Hirotaka, Associate Professor
	Neural Information Processing	MATSUI Teppei, Associate Professor
	Seminar in Neural Control of Behavior	Faculty Members in the Research Area
Environmental Biology and Chronobiology	Marine Genomics	HAMADA Mayuko, Associate Professor
	Chronoecology	YOSHII Taishi, Associate Professor
	Seminar in Environmental Biology and Chronobiology	Faculty Members in the Research Area
Chemical Correlation and Control	Adaptational Zoology	SAKAMOTO Tatsuya, Professor
	Humoral Regulation of Cell Function	TAKEUCHI Sakae, Professor
	Endocrinology	AIZAWA Sayaka, Associate Professor
	Seminar in Chemical Correlation and Control	Faculty Members in the Research Area
Developmental Biology	Developmental Genetics	UEDA Hitoshi, Professor
	Plant Developmental Genetics	TAKAHASHI Taku, Professor
	Regeneration Biology	SATO Akira, Associate Professor
	Plant Cell Biology	MOTOSE Hiroyasu, Associate Professor
	Seminar in Developmental Biology	Faculty Members in the Research Area

3. Department of Earth System Science

Research Areas	Subjects	Instructors
Dynamic Geology	Material Science of Earth and Planetary Deep Interiors	TERASAKI Hidenori, Professor
	Crustal Evolution	NAKAMURA Daisuke, Associate Professor
	Petrology of Fluid-Rock Interaction	NOZAKA Toshio, Associate Professor
	Seminar in Dynamic Geology	Faculty Members in the Research Area
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
	Seminar in Physics of the Earth and Planetary Interior	Faculty Members in the Research Area
	Solar System Chemistry	YAMASHITA Katsuyuki, Associate Professor
Geochemistry and Cosmochemistry	Carbonate Geochemistry	INOUE Mayuri, Professor
	Seminar in Geochemistry and Cosmochemistry	Faculty Members in the Research Area
Atmospheric Sciences	Physical Climatology	NOZAWA Toru, Professor
	Atmospheric Water Cycle and Climate Systems	KATO Kuranoshin, Professor
	Science of Planetary Surface Environment	HASHIMOTO George L, Professor
	Earth System Dynamics and Environment	MICHIBATA Takuro, Associate Professor
	Seminar in Atmospheric Sciences	Faculty Members in the Research Area

【3】 Division of Interdisciplinary Science

1. Department of Interdisciplinary Science

Research Areas	Subjects	Instructors
Mathematical Analysis	Mathematical Theory on Traveling Waves	TANIGUCHI Masaharu, Professor
	Stochastic Differential Equations	TAGUCHI Dai, Associate Professor
	Seminar in Mathematical Analysis	Faculty Members in the Research Area
Extreme Quantum Physics	Experimental Quantum Physics	YOSHIMURA Koji, Professor
	Fundamental Atomic Physics	YOSHIMI Akihiro, Associate Professor
	Seminar in Extreme Quantum Physics	Faculty Members in the Research Area
Physics of Quantum Universe	Atomic, Molecular, and Optical Physics	UETAKE Satoshi, Associate Professor
	Seminar in Physics of Quantum Universe	Faculty Members in the Research Area
Molecular Physiology	Light Energy Metabolism	TAKAHASHI Yuichiro, Professor ☆
	Seminar in Molecular Physiology	Faculty Members in the Research Area
Structural Biology	Structural Biology	SHEN Jian-Ren, Professor
		SUGA Michihiro, Associate Professor
	Seminar in Structural Biology	AKITA Fusamichi, Associate Professor
Coordination Chemistry	Advanced Coordination Chemistry	SUZUKI Takayoshi, Professor
	Seminar in Coordination Chemistry	Faculty Members in the Research Area
Quantum Physics in Condensed Matter	Advanced Quantum Condensed Matter Physics	KASAHARA Shigeru, Professor
	Seminar in Quantum Physics in Condensed Matter	Faculty Members in the Research Area
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
	Seminar in Physics of Solid Surfaces and Interfaces	Faculty Members in the Research Area
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)
		OTSUKI Junya, Associate Professor
	Quantum Transport Physics	ADACHI Hiroto, Associate Professor
Seminar in Quantum Many-Body Physics	Faculty Members in the Research Area	
Physical Chemistry of Surface and Interface	Physical Chemistry of Interface	KUBOZONO Yoshihiro, Professor
	Solid Material Science	EGUCHI Ritsuko, Assistant Professor
	Seminar in Physical Chemistry of Surface and Interface	GOTO Hidenori, Associate Professor
Theoretical Physical Chemistry	Statistical Mechanics	KOGA Kenichiro, Professor
	Seminar in Theoretical Physical Chemistry	SUMI Tomonari, Associate Professor
		Faculty Members in the Research Area
Theoretical Chemistry	Theoretical Chemistry of Condensed Matter	MATSUMOTO Masakazu, Associate Professor
	Seminar in Theoretical Chemistry	Faculty Members in the Research Area
Functional Organic Chemistry	Synthetic Organic Chemistry	NISHIHARA Yasushi, Professor
	Seminar in Functional Organic Chemistry	MORI Hiroki, Assistant Professor
		Faculty Members in the Research Area

A name marked with a star (☆) is scheduled for retirement as of March 31, 2022

【4】 Division of Industrial Innovation Sciences

1. Department of Computer Science

Research Areas	Subjects	Instructors
Computer Engineering	Advanced Research in Computer Software	YAMAUCHI Toshihiro, Professor
	Advanced Research in Computer Hardware	WATANABE Minoru, Professor
	Software Design	NOMURA Yoshinari, Associate Professor
	Seminar in Computer Engineering	Faculty Members in the Research Area
Pattern Information Processing	Intelligent Image Information Processing	MOROOKA Ken'ichi, Professor
	Natural Language Processing	TAKEUCHI Koichi, Associate Professor
	Seminar in Pattern Information Processing	Faculty Members in the Research Area
Intelligent Design	Information Retrieval and Data Mining	OHTA Manabu, Professor
	Advanced Research in Applied Information System	GOTOH Yusuke, Associate Professor
	Seminar in Intelligent Design	Faculty Members in the Research Area
Theory of Programming and Artificial Intelligence	Network Computation Theory	TAKAHASHI Norikazu, Professor
	Software Analytics	MONDEN Akito, Professor
	Human Behavior Analysis	YÜCEL Zeynep, Associate Professor
	Seminar in Theory of Programming and Artificial Intelligence	Faculty Members in the Research Area

2. Department of Information and Communication Systems

Research Areas	Subjects	Instructors
Information Transmission	Theory of Statistical Signal Processing	YAMANE Nobumoto, Associate Professor ☆
	Seminar in Information Transmission	Faculty Members in the Research Area
Mobile Communications	Mobile Communications	UEHARA Kazuhiro, Professor
	Mobile Radio Transmission	TOMISATO Shigeru, Associate Professor
	Seminar in Mobile Communications	Faculty Members in the Research Area
Multimedia Radio Systems	Multimedia Radio Systems	DENNO Satoshi, Professor
	Seminar in Multimedia Radio Systems	Faculty Members in the Research Area
Distributed System Design	Theory of Distributed Algorithms	FUNABIKI Nobuo, Professor
	Advanced Information Hiding Techniques	KURIBAYASHI Minoru, Associate Professor
	Seminar in Distributed System Design	Faculty Members in the Research Area
Optical and Electromagnetic Waves	Optical and Electromagnetic Waves and Circuits	TOYOTA Yoshitaka, Professor
	Digital EMC Design	TOYOTA Yoshitaka, Professor
	Seminar in Optical and Electromagnetic Waves	Faculty Members in the Research Area
Information Security	Cryptography Design	NOGAMI Yasuyuki, Professor
	High Reliable Communication	KUSAKA Takuya, Senior Assistant Professor
	Seminar in Information Security	Faculty Members in the Research Area
Network Systems	Network Systems	FUKUSHIMA Yukinobu, Associate Professor
	Seminar in Network Systems	Faculty Members in the Research Area
Power System and Energy Network Engineering	Advanced Energy Network Engineering	TAKAHASHI Akiko, Associate Professor
	Seminar in Power System and Energy Network Engineering	Faculty Members in the Research Area

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3. Department of Electrical and Electronic Engineering

Research Areas	Subjects	Instructors
Applied Superconductivity Engineering	High Tc Superconductor Engineering	KIM Seok Beom, Professor
	Applied Superconductivity Machinery	UEDA Hiroshi, Associate Professor
	Seminar in Applied Superconductivity Engineering	Faculty Members in the Research Area
Electric Power Conversion System Engineering	Power Quality	HIRAKI Eiji, Professor
	Modern Power Electronics	UMETANI Kazuhiro, Associate Professor
	Seminar in Electric Power Conversion System Engineering	Faculty Members in the Research Area
Motor System Engineering	Motor Design Engineering	TAKEMOTO Masatsugu, Professor
	Seminar in Motor System Engineering	Faculty Members in the Research Area
Electronic Control Engineering	Distributed Parameter Systems	IMAI Jun, Associate Professor
	Seminar in Electronic Control Engineering	Faculty Members in the Research Area
Microwave Circuits	Microwave Circuit Analysis	SANAGI Minoru, Associate Professor
	Microwave Circuit Design	SANAGI Minoru, Associate Professor
	Seminar in Microwave Circuits	Faculty Members in the Research Area
Nanodevice and Materials Engineering	Introduction to Nanotechnology for Energy Research	HAYASHI Yasuhiko, Professor
	Materials Properties	YAMASHITA Yoshifumi, Associate Professor
	Seminar in Nanodevice and Materials Engineering	Faculty Members in the Research Area
Multiscale Device Design	Multiscale Numerical Analysis	TSURUTA Kenji, Professor
	Functional Materials and Devices	TSURUTA Kenji, Professor
	Seminar in Multiscale Device Design	Faculty Members in the Research Area
Optoelectronic and Electromagnetic Wave Engineering	Photonics Device Engineering	FUKANO Hideki, Professor
	Wireless Power Transmission Systems	FUJIMORI Kazuhiro, Associate Professor
	Seminar in Optoelectronic and Electromagnetic Wave Engineering	Faculty Members in the Research Area

4. Department of Intelligent Mechanical Systems

Research Areas	Subjects	Instructors
Intelligent Systems Optimization	Advanced Course on Intelligent Systems Optimization	NISHI Tatsushi, Professor
	Environmental Safety System Engineering	SATO Haruo, Associate Professor
	Seminar in Intelligent Systems Optimization	Faculty Members in the Research Area
Intelligent Adaptive and Learning System	Motion Control of Robotic Manipulator	MINAMI Mamoru, Professor ☆
	Construction Methodology of Robot System	MATSUNO Takayuki, Associate Professor
	Seminar in Intelligent Adaptive and Learning System	Faculty Members in the Research Area
Intelligent System Organization and Management	Intelligent Human Interface Engineering	MURATA Atsuo, Professor
	Seminar in Intelligent System Organization and Management	Faculty Members in the Research Area
Production Intelligence	Selected Topics in Systems Management	ARIZONO Ikuo, Professor
	Decision Making for Production	YANAGAWA Yoshinari, Associate Professor
	Seminar in Production Intelligence	Faculty Members in the Research Area
Intelligent Mechanical Control	Intelligent Mechanical Control System	HIRATA Kentaro, Professor
	Intelligent Mechanical Control Elements	NAKAMURA Yukinori, Senior Assistant Professor
	Seminar in Intelligent Mechanical Control	Faculty Members in the Research Area
System Integration	Micro Sensors and Actuators	KANDA Takefumi, Professor
	Actuator Engineering	WAKIMOTO Shuichi, Associate Professor
	Seminar in System Integration	Faculty Members in the Research Area
Mechatronic Systems	Mechatronic Systems	WATANABE Keigo, Special Contract Personnel Professor (Special Appointment)
	Biological Information Systems	SHIBANOKI Taro, Associate Professor
	Seminar in Mechatronic Systems	Faculty Members in the Research Area

A name marked with a star (☆) is scheduled for retirement as of March 31, 2022

5. Department of Advanced Mechanics

Research Areas	Subjects	Instructors
Structural Materials Engineering	Prediction and Control of Microstructure and Mechanical Properties of Metals	OKAYASU Mitsuhiro, Professor
	Materials Analysis	TAKEMOTO Yoshito, Associate Professor
	Seminar in Structural Materials Engineering	Faculty Members in the Research Area
Applied Solid Mechanics	Solid Engineering	TADA Naoya, Professor
	Materials Design	UEMORI Takeshi, Associate Professor
	Seminar in Applied Solid Mechanics	Faculty Members in the Research Area
Machine Design and Tribology	Advanced Machine Design	FUJII Masahiro, Professor
	Applied Surface Engineering	SHIOTA Tadashi, Associate Professor
	Seminar in Machine Design and Tribology	Faculty Members in the Research Area
Nontraditional Machining	High Energy Beam Machining	OKADA Akira, Professor
	Nontraditional Micro-machining	OKAMOTO Yasuhiro, Associate Professor
	Seminar in Nontraditional Machining	Faculty Members in the Research Area
Manufacturing Engineering	Advanced Precision Machining Technology	OHASHI Kazuhito, Professor
	Advanced Manufacturing System Design Engineering	KODAMA Hiroyuki, Senior Assistant Professor
	Seminar in Manufacturing Engineering	Faculty Members in the Research Area
Fluid Dynamics	Aerospace Propulsion Engineering	KOUCHI Toshinori, Professor
		SUZUKI Hiroki, Associate Professor
	Seminar in Fluid Dynamics	Faculty Members in the Research Area
Heat Transfer Engineering	Heat Transfer of Multi-phase Flow	HORIBE Akihiko, Professor
	Utilization of Phase-change Phenomena	YAMADA Yutaka, Senior Assistant Professor
	Seminar in Heat Transfer Engineering	Faculty Members in the Research Area
Heat Power Engineering	Laser-aided Diagnostics	KAWAHARA Nobuyuki, Professor
	Seminar in Heat Power Engineering	Faculty Members in the Research Area

【5】 Division of Applied Chemistry

1. Department of Applied Chemistry

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