

Graduate School of Engineering  
Nagasaki University  
Doctoral Degree  
Application Guidelines

Department of Science and Technology

**2021, October Entrance for New Students**

**General Examination / Examination for Those Currently Employed /  
Examination for International Students  
(Summer Application)**

**2022, April Entrance for New Students**

**General Examination / Examination for Those Currently Employed /  
Examination for International Students  
(Summer / Winter Application)**

Graduate School of Engineering, Nagasaki University

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# Index

Admission Policy .....	1
2021, October Entrance for New Students (Summer Application)	
• General Examination / Examination for Those Currently Employed / Examination for International Students .....	3
2022, April Entrance for New Students (For Summer / Winter Applications)	
• General Examination / Examination for Those Currently Employed / Examination for International Students .....	13
Diploma Policy .....	22
Curriculum Policy .....	23
Faculty List and Research Focus .....	26

# Admission Policy of the Department of Science and Technology

## Graduate School of Engineering, Nagasaki University

### **1. Educational Philosophy and Aim of the Graduate School of Engineering**

(Educational Philosophy)

As an educational and research base for advanced engineering which coexists with nature and commits to the sustainable development of human society, the Graduate School of Engineering will foster highly professional engineers and researchers who possess professional and interdisciplinary knowledge along with as high expertise across a wide range of engineering topics, and who will be able to play an active role in the international field. We will also contribute to promoting innovative science and technology of next generation through conducting pioneering and innovative research.

(Aim)

To develop in students professional and interdisciplinary knowledge along with high expertise across a wide range of engineering topics, and to cultivate their skills to explore and solve problems as well as their capabilities to conduct internationally pioneering research and development.

### **2. Educational Philosophy and Aim of the Department of Science and Technology of the Graduate School of Engineering**

The Department of Science and Technology, the Graduate School of Engineering, aims to foster human resources who will contribute to the development of innovative science and technology of next generation in order to realize an eco-friendly society that serves quality of life. This includes 1) constructing highly advanced mechanical system, social infrastructure system, and electrical information system, 2) discovering new materials and inventing their new functions, and 3) promoting technologies that will also contribute to the development of Asian and African countries.

### **3. Admission Policy of the Department of Science and Technology of the Graduate School of Engineering**

The Department of Science and Technology expects its students to possess the following academic skills, competencies and attributes:

- High-level and fundamental academic skills as well as professional practical skills (as equivalent to master's level) in either discipline of Systems Engineering (mechanical system and social infrastructure system), Electrical Engineering and Computer Science, Chemistry and Materials Science, and Water and Environmental Science.
- Willingness to contribute to the promotion of innovative science and technology of next generation.
- Willingness to acquire more advanced professional knowledge and skills as well as to apply these knowledge and skills in innovative research.
- Sense of ethics and high security awareness required as an engineer and/or researcher.

- Strong willingness to help respond to the demand of industry and society.
- Knowledge and skills to explore and solve problems in a wide range of engineering topics.
- Communication skills in a global context.
- Strong willingness to contribute to a recycling-oriented society with respect to nature and ecosystem.

#### Appendix about the Screening Method

Evaluation methods for the required aptitude and its priority (most prioritized : ⊙, prioritized : ○)

Examination Type	General Examination	Examination for Those Currently Employed / Examination for International Students	Screening for Masters Graduates
	Writing or Interview/Oral Examination	Interview and Oral Examination	Writing or Interview/Oral Examination
Expected Competencies			
High-level and fundamental academic skills as well as professional practical skills (as equivalent to master's level)	⊙	⊙	⊙
Willingness to contribute to the promotion of innovative science and technology of next generation	○	○	○
Willingness to acquire more advanced professional knowledge and skills as well as to apply these knowledge and skills in innovative research	○	○	○
Sense of ethics and high security awareness required as an engineer and/or researcher	○	○	○
Strong willingness to help respond to the demand of industry and society	○	○	○
Knowledge and skills to explore and solve problems in a wide range of engineering topics	○	○	○
Communication skills in a global context	○	○	○
Strong willingness to contribute to a recycling-oriented society with respect to nature and ecosystem	○	○	○

2021, October Entrance  
(Summer Application)

General Examination  
Examination for Those Currently Employed  
Examination for International Students

## 1. Number of Students to be Admitted

Department	Entrance Examination Category	Program	Number of Students to be Admitted
Department of Science and Technology	<ul style="list-style-type: none"> <li>▪ General Examination</li> <li>▪ Examination For Those Currently Employed</li> <li>▪ Examination for International Students</li> </ul>	Systems Engineering	Four
		Electrical Engineering and Computer Science	
		Chemistry and Materials Science	
	Examination for International Students	Water and Environmental Science	

(Note) The number includes candidate(s) who apply under the “Screening for Masters Graduates, Graduate School of Engineering, Nagasaki University”.

(Note) If the number of successful candidates in the Winter application did not meet the number of acceptance, the remaining vacancies will be carried over to the Summer application.

Approximately number of acceptance in each course.

○Systems Engineering Program	} Two
○Electrical Engineering and Computer Science Program	
○Chemistry and Materials Science Program	
○Water and Environmental Science Program	

## 2. Application Requirements

For those who fulfilled one of the following requirements.

For candidate(s) under “Examinations for Those Currently Employed” must be working as a regular employee of a company at the time of application and has the consent from an authorized supervisor, as well as fulfilled one of the following requirements.

For candidates(s) under “Examination for International Students” must be non-Japanese citizens, (excluding foreigners with permanent residence permit) who fulfilled one of the following requirements.

- (1) Those who have obtained (or are expected to obtain by September, 2021) a master’s or a professional degree.
- (2) Those who have been conferred (or will be conferred by September, 2021) a master’s degree or a degree equivalent to a professional degree in countries other than Japan.
- (3) Those who have been conferred (or will be conferred by September, 2021) a master’s degree or a degree equivalent to a professional degree in Japan after the completion of required correspondence courses, conducted by an authorized school outside of Japan.
- (4) Those who have conferred (or are expected to conferred by September, 2021) a degree equivalent to a master’s or a professional degree after completing postgraduate courses at the foreign education institute in Japan, which is recognized by the Ministry of Education, Culture, Sports, Science.
- (5) Those who have completed the courses from the United Nations University and have been conferred (or are expected to be conferred by September, 2021) a degree equivalent to a master’s degree.

- (6) Those who have completed or will complete the education program at a foreign school, the United Nations University or an education facility specified in (4), and those who have passed or expected to pass by September, 2021 the examination as well as screening test prescribed in Article 16 of the Establish Standards of the Graduate School and have had their academic achievement recognized as equivalent to or greater than those with a master's degree. (See "3. Eligibility Preliminary Screening")
- (7) Those who are specified by the Ministry of Education Culture, Sports, Science. (1989 Ministry of Education, Public Notification No.118) as follows:
  - ① Those who have been engaged in research for more than two years at university or research institutes after their university graduation and have had their academic achievement through the relevant research result recognized as equivalent to or greater than those with a master's degree. (Refer to "3. Eligibility Preliminary Screening")
  - ② Those who have been engaged in research for more than two years at university or research institutes after completing 16 years of required school education in countries other than Japan, or completing 16 years of required school education by correspondence course conducted by foreign countries, in Japan, and have had their academic achievement recognized as equivalent to or greater than those with a master's degree through the relevant research result by the Graduate School of Engineering. (Refer to "3. Eligibility Preliminary Screening")
- (8) Those who have been deemed to have academic ability equivalent to or greater than those in the Graduate School through individual preliminary screening, and will be at least 24 years of age by September 30, 2021. (Refer to "3. Eligibility Preliminary Screening")

### 3. Eligibility Preliminary Screening

- (1) Candidates applying under the “Application Requirements (6), (7) or (8)” must submit the following documents to the Student Affairs Section for Graduate School of Engineering by April 16, 2021 (Fri).

Submission Documents	Note
Application for Preliminary Screening [Form 5]	Prescribed Application Form
Application Form [Form1]	Prescribed Application Form
Certified (original) copy of Graduation Certificate	Issued under the authority of the president of the university where applicant graduated from.
Official Transcript	Issued and officially sealed under the authority of the president of the university where applicant graduated from.
Research Achievement [Form 6]	Fill out with Thesis, Presentations, Research Progress, Academic Presentations (Only for those who have any) in the prescribed form
Research Progress Report [Form 7]	Describe the details of “Research Achievement [Form 6] ” in prescribed form with the copy of the evidence attached. (Reprints of thesis, papers and excerpts)
Qualified Certificate (Expected Qualified Certificate) (Only applicable for candidates who apply under the “ Eligibility Preliminary Screening (6)”)	Those who have passed or expected to pass the exam that equivalent to Qualifying Examination or those who apply under Eligibility Preliminary Screening (6) must submit the (expected) Qualified Certificate issued under the authority of the President or the Dean of the University.
Return Envelope for Preliminary Screening Result [No.3 Long Type (12 cm × 23.5 cm)]	A self-addressed return envelope with ¥374 worth of stamps affixed. (Express)

(\*) Forms are available for downloading from the home page “The Graduate School of Engineering, Nagasaki University”. (URL : [http://www.eng.nagasaki-u.ac.jp/english/contents/01\\_g\\_admission.html](http://www.eng.nagasaki-u.ac.jp/english/contents/01_g_admission.html))

- (2) Eligibility preliminary screening based on the submitted documents.

The results of Eligibility Preliminary Screening will be sent to candidates by May 13, 2021 (Thu). Those who are deemed eligible for application must follow the procedures set out in “4. Application Period” and “5. Application Procedures”.

### 4. Application Period

From June 7, 2021 (Mon) to June 11, 2021 (Fri)

- (1) Applications must be sent by registered express mail service and received by the deadline.

Postal Address : Student Affairs Section for the Graduate School of Engineering  
West District Division, Nagasaki University  
1-14 Bunkyo, Nagasaki 852-8521, Japan

- (2) Candidates may submit the documents in person between 9:00 to 17:00.



## 5. Application Procedures

Candidates must submit the following documents to the Student Affairs Section for the Graduate School of Engineering by the deadline.

\* Forms can be downloaded from the following link:

[http://www.eng.nagasaki-u.ac.jp/english/contents/01\\_g\\_admission.html](http://www.eng.nagasaki-u.ac.jp/english/contents/01_g_admission.html)

\* You can receive the payment transfer form of the entrance examination fee and the address sticker at the Student Affairs Section or ask them by mail (see “15. Other Information”).

Submission Documents	Note
Application Form [Form1]	Fill out the prescribed application form * Consult with your prospective academic advisor (Reference “Faculty List and Research Focus”) prior to fill in the form. Except for those already submitted for the eligibility preliminary screening.
Photo Card/ Admission Ticket / Payment of Certificate for the Entrance Examination Fee [Form2]	Attach your ID photos (size L 4cm x W 3 cm, upper body, no hat or cap, full face view, taken within the 3 months) on the prescribed Photo Card and Admission Ticket.
Certified (original) copy of Graduation Certificate or Expected Completion Certificate (Highest education degree)	Issued under the authority (Dean) of the president of the university where applicant graduated from. Except for those already submitted for the eligibility preliminary screening.
Official Transcript (Highest education degree)	Issued and officially sealed under the authority (Dean) of the president of the university where applicant graduated from. Except for those already submitted for the eligibility preliminary screening.
Research Achievement [Form 6]	Fill out dissertations, presentations, research report, and academic conference presentations in the prescribed form. (Only for those who have the performance results) Except for those already submitted for the eligibility preliminary screening.
Research Progress Report [Form 7]	Candidates must submit the detailed description of “Research Achievement [Form 6] ” with copy of the documents that serve as an evidence of success attached in the prescribed form. Except for those already submitted for the eligibility preliminary screening.
Dissertation Contents [Form 8]	Describe the abstract of Master’s Thesis in 1,000 words or less in the prescribed form. Except for candidates without master’s degree.
Abstract of Your Research Plan [Form 9]	Fill out the abstract of research plan in the prescribed form
Consent form of the Examination and Enrolment	Those who are employed by the government or any private company must submit the prescribed consent form signed by the head of the organization
Address Sticker	Candidates must fill in their name, address, and postcode accurately. If there are any changes after submission, candidates must notify immediately.

Submission Documents	Note
Return envelope for admission ticket [No.3 Long Type (12cm × 23.5cm)]	A self-addressed prescribed envelope with ¥374 worth of stamps affixed. (Express)
A proof of legal states in Japan (Foreign Candidates only)	A photo copy of the Visa or an Residence Card
Entrance Examination Fee ¥30,000	<p><b>(Payment Period)</b> From June 7, 2021 (Mon) to June 11, 2021 (Fri)</p> <p><b>(Payment Places)</b> At any bank. Note: Payment must be made at the counter in the bank. Payment through ATM is not available</p> <p><b>(Payment Method)</b> Bank transfer only. Candidates must fill in their name, address, telephone number correctly with a black or blue pen in the ✕-marked boxes on the supplied payment transfer form. Additional transfer fee will be borne by the candidates. Please make sure the payment certificate has a seal of the handling bank.</p> <p><b>(Important Notice for your application)</b> Applications will not be accepted if the payment for the Entrance Examination not been made by the specified date, or missing of the bank seal on the payment certificate, or the payment certificate not been attached in the [Form 2] . If you make the payment on the last day, remember to submit all the application documents by 17:00 on the day. (Please make sure the business hours of the bank.) The Entrance Examination Fee is not refundable except for the following circumstances. The payment has been made but did not apply (Either did not submit the application or the application been refused), or accidentally made the payment twice. In principal, candidates shall bear the cost of refund Request for the refund must be made within 14 days from the last day of the application period.  [Inquiries regarding refunds] Accounting Division, Finance Department, Nagasaki University (TEL +81-95-819-2060)</p> <p>* Overseas students on Japanese government (Monbukagakusho: MEXT) scholarship are not required to pay the fee.</p>

## 6. Notes on the Application

- (1) No changes can be made on the application form after the submission.
- (2) All the submitted documents for the application cannot be returned for any reason.

## 7. Screening Method

The examination subjects depend on the type of entrance examination as follows. The General Examination includes either “①Writing” or “②Interview and Oral Examination” for each candidate. Candidates who choose to take “①Writing” must take two subjects, otherwise they will result in failure.

- (1) Date of Examination (The date and the time that school specifies during following period)  
From June 28, 2021 (Mon) to June 30, 2021 (Wed)

- (2) Examination Venue  
Graduate School of Engineering, Nagasaki University  
1-14 Bunkyo, Nagasaki, Japan 852-8521

- (3) Examination Subject / Allocation points

Entrance Examination Category	Subject		Allocation points	Total
General Examination	①Writing	English	100	200
		Special Subject	100	
	②Interview and Oral Examination [Including the screening of the submitted documents]		200	200
Examination For Those Currently Employed	Interview and Oral Examination [Including the screening of the submitted documents]		200	200
Examination for International Students	Interview and Oral Examination [Including the screening of the submitted documents]		200	200

\* The writing examination of each candidates will defer depend on their field.

\* An individual interview and an oral examination will be held by multiple examiners.

- (4) Acceptance Criteria

Successful candidates will be those who score more than 60% of the total score.

An Interview and an Oral examination will be evaluated based on the following evaluation contents.

(Evaluation contents)

Candidates will be evaluated on their motives for the application, basic scholastic achievement of master's degree, as well as their plans for research in comprehensive way through an interview refer to the application documents.

- (5) Entrance Examinations over the Internet

International Students may be eligible for taking an Interview and an Oral Examination over the Internet. Candidates for the Online Interview must first contact his/her prospective academic advisor and send him/her a resume and contents of their research at least a month

before the first day of the application period. Candidates must make sure to thoroughly discuss with his/her prospective academic advisor before applying.

## 8. Notes on Examination

- (1) Candidates must bring the Admission Ticket issued by this graduate school on the day of the examination.
- (2) Candidates must enter designated examination room 20 minutes before examination starts.
- (3) All cellular phones must be turned off before entering the examination room.

## 9. Announcement of Successful Candidates

July 14, 2021 (Wed) 10:00 AM

- \* The results for the successful candidate(s) will be notified through mail and also announced on the Graduate School of Engineering notice board on the day.
- \* Also successful candidate(s) will be listed on the homepage of Graduate School of Engineering, Nagasaki University from 10:00 AM on the day.  
(URL : [http://www.eng.nagasaki-u.ac.jp/english/contents/01\\_g\\_admission.html](http://www.eng.nagasaki-u.ac.jp/english/contents/01_g_admission.html))
- \* Inquiries regarding the examination results will not be accepted over the phone.

## 10. Enrollment Procedures

Successful candidates must follow the enrollment procedures outlined below. More details will be enclosed in the notification for the successful candidates.

### (1) Procedures Period

From September 1, 2021 (Wed) to September 3, 2021 (Fri) 9:00-17:00

### (2) Fees

Enrollment Fee . . . . . ¥282,000

(Note) Enrollment fees shall not be refunded once paid.

[Additional Information]

- ① Tuition Fee for 2021 (Annually): ¥535,800  
(The first semester ¥267,900 / The second semester ¥267,900)
- ② Payment periods for the tuition fee will be as follows.  
The first semester: April  
The second semester: October
- ③ If the amendment of tuition fee has been conducted, the new tuition fee will apply from the date of revision.
- ④ The Exemption of deferment of enrollment fee and tuition fee will be available. (Details will be enclosed with the procedural documents)
- ⑤ Admission and tuition fees are not required for international students supported by Japanese government (Monbukagakusho: MEXT) scholarships.

## 11. Handling of Personal Information

- (1) Obtained personal information is used for selecting enrollees. The personal information of successful candidates and enrollees are used for enrollment procedures, and the student registration.
- (2) The grades of the entrance examination and other personal information are used as the references for the recommendation of the 1st year scholarship students, as well as for the selection of the candidates for exemption of entrance fee and tuition fee.
- (3) Obtained personal information for the selection of enrollee, and for the entrance examinations are also used in statistical surveys and research related to the selection of enrollees.
- (4) Obtained personal information through (via) the application documents and entrance examination are not used for the purposes other than the purposes mentioned above nor to provide to the third parties, except the case as provided in Article 9 of “Act on the Protection of Personal Information Held by Independent Administrative Agencies”.

## 12. For Applicants Requiring Disability-related Accommodations

Applicants with disabilities who require (assistance / special care) on their examination as well as attending classes may consult with the Student Administration Office of the Graduate School of Engineering. Applicant should include the following information along with a medical certificate by June 4, 2021.

Applicants will never be negatively affected in the screening process by the results of an advance consultation.

If necessary, an interview may be held with applicant or the spokesperson from the university where the applicant received his/her last degree. If one fails to apply in advance, it might result in no (assistance/special care) available.

The description of the application form

- (1) Category of the Entrance Examination and the name of the course you apply
- (2) Type and condition of disabilities
- (3) Description of assistance request at the entrance examination
- (4) Description of the assistance request after enrollment
- (5) The assistance service received at the former academic institute
- (6) Additional information
- (7) Name, Address, and the Contact Phone Number (FAX Number)

☆Nagasaki University Student Accessibility Office will support students and applicants with disabilities.

## 13. Security Export Control

Nagasaki University performs the security export control based on "Foreign Exchange and Foreign Trade Act" so that education and study contents to foreign students do not obstruct maintenance of international peace and the security. Please thereby note it because the applicants may demand the change of education and study contents to hope for. In addition, please inquire for the details of each department.

#### 14. Measures on the Novel Coronavirus Infection

Before submitting your application, should you aware that the following measures may be taken depending on the situation of spread of the COVID-19. The examination date may be postponed or the selecting method may be changed ( Ex.Interviews may be conducted online) and additional examination may be conducted. Further more, the postponement of the examination date will be announced on the website of the Graduate School of Engineering, Nagasaki University.

(URL : [http://www.eng.nagasaki-u.ac.jp/english/contents/01\\_g\\_admission.html](http://www.eng.nagasaki-u.ac.jp/english/contents/01_g_admission.html))

#### 15. Other Information

The request for the application forms (the payment transfer form of the entrance examination fee and the address sticker) by mail requires a self-addressed return envelope (24 cm x 33 cm) with ¥120 worth of stamps affixed. The request must be sent to the Student Affairs Section for Graduate School of Engineering in the envelope with “Request for Doctoral Degree Application Forms, Department of Science and Technology, Graduate School of Engineering, Nagasaki University” written in red ink on the front.

##### Inquiry

Student Affairs Section for the Graduate School of Engineering  
West District Division, Nagasaki University  
1-14 Bunkyo, Nagasaki, Japan 852-8521

Diploma Policy

Curriculum Policy

Faculty List and Research Focuses

## Diploma Policy

Doctoral Degree of Engineering will be conferred on a student who has been enrolled in the Graduate School of Engineering for more than 3 years, and who has earned the credits (more than 15 credits) prescribed in the educational program (refer to [1]). The student must also be recognized to have the following skills and attributes:

- Truly professional and interdisciplinary knowledge, professional practical skills, skills to promote innovation research and problem solving skills in either discipline of Systems Engineering (mechanical system and social infrastructure system), Electrical Engineering and Computer Science, Chemistry and Materials Science, or Water and Environmental Science.
- Strong willingness to contribute to the promotion of innovative science and technology of next generation.
- Sense of ethics and high security awareness required as a highly professional engineer and/or researcher.
- Communication skills and leadership in a global context.

In addition to the above, the student's doctoral thesis must meet the requirements for a degree conferral (refer to [2]).

[1] A student who has achieved outstanding performance might be conferred degree even if he/she has been enrolled only for one year.

[2] The Doctoral Thesis must be relevant to engineering and must have high academic value in novelty, creativeness, universality and demonstrability. In order to prove its suitability as a doctoral thesis, the submitted paper must include at least two original theses that have been published or intended to be published in an academic journal based on its established assessment system (subject to the submission of at least one original thesis after the student's entrance in the Doctoral Course of the Graduate School of Engineering. The submitted paper may include one original thesis under review for publication in an academic journal based on established assessment system.).



## Curriculum Policy

- The educational curriculum has been structured comprehensively with the discipline of Systems Engineering (mechanical system and social infrastructure system), Electrical Engineering and Computer Science, Chemistry and Materials Science, and Water and Environmental Science. Students will acquire a wide range of knowledge as well as skills to explore and solve problems.

- "General Course" offered as one of the common courses is consisted of two mandatory classes. "Special Seminar on Science and Technology" is conducted by an assistant supervisor of the student, while "Special Research on Science and Technology" is jointly conducted by multiple faculty with different specialty. They will nurture general and applicable skills.

Academic achievement will be measured by submitted report, oral examination, writing examination, presentation and debate, depending on the contents of each course.

- "Special Lecture on Science and Technology" is conducted by multiple lecturers including enterprise professors on the topic of collaboration of academia and industry. This course is to help students grasp the entire idea of engineering.

Academic achievement will be measured by submitted report, oral examination, writing examination, presentation and debate, depending on the contents of each course.

- Four modules of each program: "Modules for Systems Engineering", "Modules for Electrical Engineering and Computer Science", "Modules for Chemistry and Material Science" and "Modules for Water and Environmental Science" are to nurture advanced knowledge of professional discipline.

Academic achievement will be measured by submitted report, oral examination, writing examination, presentation and debate, depending on the contents of each course.

Appendix about the courses of the Department of Science and Technology

Courses	General Course	Specialized Course			
		Systems Engineering Program	Electrical Engineering and Computer Science Program	Chemistry and Materials Science Program	Water and Environmental Science Program
Key attributes to be nurtured	Special Seminars on Science and Technology Special Researches on Science and Technology Field Exercises on Science and Technology Research English and Communication				
General and Applicable skills	Special Lectures on Science and Technology				
Overall understanding of engineering					
Professional knowledge and skills	Computational Sciences and Supercomputing	Advanced Robotics Human-machine System Applied Strength of Materials II Fracture Analysis Advanced Tribology Machine Element and Systems for Power Transmission Advanced Ultra-precision Machining and Measurement Energy Conservation System Optical Measurement of Thermal Fluid Advanced Heat and Mass Transfer Aeroacoustics Thermodynamic Analysis of Transformation Processes Advanced Chemical Thermodynamics Applied Strength of Materials I Advanced Structural Analysis and Design Advanced Maintenance System of Concrete Structures Advanced Composite Material and Structure Theory of Planning for the Sustainable Habitation Advanced Stability and Vibration of Structures Building Environmental Planning Advanced Concrete Materials Aeroelasticity Advanced Public Project Planning Geo-sphere Environmental Engineering	Advanced Optical Electronics Advanced Electromagnetics Advanced Electromagnetics Antenna Engineering Applied Electromagnetic Wave Engineering Advanced Power Electronic Circuits Advanced Energy Electronics Advanced Nonlinear Circuits and Systems Advanced Plasma Materials Science Advanced Magnetics Advanced Magnetic Applications Advanced Electric Drive System Design Advanced power converter control Advanced Electromagnetic Energy Radiation and Transmission Advanced Electric Energy System Advanced Theory of Electro-mechanical Energy Conversion Analog CMOS Integrated Circuit Advanced Information Processing System Advanced Applied Multimedia Advanced Software Science Advanced Reconfigurable Systems Advanced Applied Image Science Advanced Information	Advanced Functional Materials Science Advanced Characterization of Surfaces Chemistry of Functional Ceramics Advanced Fine Structural Materials Science Advanced Metal Physics Inorganic Composite Materials Materials Physics Advanced Solid State Physics Inorganic Nano - Materials Biomolecular Function Biofunctional Materials Chemistry Advanced Chemical Synthesis of Natural Products Transition-metal Catalyzed Efficient Transformation of Materials Advanced Applied Coordination Chemistry Advanced Inorganic Material Transformation Chemistry Advanced Spectroscopy Advances in Structure and Function of Biological Molecules Advanced Molecular Organization Science Advanced Functional Interface Science Advanced Polymer Science Advanced Interfacial Structure Chemistry Advanced Quantum-Computation based Materials Design	Advanced membrane separation technology Environmental process engineering International water treatment engineering Advanced international internship and research activities Water Recycling Technologies Planning of Water Treatment Plants Water Quality Monitoring Practicum

		<p>Advanced Numerical Methods in Geomechanics</p> <p>Advanced Geo-Disaster Prevention Engineering</p> <p>Maintenance Engineering of Steel Structures</p> <p>Remote Monitoring Technology for Civil Structure</p> <p>Advanced Structural Dynamics</p> <p>Advanced Environmental Hydraulics</p> <p>Advanced Water Environmental Technology</p> <p>Environmental Management System &amp; Environmental Assessment</p> <p>Advanced Environmental Design</p>	<p>Network</p> <p>Advanced Applied Algebra for Communication</p> <p>Advanced Applied Imaging Technology</p> <p>Image Information Processing</p> <p>Advanced Data Mining Applications</p>	<p>Advanced Analytical Techniques for Solid Materials</p>	
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## Faculty List and Research Focus

Systems Engineering Program		
Faculty	Position	Research Focus
OMINE Kiyoshi	Professor	Advanced geotechnical engineering and geo-environmental engineering
SAKAGUCHI Daisaku	Professor	Elucidation and suppression of unstable flow in a centrifugal turbomachinery
JIANG Yujing	Professor	Maintenance management and design for underground structures
NAKAHARA Hiroyuki	Professor	Aseismic design for building structure
NAKAMURA Shozo	Professor	Improvement of design and maintenance method for steel structures
HAYASHI Hidechito	Professor	Fluid dynamics and fluid machinery
MATSUDA Hiroshi	Professor	Development of real-time non-contact vibration measurement system by optical method
MOMOKI Satoru	Professor	Flow regime and heat transfer of gas-liquid two-phase flow evaporating
YASUTAKE Atsuko	Professor	Design and management method for maintaining and developing dwelling environment
YAMAMOTO Ikuo	Professor	Research on advanced robot systems
YOSHITAKE Yutaka	Professor	Development of vibration control device for structures and machines, Vibration analysis of drive systems of automotives and motors
OKUMATSU Toshihiro	Asso. Prof.	Development of measurement technology for structural health monitoring
OKUMURA Tetsuya	Asso. Prof.	Fluid behavior in the vicinity of solid surfaces
GENJO Kahori	Asso. Prof.	Study on environmental performance and biophilic design of building
KOYAMA Atsuhiko	Asso. Prof.	Evaluation of fatigue strength of the various engineering materials, Development of scanning laser induced acoustic microscope
SASAKI Kenji	Asso. Prof.	Advancement of evaluation method for material and construction performance toward improving quality and productivity of concrete structures
SUGIMOTO Satoshi	Asso. Prof.	Development of monitoring system and mechanical evaluation for slopes and soil structures
SUZUKI Seiji	Asso. Prof.	Study on the substance transportation in aquatic environment considering behavior of lives
SETO Shinta	Asso. Prof.	Satellite remote sensing of precipitation and its application for disaster prevention
TAKASE Toru	Asso. Prof.	Research on the fatigue properties of the structural materials
TANAKA Yoshiyuki	Asso. Prof.	Human-machine systems based on biological motor control mechanism
NAGAI Hiroto	Asso. Prof.	Development and multidisciplinary analysis for flexible aerospace structural system
NISHIKAWA Takafumi	Asso. Prof.	Advanced sensing and monitoring techniques for bridges and civil structures
YAMAGUCHI Kohei	Asso. Prof.	Development of high quality maintenance and repair technology of infrastructure structure, and development of diagnostic technology for its social implementation

Systems Engineering Program		
Faculty	Position	Research Focus
YAMAGUCHI Tomohiko	Asso. Prof.	Measurement and prediction of thermophysical properties of fluids

Electrical Engineering and Computer Science Program		
Faculty	Position	Research Focus
ABE Takashi	Professor	Development research of power conversion and motor drive systems
ENAMI Yasufumi	Professor	Ultra-fast optical communication devices and fiber sensor networks based on the optical waveguide
KIYASU Senya	Professor	Pattern information processing, pattern recognition
KOBAYASHI Toru	Professor	Study of Intelligent Robot which fused in IoT and AI
SHIBATA Yuichiro	Professor	Reconfigurable architectures and parallel processing
JUN Byungdug	Professor	Photogrammetry, remote sensing
TANAKA Toshiyuki	Professor	Research on non-invasive (non-destructive) diagnostic methods using electromagnetic waves
MATSUNAGA Shoichi	Professor	Spoken language processing
ISHIZUKA Yoichi	Asso. Prof.	Power electronic and analog integrated circuits
ICHIFUJI Yu	Asso. Prof.	Development of big data driven policy and decision making support system
ITO Sohei	Asso. Prof.	Software engineering, formal methods, process mining
SAKAI Tomoya	Asso. Prof.	Mathematical modeling and optimization for pattern recognition and machine learning
SUZUKI Ikumi	Asso. Prof.	Large and high dimensional analysis, text mining
SETOZAKI Norio	Asso. Prof.	Development and assessment of virtual reality contents
HARASAWA Ryuichi	Asso. Prof.	Computational number theory and it's application to cryptography
FUJISHIMA Tomoyuki	Asso. Prof.	Electrical discharge, ozone generation, application of electrical discharge to environmental problems etc
FUJIMURA Makoto	Asso. Prof.	Image processing
FUJIMOTO Takafumi	Asso. Prof.	Research on high functional antennas
MATSUDA Yoshinobu	Asso. Prof.	Production and diagnosis of industrial plasma
MARUTA Hidenori	Asso. Prof.	Power conversion technology based on digital signal processing
MORIYAMA Toshifumi	Asso. Prof.	Direct/inverse scattering problems and microwave remote sensing
YANAI Takeshi	Asso. Prof.	Development and application of magnetic films
YOKOI Yuichi	Asso. Prof.	Development of electrical machines and applied nonlinear dynamics

Chemistry and Materials Science Program		
Faculty	Position	Research Focus
UMAKOSHI Keisuke	Professor	Development and application of photofunctional metal complexes
SHIGEMITSU Yasuhiro	Professor	Theory, implementation and applications of quantum chemistry
TANABE Shuji	Professor	Study on the preparation procedure of nano catalysts using sonochemical process
HATAKEYAMA Tomomitsu	Professor	Structure-function analysis of carbohydrate-binding proteins
URITA Koki	Asso. Prof.	Study on unique phenomena in nanopores
UNNO HIDEAKI	Asso. Prof.	Structural and functional analysis of proteins
ONODERA Gen	Asso. Prof.	Catalytic reaction for organic synthesis by use of transition-metal-complex
KAMADA Kai	Asso. Prof.	Fabrication of inorganic-bio hybrids and their synergistic functions
KONDO Shin-ichiro	Asso. Prof.	Theoretical study of the excited states of charged particles on the metal surface
SAKUDA Eri	Asso. Prof.	Synthesis and application of photofunctional compounds
ZHENG Guobin	Asso. Prof.	Synthesis and structural design of carbon nanomaterials
TANAKA Shuji	Asso. Prof.	Studies on structure-function relations of enzymes, and its application
HYODO Takeo	Asso. Prof.	Design of functional ceramics and their applications
MURAKAMI Hiroto	Asso. Prof.	Design of functional elastomers and pressure sensitive adhesives and their application
YAMADA Hiroto	Asso. Prof.	Electrochemical phenomena at interfaces between solids

Water and Environmental Science Program		
Faculty	Position	Research Focus
ITAYAMA Tomoaki	Professor	Molecular ecology of aquatic ecosystem and development of water purification technology using ecological engineering for developing countries
FUJIOKA Takahiro	Asso. Prof.	Membrane fouling research
JIANG Yujing	Professor (Concurrent Post)	The hydraulic transport Mechanism of Fractured Rock
TANABE Shuji	Professor (Concurrent Post)	Research development of water clarification system utilizable in developing countries, for example, Africa (i.e. Kenya) and South-East Asia
SUZUKI Seiji	Asso. Prof. (Concurrent Post)	Development of a 3-Dimensional coupled physical-ecosystem model in the lake
SETO Shinta	Asso. Prof. (Concurrent Post)	Water resources assessment based on hydrological simulation
MURAKAMI Hiroto	Asso. Prof. (Concurrent Post)	Development of functional polymer membrane