

**2027 Graduate Admissions Guide:  
Master's/Doctoral Program  
Department of Systems Innovation**

Graduate School of Engineering, The University of Tokyo

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# 2027 Master's Program

This document serves as a supplement to the “Graduate School of Engineering, The University of Tokyo, Guidelines for Applicants to the 2027 Master’s Program”. The entrance examination of our department consists of Document Based Selection, Oral Examinations (General and Technical) and English Examination. An overview of the examination process is illustrated in Figure 1. For the latest updates and detailed information, please visit the Department of Systems Innovation website: <http://www.sys.t.u-tokyo.ac.jp>

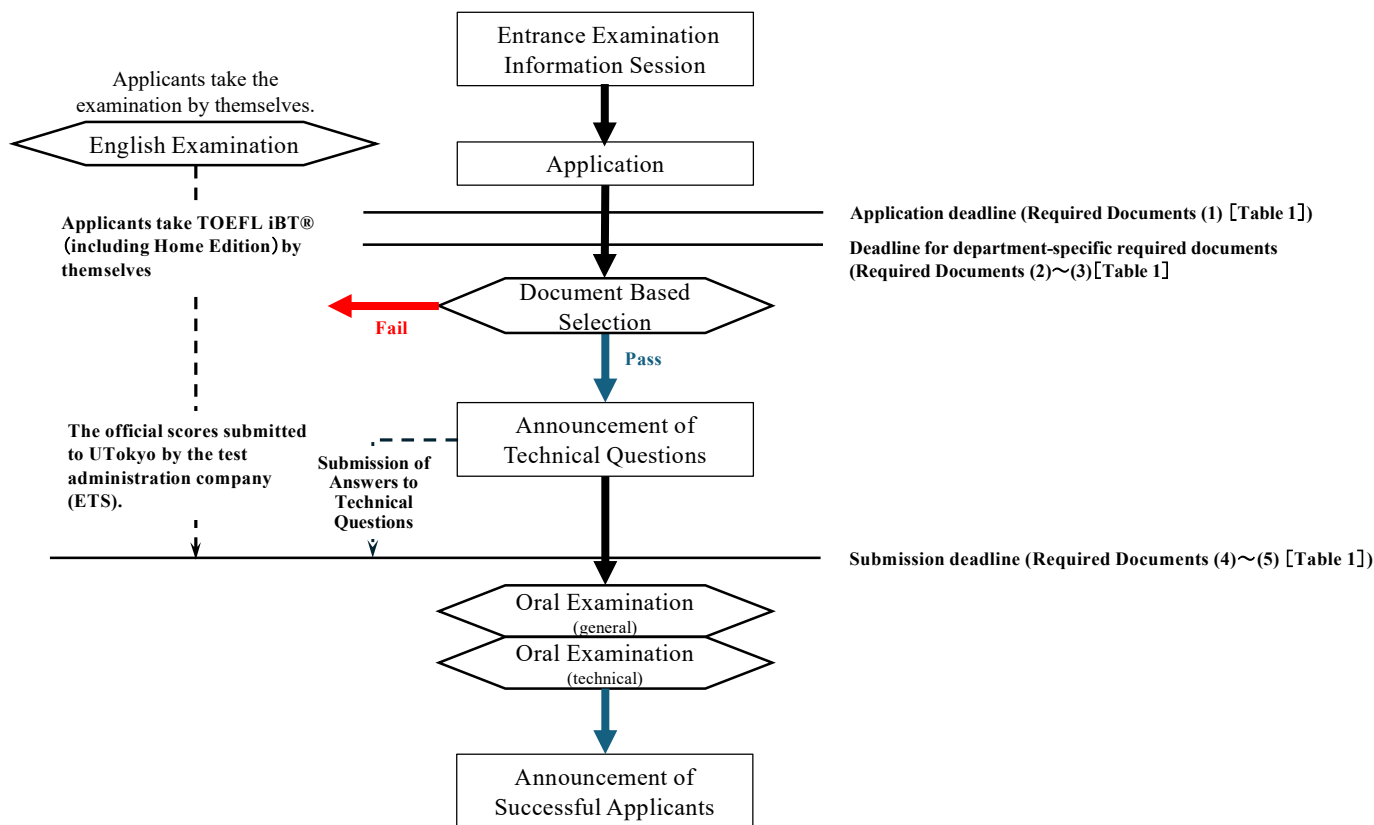


Figure 1: Process of Entrance Examination

# 1 Required documents

Prepare and submit all items listed in Table 1 below.

Table 1: Required documents and important notes

	Documents	Submission Period	Submission Method	Notes
(1)	<b>Application Documents</b>	<b>May 29 (Fri) – June 4 (Thu), 3:00 PM</b>	Refer to the “Graduate School of Engineering, The University of Tokyo Guidelines for Applicants to the 2027 Master’s Program”	Follow the instruction in Section 6 of the “Graduate School of Engineering, The University of Tokyo, Guidelines for Applicants to the 2027 Master’s Program”
(2)	<b>Declaration of Preferred Supervisors</b>	<b>May 29 (Fri) – June 25 (Thu), 3:00 PM</b>	“My Page” of the online application system of the Graduate School of Engineering, The University of Tokyo	Carefully review the information on “My Page” before submission.
(3)	<b>Motivation Letter with Research Plan</b>	<b>May 29 (Fri) – June 25 (Thu), 3:00 PM</b>		Applicants must use the designated format downloaded from the department website and describe in detail, in Japanese or English, their reasons for applying to this department, their reasons for selecting their preferred supervisor, and the research they wish to pursue in this department.
(4)	<b>Answers to Technical Questions</b>	<b>July 23 (Thu) – Aug 6 (Thu), 3:00 PM</b>		Applicants must download the designated format from the Department website and provide answers to the technical questions released on July 23 (Thu)
(5)	<b>Official TOEFL iBT® Score</b>	<b>By August 6 (Thu)</b>		Refer to the “AY 2027 Graduate School of Engineering Entrance Examinations Guidelines for Submission of TOEFL Scores”

## 2 Examination Guidelines

### (1) Selection Method

#### a) Document-Based Selection

The initial selection of applicants for admission is conducted by evaluating applicant's submitted documents, including Motivation Letter with Research Plan (Required documents (3) [Table 1]) and undergraduate academic transcripts. Results of the Document-Based Selection will be announced by **July 23 (Thu)** via the department website. Only those who pass this stage are eligible to proceed to the Oral Examinations (General and Technical). Applicants who do not pass the Document-Based Selection will not be invited to the Oral Examinations (General and Technical).

#### b) Oral Examination (General)

This oral examination (online) focuses on the applicant's undergraduate thesis research (completed or in progress), equivalent research projects, as well as the desired research for the Master's program. It is designed to assess the applicant's knowledge in the academic field, readiness for the Master's program, and overall research potential. Detailed information regarding the examination format, schedule, and important instructions will be announced on the department website by **July 23 (Thu)**.

#### c) Oral Examination (Technical)

Applicants are required to submit answers to pre-assigned technical questions, followed by an oral examination (online) based on their responses. Further details, including the examination method, timetable, and specific instructions will be announced on the department website by **July 23 (Thu)**.

#### d) English Examination

English proficiency is evaluated based on the applicant's official TOEFL iBT® score (including the Home Edition). Please note that the department only accepts **Test Date scores**; **MyBest™ scores** will not be accepted.

## (2) Schedule of Oral Examinations (General and Technical)

Date	Examination Subject(s) & Times	Notes
August 31 (Mon) – September 4 (Fri)	9:00 – 19:00 JST <sup>(1)</sup> Oral Examinations (General and Technical) <sup>(2)</sup>	Only for applicants who pass the Document- Based Selection.

### Footnotes:

<sup>(1)</sup> Examination times are subject to change.

<sup>(2)</sup> Oral Examinations will be conducted online.

## (3) Notes

### a) Communication with Supervisors

It is recommended that applicants contact their preferred supervisor(s) prior to submitting their application. However, once the Application Documents have been submitted, any communication with the preferred supervisor regarding the entrance examination is strictly prohibited.

### b) Application Fees

The application fee is non-refundable under any circumstances. This includes cases where an applicant does not pass the Document-Based Selection stage.

### c) Technical Requirements for Online Examinations

For the online Oral Examinations (General and Technical), applicants are responsible for preparing a computer equipped with a camera and microphone as well as a stable Internet connection.

### d) Further Information

Additional notifications regarding the Oral Examinations (General and Technical) will be posted on the department website. Detailed information will also be provided during the Entrance Examination Information Session on April 24 (Fri) and April 25 (Sat). Please check the department website for session details.

### e) Confidentiality and Security

Sharing the examination URL, password, or any related information is strictly prohibited. Applicants must not post any examination materials on the internet. Unless explicitly instructed otherwise by the examiner, taking photographs, capturing screenshots, and/or making audio and video recordings during examinations are strictly prohibited.

## 3 Others

### (1) October 2026 Enrollment

Successful applicants have the option to enroll in the Master's program in October 2026. For detailed information on the application requirements, please refer to Section 1 of the "Graduate School of Engineering, The University of Tokyo, Guidelines for Applicants to the 2027 Master's Program".

### (2) Visa Application for October Enrollment

Visa applications can only be processed after an applicant has been officially accepted, and the process typically takes more than one month. Consequently, it may not be possible to obtain a visa in time for the October enrollment. International applicants requiring a visa are therefore encouraged to consider enrolling in April instead.

### (3) Winter Entrance Examinations

Please note that the Department of Systems Innovation does not plan to conduct winter entrance examinations (Application Schedule B).

### (4) Contact Information

If you have any further questions, please contact the Office of the Department of Systems Innovation.

# 2027 Doctoral Program

This document serves as a supplement to the “*Graduate School of Engineering, The University of Tokyo, Guidelines for Applicants to the 2027 Doctoral Program*”. The entrance examination of our department consists of Document Based Selection, Oral Examinations (General and Technical) and English Examination. An overview of the examination process is illustrated in Figure 1. For the latest updates and detailed information, please visit the Department of Systems Innovation website: <http://www.sys.t.u-tokyo.ac.jp>

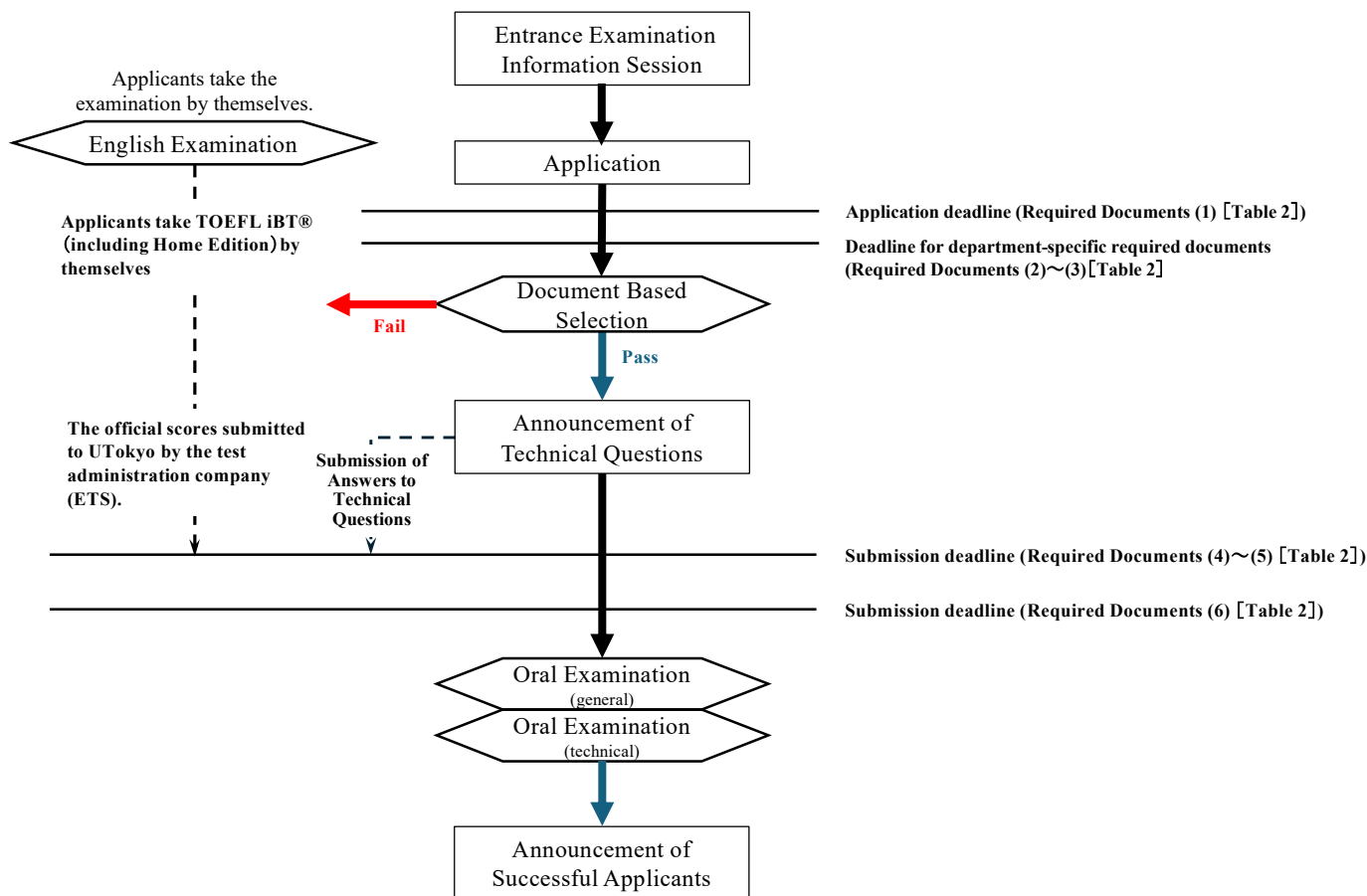


Figure 2: Process of Entrance Examination

# 1 Entrance Examination

Prepare and submit all items listed in Table 2 below.

Table 2: Required documents and important notes

	Documents	Submission Period	Submission Method	Notes	Applicants exempted from submission
(1)	Application Documents	May 29 (Fri) – June 4 (Thu), 3:00 PM	Refer to the “Graduate School of Engineering, The University of Tokyo Guidelines for Applicants to the 2027 Doctoral Program”	Follow the instruction in Section 6 of “Graduate School of Engineering, The University of Tokyo, Guidelines for Applicants to the 2027 Doctoral Program”	—
(2)	Declaration of Preferred Supervisors	May 29 (Fri) – June 25 (Thu), 3:00 PM	“My Page” of the online application system of the Graduate School of Engineering, The University of Tokyo	Carefully review the information on “My Page” before submission.	—
(3)	Documents for the “Document based Selection”	May 29 (Fri) – June 25 (Thu), 3:00 PM		Footnote (3)	—
(4)	Answers to Technical Questions	July 23 (Thu) – Aug 6 (Thu), 3:00 PM		Applicants must download the designated format from the Department website and answer to the technical questions released on July 23 (Thu)	Applicants completed or expected to complete a Master’s program (or professional degree program) at Graduate School of Engineering, Graduate School of Frontier Sciences, Graduate School of Information Science and the Technology, or Graduate School of Interdisciplinary Information Studies in The University of Tokyo are exempted from the Oral Examination (Technical).
(5)	Official TOEFL iBT® Score	By August 6 (Thu)	Refer to the “AY 2027 Graduate School of Engineering Entrance Examinations Guidelines for Submission of TOEFL Scores”		Applicants completed or expected to complete a Master’s program (or professional degree program) at The University of Tokyo are exempt from the English Examination (submission of official TOEFL iBT® Test Date score is not required).
(6)	Presentation Slides for the “Oral Examination (General)”	By August 30 (Sun)	“My Page” of the online application system of the Graduate School of Engineering, The University of Tokyo	Submit in PDF format regardless of the format that will be used in the presentation of oral examination (General).	—

Footnote (3): Details for Documents for the “Document based Selection”

<p><b>[For applicants in the Primary Examination]</b></p> <p>① Summary of past/current research content and outline of research plans for doctoral program (6 pages in A4 or US letter format)</p> <p><b>[For applicants in the Secondary Examination]</b></p> <p>① Summary of past/current research content and outline of research plans for doctoral program (6 pages in A4 or US letter format)</p> <p>② List of research achievements</p> <p>③ Master’s thesis (if graduated from master’s program) or supplemental documents for ① and ② above (up to three items total, include published papers, conference presentation materials, draft of the master’s thesis, etc.)</p> <p>Note: The format of ① should conform to the formats of academic conference proceedings. In addition, ② should be divided into the following categories: academic journal papers, review/commentary papers, conference oral presentations, and others (patents, awards, etc.). All the documents of ①, ②, and ③ need to be submitted in PDF format.</p>
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## 2 Examination Guidelines

### (1) Selection Method

#### a) Document-Based Selection

The initial selection of applicants for admission is conducted by evaluating applicant's submitted documents (Required documents (3) [Table 2], and undergraduate and graduate academic transcripts. Results of the Document Based Selection will be announced by **July 23 (Thu)** via the department website. Only those who pass this stage are eligible to proceed to the Oral Examinations (General and Technical). Applicants who do not pass the Document-Based Selection will not be invited to the Oral Examinations (General and Technical).

#### b) Oral Examination (General)

This oral examination (online) focuses on the applicant's master's thesis research (completed or in progress), equivalent research projects, as well as the desired research for the Doctoral program. It is designed to assess the applicant's knowledge in the academic field, readiness for the Doctoral program, and overall research potential. Detailed information regarding the examination format, schedule, and important instructions will be announced on the department website by **July 23 (Thu)**.

The oral examination (General) consists of the Primary Examination and the Secondary Examination. The applicants take one of the examinations following the Entrance Examination schedule as follows:

- ① The Primary Examination is for applicants who expect to obtain a master's or professional degree by the end of March 2027 and wish to enroll in April 2027. Applicants who pass the Primary Examination will take the Secondary Examination separately from late January to early February 2027. Details about the date and required documents for the Secondary Examination will be announced later.
- ② The Secondary Examination is for applicants who already have a master's or professional degree (including those expecting to obtain it by the end of September 2026) and wish to enroll in either October 2026 or April 2027.

#### c) Oral Examination (Technical)

Applicants are required to submit answers to pre-assigned Technical questions, followed by an oral examination (online) based on their responses. Further details, including the examination method, timetable, and specific instructions will be announced on the department website by **July 23 (Thu)**.

*Note: Applicants who have completed or are expected to complete a master's program (or professional degree program) at the Graduate School of Engineering, the Graduate School of Frontier Sciences, the Graduate School of Information Science and the Technology, Graduate School of Interdisciplinary Information Studies in The University of Tokyo are exempt from the Oral Examination (Technical).*

#### d) English Examination

English proficiency is evaluated based on the applicant's official TOEFL iBT® score (including the Home Edition). Please note that the department only accepts **Test Date scores; MyBest™ scores; MyBest™ scores** will not be accepted.

*Note: Applicants who have completed or are expected to complete a master's program (or professional degree program) at The University of Tokyo are exempt from the English Examination (submission of official TOEFL iBT® Test Date score is not required).*

### (2) Examination Subjects and Schedules

Date	Examination Subject(s) & Times	Notes
August 31 <sup>st</sup> (Mon) ~ September 4 <sup>th</sup> (Fri)	9:00~19:00 JST <sup>(4)</sup> Oral Examinations (General and Technical) <sup>(5)</sup>	For eligible applicants who pass the Document Based Selection

Footnotes:

<sup>(4)</sup> Examination times may be changed.

<sup>(5)</sup> Oral Examinations will be held online.

### **(3) Notes**

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It is recommended that applicants contact their preferred supervisor(s) prior to submitting their application. However, once the Application Documents have been submitted, any communication with the preferred supervisor regarding the entrance examination is strictly prohibited.

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## **3 Others**

### **(1) October 2026 Enrollment**

Successful applicants have the option to enroll in the Doctoral program in October 2026. For detailed information on the application requirements, please refer to Section 1 of the *“Graduate School of Engineering, The University of Tokyo, Guidelines for Applicants to the 2027 Doctoral Program”*.

### **(2) Visa Application for October Enrollment**

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### **(3) Winter Entrance Examinations**

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### **(4) Contact Information**

If you have any further questions, please contact the Office of the Department of Systems Innovation.

Faculty Members and Outlines of their Research (1/3)

Supervisor's No.	Name of Supervisor	Research field
1	Kazuhiro AOYAMA Prof. (Research into Artifacts, Center for Engineering)	System Architecture Design, Product Family and Product Platform Design, Product Lifecycle Management (PLM), Model-Based System Design (MBSD), Project Management, Product Service System (PSS), Service Design, Human Centered Manufacturing System, Industry 4.0, Knowledge Management.
2	Kiyoshi IZUMI Prof.	(1) Financial informatics: Artificial market simulation; Financial text mining; AI application in finance. (2) Engineering based economics: Consumer data analysis; Movement data analysis; Marketing simulation. Those who want to join our laboratory should visit /https://socsim.t.u-tokyo.ac.jp/ .
3	Yukio OHSAWA Prof.	(1) Methods for discovering opportunities and risks from commercial, natural, and/or behavioral data, (2) Realizing cognition, thought, and decisions for innovating businesses in designed markets of data where strategies for combining/using/reusing data are communicated and created.
4	Yoji OKABE Prof. (Institute of Industrial Science)	Health diagnostics of advanced composite structures, Structural health monitoring, Non-destructive inspection, Fiber-optic ultrasonic sensing systems applicable to high-temperature environments, Internal damage detection using ultrasonic guided waves, Laser-ultrasonic visualization system, Carbon nanotube composite sensor.
5	Tomoya KAWASAKI Assoc. Prof.	Management Science in supply chain, logistics, and global value chain. Application of optimization, simulation, complex networks, statistical analysis, and machine learning.
6	Tomoya KAWABATA Prof.	Realization research of liquefied hydrogen, high-pressure hydrogen and ammonia transport and storage systems in the energy supply chain supporting a low-carbon society. Fracture mechanics and material nanoscale microstructure design by combining state-of-the-art numerical simulation and experimental observation techniques.
7	Taro KANNO Assoc. Prof.	Human-Centered Systems Design, Operation, & Management: Team Cognition, Organizational Simulation, Cognitive and Behavioral Data Analysis, Human Factors and Resilient Systems Design in Medical, Nursing, ATC, and Emergency Response. Sociotechnical Systems Resilience.
8	Daisuke KITAZAWA Prof. (Institute of Industrial Science)	Marine food production system, renewable energy utilization system and marine ecosystem preservation. Ocean space utilization. Environmental impact assessment. Interactions between the natural environment, marine organisms, and marine structures. Marine ecosystem model. Experiments on flexible structures and behavior of animals in water tank.
9	Takashi GODA Assoc. Prof.	Numerical algorithms (e.g., Monte Carlo, quasi-Monte Carlo and multilevel Monte Carlo methods): from theory to engineering applications, Uncertainty quantification, Global sensitivity analysis, Decision making, Value of information analysis, Machine learning, Other related applied mathematics and statistics
10	Hajime KOBAYASHI Prof. (Frontier Research Center for Energy and Resources)	(1) Advanced Reservoir Engineering for Sustainable Development of Energy Resources (researches on bio-inorganic multi-tracer, smart field, fluid dynamics, natural analogs) (2) Researches on "bio-manufacturing" technologies (CO2 conversion by hybrid bio-inorganic systems) (3) Engineering for Sustainable Development of Subsurface Environments (remediation, diffusion prevention, monitoring and detection of pollutions in subsurface environments)
11	Ryuichi SHIBASAKI Assoc. Prof.	Global transport network modelling and policy simulation: international, intermodal container cargo simulation, logistics and transport analysis/modelling using the large-scale vessel movement database, and sequential modelling of international trade and logistics. Model applications to many kinds of logistics and transport projects mainly planned for developing countries of the world
12	Kazuya SHIBATA Assoc. Prof.	Particle methods, fluid simulation, complex and non-Newtonian fluid analysis, multiphase flow and fluid-solid interaction analysis, machine learning for physical simulation (physics-informed AI), computational science, numerical simulation, ocean engineering and naval architecture, tsunami and coastal hazard simulation, numerical analysis of energy and mechanical systems, nuclear safety analysis, simulation visualization and computer graphics, design optimization.
13	Kazuki SHIBANUMA Assoc. Prof.	Structural integrity to achieve sustainable society: Investigation on fracture mechanics of materials and structures, Development of prediction method of aging degradations and maintenance theory, Innovative physical modeling to integrate multiscale
14	Jun TAKAHASHI Prof.	Innovative lightweight technology using CFRP for low-carbon society (e.g. structural optimization simulation of ultra-lightweight EV and ultra-large floating offshore wind turbine), innovative evaluation technology for ultra-circular society (e.g. probabilistic recycled CFRP design by Monte Carlo method, future value prediction using dynamic LCA) (Supervise with Lecturer Yi Wan)
15	Yutaro TAKAYA Assoc. Prof.	Waste management and recycling; Utilization method of intractable wastes; Mineral processing and hydrometallurgical process of the deep-sea mineral resources; Carbon fixation with concrete sludge, slag, and silicate
16	Takeshi TSUJI Prof.	Exploration and monitoring technologies for CCS and underutilized subsurface energy resources. Exploration and monitoring of the structure and dynamics of earthquake faults and volcanoes. Investigation of the internal structures of the Moon and Mars. Modeling of subsurface processes based on digital rock physics. Monitoring of traffic and human activities using machine learning and seismic sensor networks.
17	Chiharu TOKORO Prof.	Advanced separation technology/process and environmental purification technology/process to achieve sustainable resource circulation, and social system/policy proposal for them.

Faculty Members and Outlines of their Research (2/3)

Supervisor's No.	Name of Supervisor	Research field
18	Gjergj DODBIBA Assoc. Prof.	(1) Resources processing for materials recovery and recycling; (2) Synthesis of adsorbent for wastewater treatment; (3) Environmental impact assessment.
19	Fujio TORIUMI Prof.	Computational Social Science (Social Data Analysis, Agent-based Simulation) and AI for Society. Topics: Social Media, News Media, Web Services, Transportation Data Methods: Complex Networks, Machine Learning, NLP, Agent-based Simulation and Game Theory.
20	Akihiro NAKAO Prof.	DX (Digital Transformation) through next-generation cyber infrastructure (5G / Beyond 5G). Large-capacity, low-latency, multi-connection. Low power consumption and improved safety and reliability. Autonomy by machine learning / AI-based failure prediction / automatic repair. Expandability to space / ocean. Resolving regional issues and creating new value.
21	Kentaro NAKAMURA Prof.	(1) Efficient methods for exploring deep-sea mineral resources, (2) Analytical methods for simple and precise determination of rare metals, (3) Formation processes and geological background of metal resources, (4) Evolution of Earth's surface environment and life.
22	Kimihiro HASHIBA Assoc. Prof.	Innovation in resource engineering: sophisticated mining system (advancement of mining machinery, rapid excavation, deep sea mining), risk reduction in resource development, long-term usage of underground structures (rock property, long-term behavior), and geomechanical modeling/simulation.
23	Yusuke HARA Assoc. Prof. (Transport Innovation Research Center)	Urban Transportation Data Science and Mechanism Design for Transportation Systems: Travel behavior analysis, transportation network analysis, decision-making modeling of urban activities, traffic monitoring and the design of human and freight mobility systems, co-evolutionary models of cities, transportation, and activities, and transportation service design.
24	Hideki FUJII Assoc. Prof.	R&D of social system simulation using multi-agent systems or cellular automata, etc., and virtual social experiments (especially microscopic car-traffic or crowd simulation). Simulation-based decision support for social systems in the real world.
25	Hidetaka HOUTANI Lecturer	Fundamental understanding of ocean waves and their applications in ocean engineering: Research topics include ocean waves, nonlinear waves, freak/rogue waves, wave-structure interaction (including ships and offshore structures), hydroelasticity, stochastic prediction of extreme events, and hydrodynamic model experiments on ships and offshore structures in wave tanks.
26	Hideaki MIYAMOTO Prof.	Space resource development based on the latest scientific knowledge, with a focus on asteroid and lunar resource utilization. Technology development and data analysis for space missions, including Artemis (NASA's lunar program), MMX (Martian Moon sample return), LUPEX (lunar polar exploration), and TSUKIMI (lunar resource exploration).
27	Shinsuke MURAKAMI Prof. (Department of Technology Management for Innovation)	Mineral Economics & Industrial Ecology (MFA/MSA): Sustainable Resource Use, Design and Evaluation of Social Systems for the implementation of Circular Economy (Business Models, Consumer Behavioral Changes and Legislation Framework), Analysis of National Resource Security, Minerals market analysis. Both data analysis and simulation will be used as analytical tools.
28	Hideaki MURAYAMA Prof.	Digital twin, Intelligent Material Systems and Structures, Advanced Composites, Fiber-Optic Sensors and Networks, Underwater Optical Wireless Communication System, Advanced Maritime-Transportation System, Autonomous/Unmanned Surface Vehicle (ASV/AUV), Model-based development (MBD), Model-based systems engineering (MBSE)
29	Kazutaka YASUKAWA Assoc. Prof. (Frontier Research Center for Energy and Resources)	(1) Characterization of seafloor mineral resources based on chemical analyses, (2) Elucidating genesis of seafloor mineral resources by multivariate statistical techniques, (3) Clarification of Earth system's responses to climate changes based on statistical and modeling approaches. Targeting resources and environmental issues by understanding the Earth system.
30	Tomonori YAMADA Assoc. Prof.	Computational Mechanics Simulation for Safe Society, High Performance Computing on Cutting Edge Supercomputers (FUGAKU etc.), Large-scale Simulation and Machine Learning, Multiphysics Simulation.
31	Masataka WATANABE Assoc. Prof.	Unraveling the neural mechanism of consciousness through the establishment of machine consciousness. Firstly, as for the machine, we will develop a large-scale spiking neural network that mimics the functions and dynamics of a mammalian brain through learning, and secondly, mutually connect it to a biological brain for validating its consciousness.
32	Yi WAN Lecturer	Advanced composite materials for future society (self-driving EV, extra-large wind turbine, etc.), comprehensive researches of advanced composite materials (combining material mechanics with novel techniques), study of variation (prediction and control of property-variation of advanced composite materials). (Supervise with Prof. Jun Takahashi)