

School of Engineering, The University of Tokyo



Department of Systems Innovation

Information Sessions for Entrance Exam

May 19, 2023 (Fri)
17:30-20:00

Today's Topic



- Briefing session (17:30-18:30)
 - Introduction of the department (Department Chair, 10min)
 - Curriculum (Curriculum WG, 5min)
 - Student's Voices (Graduate students, 15min)
 - Entrance examination (Vice chair of the department, 15min)
 - Q&A (10min)
 - Guide for laboratory introduction (5min)
- Laboratory introduction (18:30-20:00)
 - Room 422.423.424, 4F, Eng., Bldg., No.3

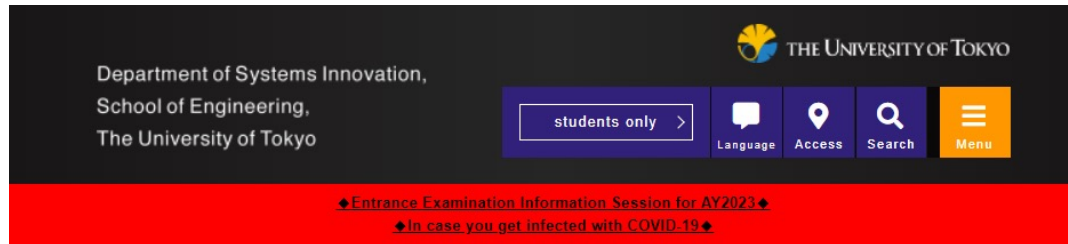
Entrance exam in this year



- **Problems related to systems innovation and oral examination will be conducted by online** in this year
 - All applicants take examinations **by online**.
 - The contents of “Problems related to systems innovation” will be similar to those of the last year.
 - The last year’s problems can be downloaded from department website.
 - Detail of entrance examination will be announced on department website. Please regularly check the website.

- Please read **both** “**Guidelines for Applicants of Graduate School of Engineering**” and “**Guide to Entrance Examinations of the Department of Systems Innovation**” for details.
 - These are downloadable from the websites of Graduate School of Engineering and Department of Systems Innovation.
 - **Both materials contain important information.**

<https://www.sys.t.u-tokyo.ac.jp/en/admissions/regularadmission/?lang=en>



Department of Systems Innovation: Regular Admission

In modern days, multifaceted challenges involving humans, artifacts and nature require more attention and more versatile experts. The Department of Systems Innovation tackles those challenges, offering a unique combination of resources and expertise in a community that provides unique intellectual opportunities.

We at the Department of Systems Innovation are committed to implement both education and research for materializing innovative systems that would enable a better harmony between natural systems, human-made objects, and social systems. The Department of Systems Innovation prepares graduate students for distinguished careers in research and as experts in the public or private sectors. Master's students are trained to assess information and trends in their fields, and to create original works. Doctoral students perform research at the highest level, advancing knowledge in their fields. We encourage all prospective students to contact with our faculty to discover which field of study or topic is best suited for their interests. By doing so, the prospective students will get a feel of what it is like to collaborate with our distinguished faculty and work in our state-of-the-art facilities.

About us >

Information Sessions

Information sessions cover a variety of topics including the admissions processes as well as academic and campus life. All prospective students are encouraged to attend the interactive session to meet with our faculty members and discover firsthand the wealth of educational opportunities available at the Department of Systems Innovation.

◆Entrance Examination Information Sessions◆

Examination Subjects and Schedules



Date	Examination Subject(s) & Times	Notes
August 28th (Mon) ~ September 1st (Fri)	9:00-19:00 ^① - Problems Related to Systems Innovation - Oral Examination	For eligible applicants who pass the document screening
September 7th (Thu)	Examinee numbers of successful applicants will be posted on the Graduate School of Engineering website about 4pm	

1. It may change based on the number of examinees.
2. More details on the exam (e.g., technical questions of the last year and this presentation material) will be on the department website in near future.

Document Screening



- Document screening is conducted by application documents and the applicant's academic performances during undergraduate etc.
 - The subsequent examinations will be held only for applicants who successfully pass the document screening. Applicants who do not pass the document screening will not be invited to take the exam.
 - In document screening of master's exam, **Motivation Letter, Research Proposal and Answer to the Technical Questions** are relatively important and academic performances during undergraduate etc. are referred as reference.
- Applicants will be notified of the results of the document screening by August 24th (Thu) via the department website, etc.

English Examination

Section	Test Date 1	Test Date 2	Test Date 3	MyBest Score
Reading	24	23	23	24
Listening	19	20	22	22
Speaking	20	20	21	21
Writing	21	23	22	23
Total Score	84	86	88	90



- Official TOEFL iBT (including Home Edition) scores submitted by the applicant will be used to evaluate the applicant's English skills.
 - As for submission of TOEFL score, refer to the "Notice regarding Foreign-language (English) Examinations in 2024 (Master's Program)" provided by the University of Tokyo's Graduate School of Engineering.
 - TOEFL scores must arrive no later than August 9th (Wed).
 - The Department of Systems Innovation only accepts official scores from a single test date (Test Date Scores), not "MyBest" Scores.
 - TOEFL ITP is not conducted in Utokyo.
 - For doctoral exam, applicants may be exempted English exam (Refer to Guide to Entrance Examinations)
- Applicants who have not yet obtained an official score must immediately apply the TOEFL iBT (including Home Edition).

Problems Related to Systems Innovation (1/6)



- “Problems Related to Systems Innovation” is conducted by **Pre-assigned technical questions and online oral examination**
 - Applicants submit answers to pre-assigned technical questions before the oral examination
 - An oral examination will be conducted based on answer to pre-assigned technical questions
- **Written exam is not conducted**
 - Written exam is **not conducted**
 - Score of “Problems Related to Systems Innovation” is evaluated by response to pre-assigned technical questions and oral examination.
 - Answer to pre-assigned technical questions is also used for document screening.
 - In oral exam, specialized knowledge and ability to carry out research, etc. are examined.

Problems Related to Systems Innovation (2/6)



■ Technical Questions

- Research paper related to research topic of preferred supervisor is presented (paper should be available for everyone)
- Questions related to assigned research paper are presented (approx. 3 questions) to examine;
 - Comprehension for paper, relevant basic knowledge, problem-finding ability
 - Problem-solving, research planning skills
- Technical questions of the last year are presented in department website



東京大学大学院工学系研究科システム創成学専攻

Department of Systems Innovation, Graduate School of Engineering, The University of Tokyo

令和 5 (2023) 年度修士課程・博士後期課程入試・システム創成学関連科目(専門科目) 課題
Technical Questions on Problems Related to Systems Innovation, 2023 Entrance Examinations for Master's/Doctoral Program

システム創成学関連科目(専門科目) 課題

Technical Questions on Problems Related to Systems Innovation

- この設問は課題論文に対する理解度、背景となる分野に関する知識、課題の発見・解決能力、研究計画能力、論理的な思考能力を問うものである。学術的な解答を心がけること。
The questions below are to examine your understanding of your assigned paper and knowledge on the academic discipline as well as abilities to find and solve problems, plan research strategies, and think logically. Answers should be written academically.
- 解答に用いる事実・知見等は論文内で提示されているものに限らない(文献名や URL 等の引用元を適切に示すこと)。
Information and/or facts outside your assigned paper can be referred in your answers (properly cite the reference sources, such as bibliographic information and URL, etc.).
- 図表、数式等を適宜用いてもよい。引用する場合は、引用元を明記すること。
Appropriate figures, tables and equations can be used in your answers. If you use materials from other people's properties, cite the original sources properly.
- 1 問につき A4 または US letter 2 頁以内で記述すること。
Answers should be within two pages (A4 or US letter) for each question.
- 解答は日本語または英語で記述すること。
Answers should be written in either English or Japanese.

Problems Related to Systems Innovation (3/6)

■ Technical Questions

- Research paper related to research topic of preferred supervisor is presented (paper should be available for everyone)
- Questions related to assigned research paper are presented (approx. 3 questions) to examine;
 - Comprehension for paper, relevant basic knowledge, problem-finding ability
 - Problem-solving, research planning skills
- Technical questions of the last year are presented in department website

教員名：辻 健

(「志望指導教員の申告票」に記入した第一志望指導教員)

Name of supervisor: Takeshi TSUJI

(Your most preferred supervisor as in "Declaration of Preferred Supervisors")

以下の論文を読み、下記の3つの問いに答えよ。

Read the publication indicated below and answer the following three questions.

Cornelius Langenbruch & Mark D. Zoback

"How will induced seismicity in Oklahoma respond to decreased saltwater injection rates?",
Science Advances, Vol. 2, Issue 11, e1601542 (2016)

DOI: 10.1126/sciadv.1601542

<https://www.science.org/doi/10.1126/sciadv.1601542>

*上記の論文はシステム創成学専攻や所属教員の特定の意見、立場や考えなどを代表するものではない。
*The above publication does not represent any specific opinion, standpoint or idea of the Department of Systems Innovation or the faculty members.

【問題1 / Question 1】

課題論文で用いられた主たる手法について説明せよ。また、その手法の利点、新規性、限界・弱点などについて述べよ。

Explain the main method used in your assigned paper as well as the advantage, novelty, limitation and shortcomings etc. of the method.

【問題2 / Question 2】

課題論文の主題の歴史的な経緯と最近の動向について、体系的に述べよ。

Systematically review the historical background and recent trend of your assigned paper's main topic.

【問題3 / Question 3】

課題論文の主たる弱点・限界は何か？また、それを克服するためのアイデアを具体的に述べよ。

Explain the main weakness and/or limitation of your assigned paper. Also, provide a specific idea (or ideas) on how to overcome them/it.

Problems Related to Systems Innovation (4/6)

■ Answers to Technical Questions

- Answer the Technical Questions assigned by your first preferred supervisor
- Details will be announced in department homepage

■ Oral exam

- Around 30 min
 - Applicants' deep understanding on the contents of assigned paper, relevant research topic, etc.
 - Extended Q&A based on applicant's answers, etc. are examined.
- To ensure fairness, the examination will be conducted by multiple faculty members.



東京大学大学院工学系研究科システム創成学専攻
Department of Systems Innovation, Graduate School of Engineering, The University of Tokyo
令和5（2023）年度修士・博士後期課程入試・システム創成学関連科目（専門科目）解答用紙
Answer Sheet for Technical Questions on Problems Related to Systems Innovation, 2023 Entrance Examinations for Master's/Doctoral Program

システム創成学関連科目（専門科目）課題解答用紙（提出方法はシステム創成学専攻入試案内書を参照してください）
Answer Sheet for Technical Questions on Problems Related to Systems Innovation. For submission method, please refer to 2023 Guide to Entrance Examinations provided by the Department of Systems Innovation.

第一志望指導教員（「志望指導教員の申告票」（別紙）に記入したもの）により出題されたシステム創成学関連科目（専門科目）課題について回答してください。
Answer the Technical Questions assigned by your first preferred supervisor (as in "Declaration of Preferred Supervisors").

- ① 本紙を表紙としてすべての解答を1つのPDFファイルにまとめて提出してください。
To submit, combine all of your answers into a single PDF file with this sheet as the cover page.
- ② 各問題（合計3問）につき2ページ以内で解答してください。表紙はページ数に含まれません。
Your answer for each question should be within two pages (three questions in total). The cover page is not included in the page count.
- ③ 第一志望指導教員以外の課題に解答した場合、不合格となることがあります。
If you answer the Technical Questions presented by any faculty member other than your first preferred supervisor, you may be disqualified from further exam.
- ④ 日本語または英語で解答してください。
Answers should be written in either English or Japanese.
- ⑤ 解答中に受験者の氏名や所属が分かるような内容は含めないでください。含まれていた場合不正行為となることがあります。
Do not include any information which may reveal your name and/or affiliation in your answers. If your answer contains such personal information, it may be regarded as fraud.

受付番号 Receipt number	
受験番号 Examination number	
第一志望指導教員の氏名 First preferred supervisor	

Problems Related to Systems Innovation (5/6)



■ Indication and submission of Pre-assigned technical questions

- Pre-assigned technical questions will be presented on August 3rd (Thu)
- Submission deadline of Answers to Technical Questions is planned on August 17 (Thu)

■ Oral exam

- Applicants who pass the document screening are eligible to take oral exam.
- Details, including instructions, timetables, and other notifications concerning the online oral exam, will be published on the department website by August 25th (Fri) (Please regularly check our website)
- For the online exam, the applicant must use a PC with a camera, microphone, and stable Internet connection.
- As for doctoral program, applicants may be exempted from Problems Related to Systems Innovation (See Guide to Entrance Examinations)

Problems Related to Systems Innovation (6/6)



■ Notes

- Problems Related to Systems Innovation will be shown in the department website.
- Problems are related to research topic of preferred supervisor.
- Investigate research topic of preferred supervisor beforehand.
- We recommend to contact with preferred supervisor before submitting applications.
 - Prohibited to contact with preferred supervisor after submitting applications.

Oral Examination



- Oral exam is also conducted by **online**.
 - Details, including instructions, timetables, and other notifications concerning the online oral exam, will be published on the department website by August 25th (Fri)
 - For the online exam, the applicant must use a PC with a camera, microphone, and stable Internet connection.
 - Applicants must make a presentation online by screen-sharing their electronic presentation materials (such as PowerPoint, Keynote, PDF, etc.).
 - Applicants who are exempted to take problems related to Systems Innovation are also required to take oral exam.

Required Documents (Master's Program)



- Documents submitted to Graduate School of Engineering (applications, TOEFL scores, etc.)
 - **Application period: June 29 (Thu) to July 5 (Wed)**
 - Refer to the section 6 of “Guidelines for Applicants to the 2024 Master’s Program” provided by the University of Tokyo’s Graduate School of Engineering.
 - TOEFL official score: Refer to the “Notice regarding Foreign-language (English) Examinations in 2024 (Master’s Program)” provided by the University of Tokyo’s Graduate School of Engineering. (must arrive **August 9 (Wed)**)
- Documents directly submitted to Department of Systems Innovation
 - ◆ **Declaration of Preferred Supervisors** (Submission Deadline: **July 5 (Wed)**)
 - ◆ **Motivation Letter with Research Proposal** (Submission Deadline: **July 27 (Thu)**, details will be announced on department website)
 - ◆ **Answers to Technical Questions** (Submission Deadline: **August 17 (Thu)**, details will be announced on department website)
 - Document format can be downloaded from department website
 - Submission method etc., will be published on the department website

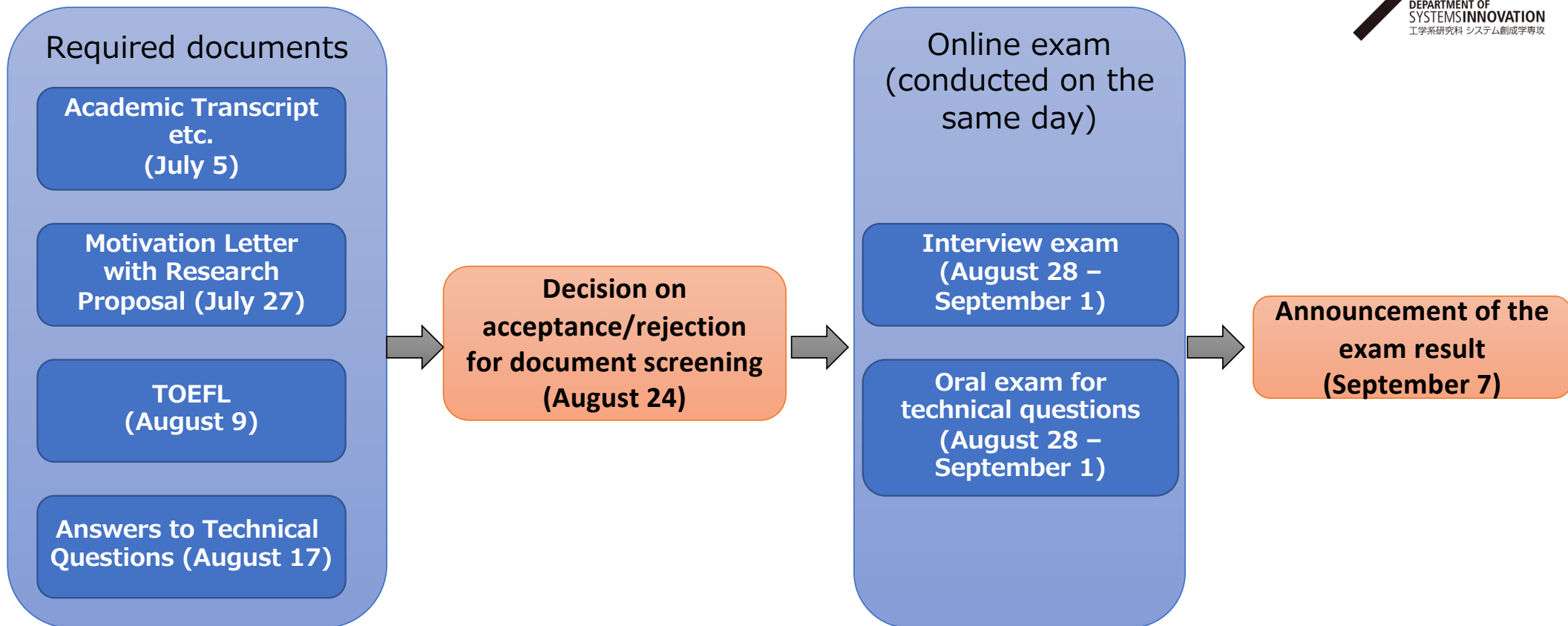
Required Documents (Doctor's program) -1

- Documents submitted to Graduate School of Engineering (applications, TOEFL scores, etc.)
 - **Application period: June 29 (Thu) to July 5 (Wed)**
 - Refer to the section 7 of “Guidelines for Applicants to the 2024 Doctor’s Program” provided by the University of Tokyo’s Graduate School of Engineering.
 - TOEFL official score: Refer to the “Notice regarding Foreign-language (English) Examinations in 2024 (Doctor’s Program)” provided by the University of Tokyo’s Graduate School of Engineering. (must arrive **August 9 (Wed)**)
- Documents directly submitted to Department of Systems Innovation (**1/2**)
 - ◆ **Declaration of Preferred Supervisors** (Submission Deadline: **July 5 (Wed)**)
 - ◆ **Answers to Technical Questions** (Submission Deadline: **August 17 (Thu)**, details will be announced on department website)
 - Document format can be downloaded from department website.
 - Applicants may be exempted to submit Answers to Technical Questions.
 - Submission method etc., will be published on the department website.

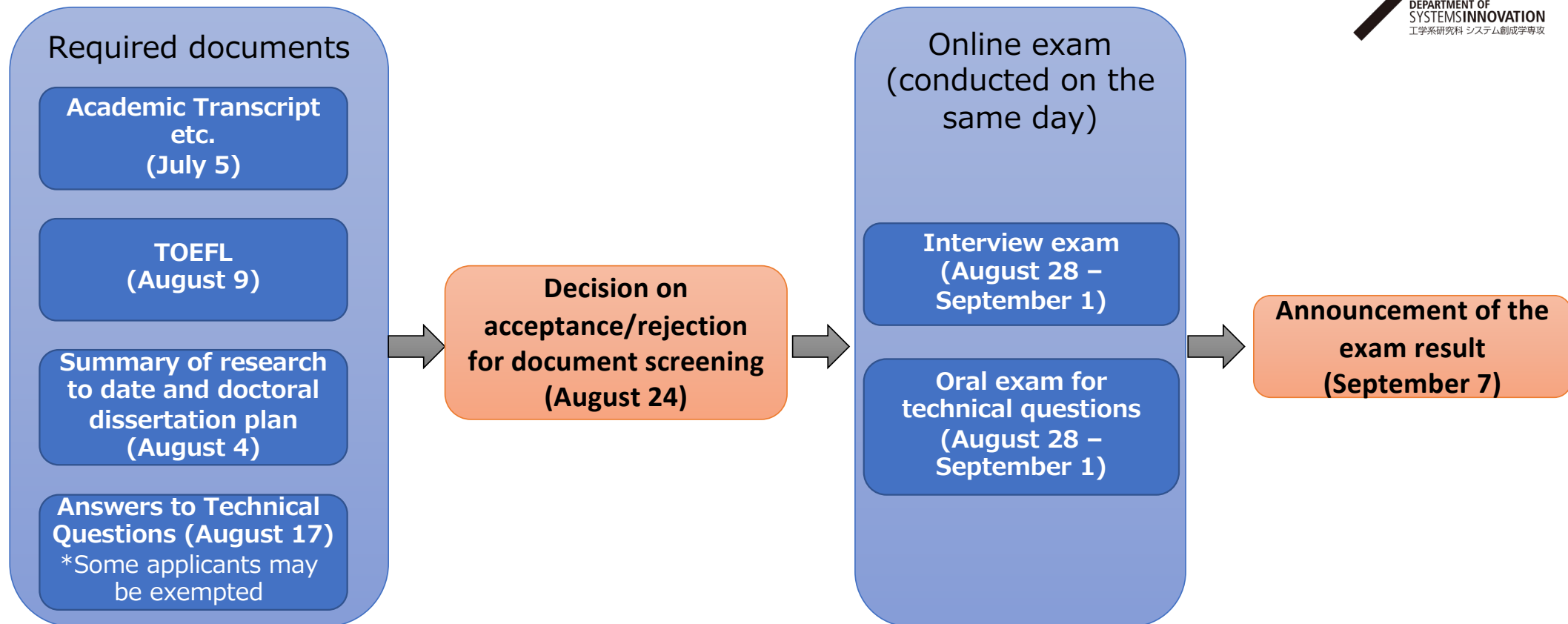
Required Documents (Doctor's program) -2

- Documents directly submitted to Department of Systems Innovation (2/2)
 - ◆ **PDF file of the presentation materials you plan to use in the general oral exam**
(submission deadline: August 26 (Sat))
 - Only applicants who pass the document screening
 - Applicants taking only the primary examinations (primary oral examination) (Submission deadline: **August 4 (Fri)**)
 - ◆ **Summary of research to date (4 pages, A4 or US Letter; 1 copy)**
 - ◆ **Doctoral dissertation plan (1 page, A4 or US Letter; 1 copy)**
 - Applicants taking the secondary examination (combined primary and secondary oral examinations) (Submission deadline: **August 4 (Fri)**)
 - ◆ **Summary of research to date and doctoral dissertation plan (6 pages, A4 or US Letter; 1 copy)**
 - ◆ **Copy of your master's thesis (or equivalent other document[s] illustrating research achievements) (1 copy)**
 - ◆ **List of research achievements (1 copy)**
- Refer to Guide to Entrance Examinations for details

Flow of exam (Master's Program)



Flow of exam (Doctor's Program)



Review of important points



- Please regularly check the department website for the latest information
 - Details on examination will be announced on the department website as soon as they are determined.
- The contents of Problems Related to Systems Innovation will be similar to those of the last year.
- Please read both “Guidelines for Applicants of Graduate School of Engineering” and “Guide to Entrance Examinations of the Department of Systems Innovation” for details.
 - Be sure to get and read both material.
 - For doctoral programs, please carefully read the requirements for exemption from the English examination and technical questions.

Notifications



- Do not share the URL or password, etc., for the online exams.
- Do not post any examination materials on the Internet.
- Unless explicitly instructed by the examiner, taking photographs, capturing screenshots, and/or making audio and video recordings are strictly prohibited during the online exams.
- These actions are judged as cheating.

Miscellaneous

■ Supervisor's list

- Supervisor's list is available in Guide to Entrance Examinations.
- Contact address is not shown in the list. Please individually ask supervisors or check website.
- See a faculty introduction page on our website
<https://www.sys.t.u-tokyo.ac.jp/labinfo/portal/>

■ Special Selection of Foreign Students

- If applicants wish to apply this program, please contact preferred supervisors.
- Guideline and application form will be directly sent from preferred supervisors only if preferred supervisor permit the applicants to apply this program.

Miscellaneous



■ Financial support

- Eligible student of master's programs are also exempted from full or half tuition and enrollment fees, depending on academic performance and household financial situation (specific criteria are shown on the website of UTokyo).
- For doctoral programs, various financial support systems are available.
- The Japan Student Services Organization (JASSO) offers scholarships for both master's and doctoral students. You may be exempted to pay back the scholarship for the students with excellent academic records

Miscellaneous



- Contact us: The Administrative Office of the Department of Systems Innovations
 - ◆ Tel: 03-5841-6533
 - ◆ Email: admission@sys.t.u-tokyo.ac.jp
 - ◆ Inquiry form: <http://www.sys.t.u-tokyo.ac.jp/contact/>
- Information session for entrance exam will be conducted one more time
 - 2nd information session: June 3rd (Sat) 13:00- (Onsite and Online)

Questionnaire



[https://forms.gle/PBG7HRsSH7R
BXTg86](https://forms.gle/PBG7HRsSH7RBXTg86)

←Please access the questionnaire
form from this QR code