

Academic Year 2018
Graduate School of Engineering, the
University of Tokyo
Department of Aeronautics and
Astronautics

Guide to Entrance Examination

Master's Program
Doctoral Program

Inquiries

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Academic Year 2018
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Master's program entrance examination guide

“Educational Policy of Department of Aeronautics and Astronautics/Purpose of research”

(1) Aeronautics and Astronautics, which has great potential for development as an industry, is a valuable source of undeveloped technology:

Aerospace is still an immature field in terms of technology and its utilization; therefore, it holds great promise for future development. The Department of Aeronautics and Astronautics pursues the discipline's significance and possibilities that are outward as well as underlying. The program conducts research and provides education that can be utilized for the welfare and happiness of mankind.

(2) Advanced technology in the field of Aeronautics and Astronautics will be spun off to other fields:

By conducting research and providing education in the aerospace field, which requires an extremely high level of performance and leading-edge technology, we aim to create advanced technology, discover knowledge, and promote new developments in engineering that are applicable to many other fields.

(3) Aeronautics and Astronautics represent system integration technology:

In the world of aerospace, engineering and science, which relate to many fields, are integrated. Technology that combines ideas is required, in particular to construct a system that aims to achieve one purpose. By taking advantage of the nature of this discipline, this program strives to conduct system integration and practical research while providing education focusing on space missions.

1. This guide aims to supplement the application guidelines for the master's program students in the Graduate School of Engineering, the University of Tokyo, for academic year 2018. In addition, examinees should carefully read the “examinees' instructions” provided at the end of this entrance examination guide.
2. As described in the application guidelines, we plan to accept 37 students into the Department of Aeronautics and Astronautics in 2018.
The examination for this major includes a written test (foreign language [English], general education subjects [mathematics], and specialized subjects) and an oral test. As a general rule, students are required to take the exam in all subjects, including the oral test.
3. An orientation on the graduate school entrance exam of Department of Aeronautics and Astronautics will be held in the Room 56 on the first floor of Engineering Building 5 at 12:15 pm on May 22 (Monday).
4. The schedule of the examination is as follows. The test center will be posted on the bulletin board in the Engineering graduate course administrative office at 10:00 am on August 25 (Friday). (Please refer to the examinees' instructions). The test center for other subjects will also be posted at the entrance of the Department of Aeronautics and Astronautics (Engineering Building 7) at about the same time.

Month and Day	Time	Subject	Remarks
August 28 (Monday)	9:00-11:30	English	Note 1)
	13:00-15:30	Mathematics	

August 29 (Tuesday)	9:00-12:00	Specialized subjects	Note 2)
	13:30-16:30	Specialized subjects	Note 2)
August 30 (Wednesday)	Morning/ Afternoon	Oral examination	Note 3)

Note 1) As part of the master’s program entrance examination for this graduate school, the TOEFL ITP will be given as an English test. **All examinees must take the TOEFL ITP.** It should be noted that the results of the TOEFL ITP test are only valid for the entrance examination for this graduate school. The score cannot be used as an official score

Note 2) In the written tests for the specialized subjects that will be taken in the morning and afternoon, examinee may freely choose three out of four subjects including fluid mechanics (fluid mechanics and high-speed aerodynamics), solid mechanics (mechanics of materials and structures), aerospace system engineering (flight mechanics and control), and propulsion engineering (thermodynamics and mechanical dynamics).

Note 3) The oral examination is conducted on topics related to the fields that examinees plan to research on after enrolling in graduate school and the topics related to their thesis in the undergraduate program. The examination time will be posted during the test period.

5. Instructors in the Department of Aeronautics and Astronautics

The academic staffs teaching in the Department of Aeronautics and Astronautics consist of full-time academic staffs for this major (at Hongo campus) and academic staffs affiliated with the Department of Advanced Interdisciplinary Studies, the Graduate School of Frontier Sciences, Institute of Space and Astronautical Science in Japan Aerospace Exploration Agency. Currently (April 2017), there are 34 instructors in the Department of Aeronautics and Astronautics. Each academic staff’s area of expertise is shown in the Appendix that follows. In the attached table, the staffs designated with an asterisk (*) are scheduled for retirement in March 2018, and the staffs designated with a double asterisk (**) are scheduled for retirement in March 2019.

Remarks

- 1) According to Article 11 of the University of Tokyo Graduate School Regulations, graduate students must work with instructors in the department of their respective majors as their primary advisors.
- 2) In the attached table, “Aero & Astro” in the column of affiliation refers to the full-time academic staffs for this major (at Hongo campus); AIS refers to the Department of Advanced Interdisciplinary Studies; “Frontier Sci.” refers to the Graduate School of Frontier Sciences; RCAST refers to the Research Center for Advanced Science and Technology; JAXA/ISAS refers to Japan Aerospace Exploration Agency/Institute of Space and Astronautical Science.

6. For those students who wish to enroll in September, the number of seats for the laboratory assignment is limited. Therefore, please ensure to ask the faculty office about the details before application.

7. The primary advisors will be determined by November 2017 after the department administers a survey on the successful candidates' preferences on the academic advisor in September 2017.
8. The items required to be carried to the written examination are as follows:
writing instruments, rulers, compasses, and erasers

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“Educational Policy of Department of Aeronautics and Astronautics/Purpose of research”

(1) Aeronautics and Astronautics, which has great potential for development as an industry, is a valuable source of undeveloped technology:

Aerospace is still an immature field in terms of technology and its utilization; therefore, it holds great promise for future development in the future. The Department of Aeronautics and Astronautics pursues the discipline’s significance and possibilities that are outward and underlying. The program conducts research and provides education that can be utilized for the welfare and happiness of mankind.

(2) Advanced technology in the field of Aeronautics and Astronautics will be spun off to other fields:

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(3) Aeronautics and Astronautics represent system integration technology:

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1. This guide aims to supplement the application guidelines for the doctoral program students in the Graduate School of Engineering, the University of Tokyo, for academic year 2018. In addition, examinees should carefully read the “examinees’ instructions” provided at the end of this entrance examination guide.
2. As described in the application guidelines, we plan to accept 18 students into the Department of Aeronautics and Astronautics in 2018. Selection is based on the first exam and the second exam. In addition, regarding the third point in the application guidelines, “application schedule B” will be not conducted.
3. An orientation on the graduate school entrance exam of Department of Aeronautics and Astronautics will be held in the Room 56 on the first floor of Engineering Building 5 at 12:15 pm on May 22 (Monday).
4. The schedule of the first examination is as follows. The test center will be posted on the bulletin board in the Engineering graduate course administrative office at 10:00 am on August 25 (Friday). (Please refer to the examinees’ instructions).

Month and Day	Time	Subject	Remarks
August 28 (Monday)	9:00-11:30	English	Note 1), Note 2)
	13:00-15:30	Mathematics	Note 1)
August 31 (Thursday)	Morning/ Afternoon	Oral examination	Note 3), Note 4)

Note 1) Students who have completed the master's program in the Graduate School of Engineering, the University of Tokyo, or in the Department of Advanced Energy, Graduate School of Frontier Sciences, the University of Tokyo, or who are expected to complete either of them, are exempted from taking the written tests for foreign language (English) and general studies (mathematics) on the first examination.

Note 2) As part of the doctoral program entrance examination for this graduate school, TOEFL ITP is given as an English test. **All students who are required to take a foreign language (English) test must take the TOEFL ITP.** It should be noted that the results of the TOEFL ITP test are only valid for the entrance examination for this graduate school. The score cannot be used as an official score.

Note 3) The specialized topics on the first exam will be divided into the following four groups. Only an oral examination will be conducted. The group assignments are determined according to each student's choice of academic advisor on their application forms.

- A. Aerodynamics
- B. Structure and Materials
- C. Control and Flight Dynamics
- D. Engines and Propulsion

Note 4) The oral examination for the science specialization on the first exam will be conducted on topics related to the examinees' fields of specialization. The examinees should prepare a summary (2–4 A4-sized pages) of their research area in the master's program and use it as supplementary information. Moreover, if an examinee who has already completed the master's program has conducted further research after completing the master's program, the examinee should bring his/her master's thesis, together with aforementioned summary which also includes the overview of his/her research conducted after the completion of the master's program. The test site, time, and number of copies of necessary materials will be posted in the lobby of Engineering Building 7 on August 28 (Monday). The examinees should refer to this information.

5. As a general rule, the second examination is scheduled to be held between late-January 2018 and mid-February 2018. It will be an oral examination concerning the areas of specialization. The examinees will be informed at a later date.

6. Instructors in the Department of Aeronautics and Astronautics

The academic staffs teaching in the Department of Aeronautics and Astronautics consist of full-time academic staffs for this major (at Hongo campus) and academic staffs affiliated with the Department of Advanced Interdisciplinary Studies, the Graduate School of Frontier Sciences, Institute of Space and Astronautical Science in Japan Aerospace Exploration Agency. Currently (April 2017), there are 34 instructors in the Department of Aeronautics and Astronautics. Each academic staff's area of expertise is shown in the Appendix that follows. In the attached table, the staffs designated with an asterisk (*) are scheduled for retirement in March 2018, and the staffs designated with a double asterisk (**) are scheduled for retirement in March 2019.

Remarks:

- 1) According to Article 11 of the University of Tokyo Graduate School Regulations, graduate students must select their primary advisors who belong to the department of students' majors.
- 2) In the attached table, "Aerospace" in the column of affiliation refers to the full-time academic staffs for this major (at Hongo Campus); AIS refers to the Department of Advanced Interdisciplinary Studies; "Frontier Sci." refers to the Graduate School of Frontier Sciences; RCAST refers to the Research Center for Advanced Science and Technology; JAXA/ISAS refers to Japan Aerospace Exploration Agency/Institute of Space and Astronautical Science.

7. The items required to be carried to the written examination are as follows:

writing instruments, rulers, compasses, and erasers

List of Academic Staff

Affiliation	Title	Name	Area of expertise
Aero & Astro	Professor	Shinji SUZUKI**	Flight Mechanics, System Optimization
Aero & Astro	Professor	Koichi HORI	Artificial Intelligence Application in Space
Aero & Astro	Professor	Koji FUJIMOTO	Deformation and Fracture of Materials
Aero & Astro	Professor	Toshinori WATANABE	Unsteady Aerodynamics in Turbomachinery, Aerospace Propulsion
Aero & Astro	Professor	Takahira AOKI	Mechanics of Materials and Structures, Composite Structures
Aero & Astro	Professor	Kenichi RINOIE	Aircraft Design, Separated Flow Aerodynamics
Aero & Astro	Professor	Shin-ichi NAKASUKA	Spacecraft Engineering, Control, Orbital Mechanics
Aero & Astro	Professor	Mituhiro TSUE	Combustion, Propulsion System
Aero & Astro	Professor	Kimiya KOMURASAKI	Electric and Advanced Space Propulsion, Electromagnetic Energy System
Aero & Astro	Professor	Takeshi TSUCHIYA	Flight Mechanics, System Optimization
Aero & Astro	Associate Professor	Susumu TERAMOTO	Aerodynamics of Internal Flow
Aero & Astro	Associate Professor	Koji UENISHI	Mechanics of Materials, Impact Engineering
Aero & Astro	Associate Professor	Takehisa YAIRI	Artificial Intelligence and Machine Learning for Space Systems
Aero & Astro	Associate Professor	Takehiro HIMENO	Aerospace Propulsion
Aero & Astro	Associate Professor	Taro IMAMURA	Aircraft Aerodynamic, Computational Fluid Dynamics, Computational Aeroacoustics
Aero & Astro	Associate Professor	Shinji NAKAYA	Combustion, Propulsion System
Aero & Astro	Associate Professor	Tomohiro YOKOZEKI	Mechanics of Materials and Structures, Composite Structures
Aero & Astro	Associate Professor	Ryu FUNASE	Guidance, Navigation and Control of Spacecraft, Deep Space Exploration System
Aero & Astro	Professor	Shinsuke SAKAI*	Reliability Engineering, Spacecraft Structure

Aero & Astro	Associate Professor	Chihiro INOUE*	Spacecraft Propulsion, Two-Phase Flow
Frontier Sci.	Professor	Nobuo TAKEDA*	Smart Structure and Materials, Composite Engineering
Frontier Sci.	Professor	Kojiro SUZUKI	Aerodynamics and Aero-thermodynamics of High Speed Flow
Frontier Sci.	Associate Professor	Hiroyuki KOIZUMI	Electric Propulsion
AIS	Professor	Akira IWASAKI	Earth Observation, Space Environment Utilization
RCAST	Professor	Katsuhiko NISHINARI	Nonlinear Dynamics
RCAST	Associate Professor	Daichi YANAGISAWA	Application of Fluid Dynamics and Cellular Automaton
ISAS/JAXA	Professor	Junichiro KAWAGUCHI	Astrodynamic
ISAS/JAXA	Professor	Yoshifumi INATANI**	Space Transportation System, Reentry & High-Speed Aerodynamics
ISAS/JAXA	Professor	Hitoshi KUNINAKA	Electric Propulsion, Space Plasma Engineering
ISAS/JAXA	Professor	Toru SHIMADA	Rocket Propulsion, Combustion and Multiphase Fluid Dynamics
ISAS/JAXA	Professor	Kenji MINESUGI	Space Vehicle Structures
ISAS/JAXA	Professor	Hiroyuki OGAWA	Thermal-Fluids Engineering
ISAS/JAXA	Associate Professor	Kosei ISHIMURA	Space Structure
ISAS/JAXA	Associate Professor	Akira OYAMA	High Speed Fluid Dynamics, Design Engineering

Notice for Examination ~The 2018 Master's / Doctoral Program Graduate School of Engineering the University of Tokyo~

1. Examination Dates

Examinations will be held over five days, from August 28 (Monday) through September 1 (Friday), 2017.

(For details on times and location of the examination subjects, refer to "Guide to Entrance Examination" of the department you are applying to.)

2. Examination Location

Refer to the "Campus Map for the Examination" [see the attached paper].

(1) The actual place of the examination subjects for applicants will be posted on the bulletin board for School of Engineering and each department at 10:00 a.m. on August 25 (Friday), 2017.

Confirm the specified place for the examination subjects beforehand. In addition, confirm the bulletin board for the department you are applying to.

Applicants registered for the examination of TOEFL ITP must refer to the "Guide for Applicants Taking the Examination of TOEFL ITP" [see the attached paper]. Note that the examination room of TOEFL ITP, Regular education subjects(一般教育科目(一般学術)), and specialized subjects(専門科目(専門学術)) may differ.

(2) Applicants should arrive at the specified place for the examination subjects 15 minutes prior to the scheduled examination time.

For the examination of specialized subjects(専門科目(専門学術)), also refer to notice by the department you are applying to.

3. Items to Bring

(1) Examination admission card

(2) Black pencils (or black mechanical pencils), an eraser, a pencil sharpener (a desktop type is not allowed) and a watch (only with a time measurement function is allowed).

(3) Use of electronic devices such as cell phones is strictly prohibited throughout the examination, even if you only use it as a watch. Make sure to completely deactivate the alarm setting, turn off the phone power, and put it in your bag before you enter the examination room. Do not take it out in the examination room.

(4) For the item to bring for the examination of specialized subjects(専門科目(専門学術)), refer to notice by the department you are applying to.

4. Notice during Examination of Regular Education Subjects (一般教育科目(一般学術))

(1) Applicants can not leave the examination room after the start of the examination.

(2) The Examination admission card must be kept on your desk at all times during the examination.

(3) For the examination of regular education subjects(一般教育科目(一般学術)), applicants must write his/her examinee number on each answer sheet, not his/her name. Applicants must use one answer sheet for each problem. Applicants can use the reverse side if necessary. At the end of the examination, follow your proctor's instructions and carefully cut out the designated places with a pair of scissors.

(4) Applicants can not take away the answer sheets and the problem booklets after the examination.

5. The Secondary Examination for Applicants to the Doctoral Program

The secondary examination will be held between late January and mid-February, 2018.

Applicants will be advised of Examination dates and location regarding secondary examinations for the department you are applying to later.

6. Miscellaneous

(1) The Examinee Numbers of successful applicants will be posted on the School of Engineering bulletin board at 4:00 p.m. on September 7 (Thursday), 2017.

The Examinee Numbers of successful applicants will be posted on the web site of the School of Engineering by September 8 (Friday), 2017, as well. It will be next from the post time to the bulletin board mentioned above. (The page will be linked from <http://www.t.u-tokyo.ac.jp/soe/index.html>).

(2) Successful applicants will be notified of authorization for admission by mail from the day following the announcement of successful applicants. The School will not accept telephone calls, fax, e-mail, and other inquiries regarding the results of the examinations.

(3) After the application process is complete, applicants must report immediately in case of change of current address or contact.

(4) For inquiries, contact: Graduate School Team, Administrative Division, School of Engineering, the University of Tokyo (03-5841-6038,7747)

試験場案内(東京大学本郷キャンパス)
 Campus Map for the Examination
 (Hongo campus, the University of Tokyo)

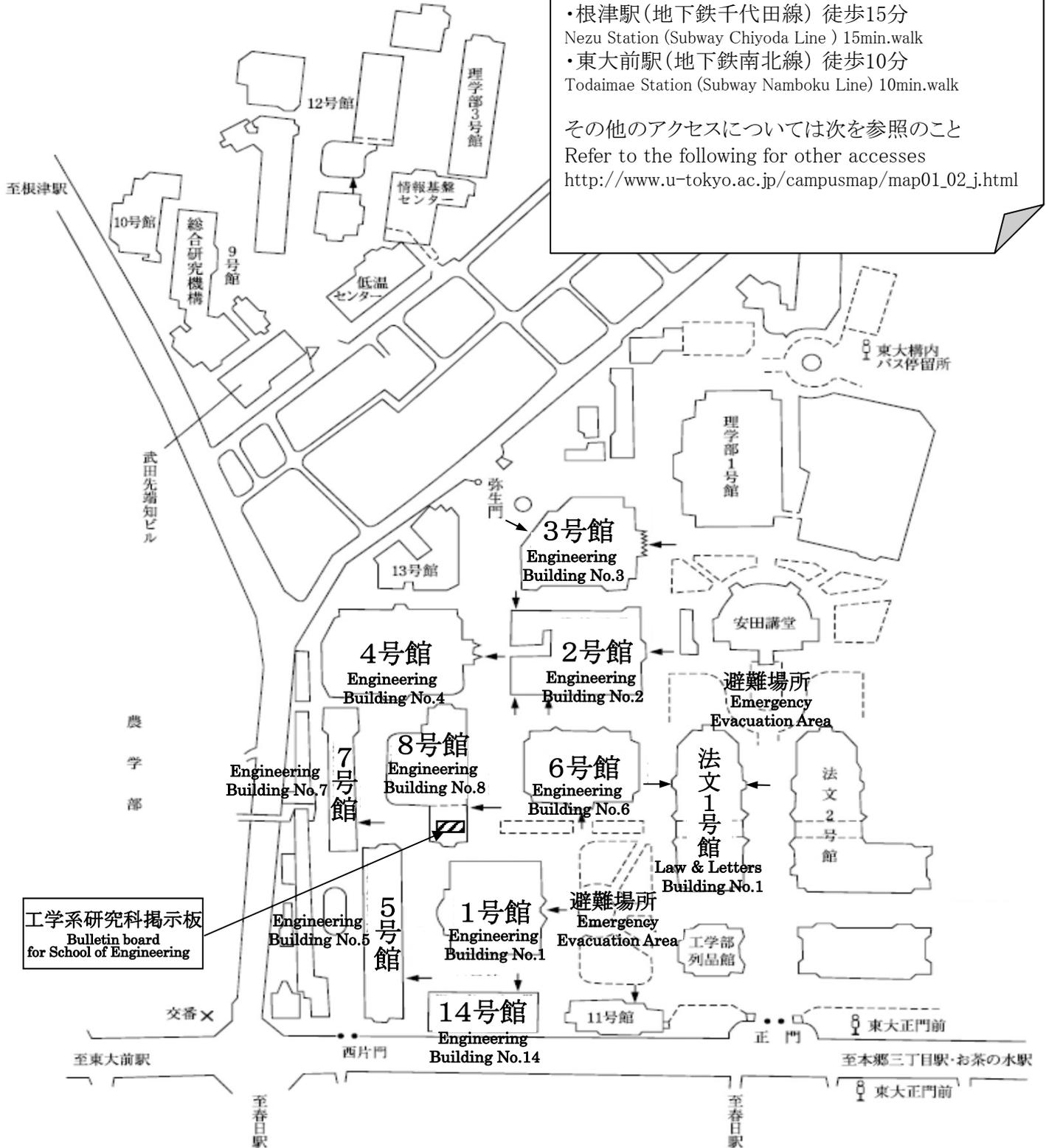
地下鉄利用 Subway

- 本郷三丁目駅(地下鉄丸の内線) 徒歩20分
 Hongo-sanchoime Station (Subway Marunouchi Line) 20min.walk
- 本郷三丁目駅(地下鉄大江戸線) 徒歩20分
 Hongo-sanchoime Station (Subway Oedo Line) 20min.walk
- 根津駅(地下鉄千代田線) 徒歩15分
 Nezu Station (Subway Chiyoda Line) 15min.walk
- 東大前駅(地下鉄南北線) 徒歩10分
 Todaimae Station (Subway Namboku Line) 10min.walk

その他のアクセスについては次を参照のこと

Refer to the following for other accesses

http://www.u-tokyo.ac.jp/campusmap/map01_02_j.html



工学系研究科掲示板
 Bulletin board
 for School of Engineering