

For non-Japanese

Academic Year 2023
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 2023
Graduate School of Engineering, the University of Tokyo
Department of Aeronautics and Astronautics
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 2023. 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 2023.
The examination for this major includes the official TOEFL® (TOEFL iBT, TOEFL iBT Special Home Edition) score, a written test (general education subject [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

Note In order to take the entrance examination for the Department of Aeronautics and Astronautics, it is necessary to submit the official TOEFL® (TOEFL iBT, TOEFL iBT Special Home Edition) score so that it will reach Graduate School of Engineering by August 16 (Tuesday). For details, refer to "Notice Regarding Foreign-Language (English) Examinations in 2023 Entrance Examinations at the Graduate School of Engineering, The University of Tokyo." Examinees who are unable to take the TOEFL tests in their countries should contact the following department's email address (koku@office-aero.t.u-tokyo.ac.jp)

3. An orientation on the graduate school entrance exam of Department of Aeronautics and Astronautics will be held online at 12:15 on May 13. The details will be posted on the department's website.

4. The schedule of the examination is as follows. The test center will be posted on the School of Engineering website until 10:00 am on August 26(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 29 (Monday)	13:00-15:00	Mathematics	Note 1)
August 30 (Tuesday)	9:00-12:00	Specialized subjects	Note 2)
	13:30-16:30	Specialized subjects	Note 2)
August 31 (Wednesday)	Morning/ Afternoon	Oral examination	Note 3)

Note 1) In the written test for the general education subject [mathematics], examinees shall answer all six problems of Mathematics.

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 2022), 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 2023, and the staffs designated with a double asterisk (**) are scheduled for retirement in March 2024.

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. The primary advisors will be determined by November 2022 after the department administers a survey on the successful candidates' preferences on the academic advisor in September 2022. Please be aware that international applicants who fall under any of the conditions set out in "The University of Tokyo Security Export Control Regulations" may not receive permission to be supervised by the candidates' preferred academic advisor. Non-Japanese examinees shall submit a questionnaire on the primary advisors.
7. Overseas applicants who are not able to attend the on-site examination due to the COVID-19 situation may have an alternative option (on-line examination) during the examination period. Please contact to the department if such a situation turns out.
8. The items required to be carried to the written examination are as follows:

writing instruments, rulers, compasses, erasers, and a watch (watches with functions other than time measurement are not allowed)

Academic Year 2023
Graduate School of Engineering, the University of Tokyo
Department of Aeronautics and Astronautics
Doctoral 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 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:

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 can be applied 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 the 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 doctoral program students in the Graduate School of Engineering, the University of Tokyo, for academic year 2023. 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 2023. Selection is based on the first exam and the second exam.
3. The first examination for this major includes the official TOEFL[®] (TOEFL iBT, TOEFL iBT Special Home Edition) score, a written test (general education subjects [mathematics]), and an oral test. As a general rule, students are required to take the exam in all subjects, including the oral test.
In addition, regarding the third point in the application guidelines, “application schedule B” will be not conducted.

Note 1) In order to take the entrance examination for the Department of Aeronautics and Astronautics, it is necessary to submit the official TOEFL[®] (TOEFL iBT, TOEFL iBT Special Home Edition) score so that it will reach Graduate School of Engineering by August 16 (Tuesday). For details, refer to "Notice Regarding Foreign-Language (English) Examinations in 2023 Entrance Examinations at the Graduate School of Engineering, The University of Tokyo." Examinees who are unable to take the TOEFL tests in their countries should contact the following department’s email address (koku@office-aero.t.u-tokyo.ac.jp)

4. An orientation on the graduate school entrance exam of Department of Aeronautics and Astronautics will be held online at 12:15 on May 13. The details will be posted on the department's website.
5. The schedule of the first examination is as follows. The test center will be posted on the School of Engineering website until 10:00 am on August 26(Friday). (Please refer to the examinees' instructions)

Month and Day	Time	Subject	Remarks
August 29 (Monday)	13:00-15:00	Mathematics	Note 1) Note 2)
September 1 (Thursday)	Afternoon	Oral examination	Note 3) Note 4)

Note 1) In the written test for the general education subject [mathematics], examinees shall answer all six problems of Mathematics.

Note 2) 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 submitting the official TOEFL® score and taking the written tests for general studies (mathematics) on the first examination.

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 29 (Monday). The examinees should refer to this information

6. As a general rule, the second examination is scheduled to be held between late-January 2023 and mid-February 2023. It will be an oral examination concerning the areas of specialization. The examinees will be informed at a later date.
7. 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, and Institute of Space and Astronautical Science in Japan Aerospace Exploration Agency. Currently (April 2022), 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 2023, and the staffs designated with a double asterisk (**) are scheduled for retirement in March 2024.

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.
 - 3) Please be aware that international applicants who fall under any of the conditions set out in "The University of Tokyo Security Export Control Regulations" may not receive permission to be supervised by the candidates' preferred academic advisor. Non-Japanese examinees shall submit a questionnaire on the primary advisors.
8. Overseas applicants who are not able to attend the on-site examination due to the COVID-19 situation may have an alternative option (on-line examination) during the examination period. Please contact to the department if such a situation turns out.
9. The items required to be carried to the written examination are as follows. :
- writing instruments, rulers, compasses, erasers, and a watch (watches with functions other than time measurement are not allowed).

List of Academic Staff

Affiliation	Title	Name	Area of expertise
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	Mituhiko TSUE	Combustion, Propulsion System
Aero & Astro	Professor	Akira IWASAKI	Earth Observation, Space Environment Utilization
Aero & Astro	Professor	Kimiya KOMURASAKI	Electric and Advanced Space Propulsion, Electromagnetic Energy System
Aero & Astro	Professor	Susumu TERAMOTO	Aerodynamics of Internal Flow
Aero & Astro	Professor	Takeshi TSUCHIYA	Flight Mechanics, System Optimization
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	Associate Professor	Shu MINAKUCHI	Advanced Composites, Smart Structures
Aero & Astro	Associate Professor	Eri ITOH	Air Traffic Management, Air Transport System
Aero & Astro	Associate Professor	Samir Mohamed KHAN	Prognostics and System Health, Management
Aero & Astro	Associate Professor	Yu ITO	Aerospace Propulsion, Thermo-Fluid Engineering
Aero & Astro	Associate Professor	Ryo HIGUCHI	Mechanics of Composite Materials, Computational Mechanics

Frontier Sci.	Professor	Kojiro SUZUKI	Aerodynamics and Aero-thermodynamics of High Speed Flow
Frontier Sci.	Professor	Koji UENISHI	Mechanics of Materials, Impact Engineering
Frontier Sci.	Associate Professor	Hiroyuki KOIZUMI	Electric Propulsion
AIS	Professor	Takehisa YAIRI	Artificial Intelligence and Machine Learning for Space Systems
RCAST	Professor	Katsuhiro NISHINARI	Nonlinear Dynamics
RCAST	Associate Professor	Daichi YANAGISAWA	Application of Fluid Dynamics and Cellular Automaton
ISAS/JAXA	Professor	Toru SHIMADA*	Rocket Propulsion, Combustion and Multiphase Fluid Dynamics
ISAS/JAXA	Professor	Kenji MINESUGI	Space Vehicle Structures
ISAS/JAXA	Professor	Yuichi TSUDA	Spacecraft system, Orbital Dynamics, Astrodynamics
ISAS/JAXA	Professor	Ken GOTO	High Temperature Composite Materials, Structural Materials for Space Flight Systems
ISAS/JAXA	Associate Professor	Hiroyuki OGAWA	Thermal-Fluids Engineering
ISAS/JAXA	Associate Professor	Kazutaka NISHIYAMA	Electric Propulsion
ISAS/JAXA	Associate Professor	Akira OYAMA	High Speed Fluid Dynamics, Design Engineering
ISAS/JAXA	Associate Professor	Satoshi NONAKA	Aerodynamics of Launch Vehicle Space Transportation System

Notice for Examination ~The 2023 Master's / Doctoral Program Graduate School of Engineering, the University of Tokyo~

1. Examination Dates

Examinations will be held from August 29 (Monday) through September 2 (Friday), 2022.
(For details on times and location of the examination subjects, refer to the "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 School of Engineering website and each department website until 10:00 a.m. on August 26 (Friday), 2022.

Confirm the specified place for the examination subjects beforehand.

(2) Applicants should arrive at the specified place for the examination subjects 20 minutes prior to the scheduled examination time.

For the examination of specialized subjects (専門科目(専門学術)), also refer to notifications from 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), a watch (watches with functions other than time measurement are not allowed) and mask (including spares).

(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 any sound alerts and/or alarm settings, turn off the phone's power, and put it in your bag before you enter the examination room. Do not take it out in the examination room.**

(4) Wear a mask (plain, covering both nose and mouth) properly during the examination.

(5) For other items to bring for the examination of specialized subjects (専門科目(専門学術)), refer to notifications from 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) Follow the instructions from the proctor during the examination.

(2) You cannot leave the examination room after the start of the examination.

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

(4) Applicants cannot take home the answer sheets or the problem booklets after the examination.

(5) Do not leave the room until instructed to do so by the proctor.

5. The Secondary Examination for Applicants to the Doctoral Program

The secondary examination will be held between late January and mid-February 2023.

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

6. Miscellaneous

(1) The Examinee Numbers of successful applicants will be posted on the website of the School of Engineering at approximately 4 p.m. on September 8 (Thursday), 2022.

(<https://www.t.u-tokyo.ac.jp/en/soe>).

(2) 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 your mail address or telephone number for contact.

(4) For inquiries, contact: Graduate School Team, Administrative Division, School of Engineering, the University of Tokyo.

daigakuin.t@gs.mail.u-tokyo.ac.jp, 03-5841-6038, 7747

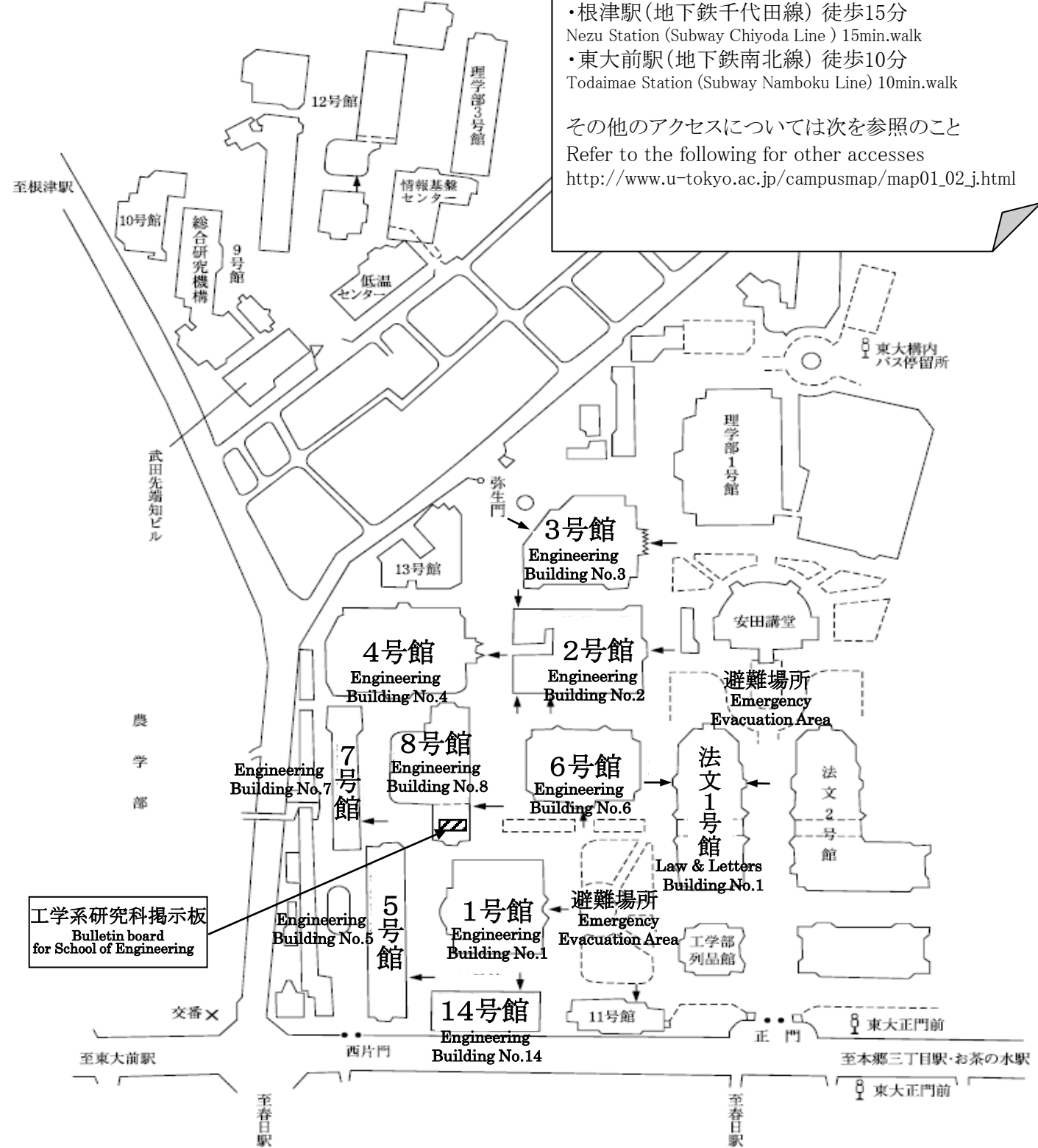
試験場案内(東京大学本郷キャンパス)
 Campus Map for the Examination
 (Hongo campus, the University of Tokyo)

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

至根津駅

武田先端知ビル

農学部

交番

至東大前駅

西片門

至春日駅

至春日駅

至本郷三丁目駅・お茶の水駅

東大正門前