2020 Entrance Examination Guide for Admission of
Department of Computer Science
Entrance time: September 2019 or April 2020

Graduate School of Information Science and Technology, The University of Tokyo

Master’s Programs and Doctoral Programs

Contact:
Administration Office of Department of Computer Science,
Graduate School of Information Science and Technology,
The University of Tokyo,
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656, Japan
EMAIL: admissions@is.s.u-tokyo.ac.jp TEL: 03-5841-4111

Web page for admission:
https://www.i.u-tokyo.ac.jp/edu/course/cs/admission_e.shtml

In addition to this brochure, be sure to refer to the online Admission Guide materials available on the above web page.
(i) **Master’s Program**

(1) **Introduction**

a. Department of Computer Science conducts Summer Entrance Examinations and Winter Entrance Examinations for Master’s Program. The schedules and examination methods differ for Summer and Winter Entrance Examinations.

b. Before sending Application Form, the applicants (except those who are completing Undergraduate Program of Department of Information Science of Faculty of Science of the University of Tokyo) should contact the supervisor of their first selection.

c. Fill up the "Preference Card (Master’s Program)" in this Guide, write your Research Plan as instructed in "Preference Card (Master’s Program)", and send them with the Application Form. Choose prospective supervisors from the faculty members of Department of Computer Science, given in "Faculty and Labs in Department of Computer Science" in this Guide.

(2) **Examination Schedule**

(2.1) **Summer Examinations**

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Venue</th>
<th>Examination Subjects</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00-12:30, Monday, August 19th, 2019</td>
<td>Notified when the Examination admission card is delivered.</td>
<td>Mathematics</td>
<td></td>
</tr>
</tbody>
</table>
b. Specialized Subjects

1) Written Examinations

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Venue</th>
<th>Examination Subjects</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00-11:30</td>
<td>Room 83, B1 floor, Faculty of Engineering Bldg. 8</td>
<td>Information Mathematics, Numerical Algorithms, Discrete Mathematics, Algorithms and Complexity, Formal Languages, Logic, Programming Languages, Computer Architecture, Operating Systems, Digital Circuit.</td>
<td>Three problems will be asked (the number may vary), and applicants are required to answer all the problems. Java or C language may be used in the examinations.</td>
</tr>
<tr>
<td>Tuesday, August 20th, 2019</td>
<td>(工学部 8 号館 地下 83 講義室 in Japanese)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00-14:30</td>
<td>Room 83, B1 floor, Faculty of Engineering Bldg. 8</td>
<td>Machine Learning, Graphics, Natural Language Processing, Bioinformatics, Computer Vision, in addition to the topics listed above.</td>
<td>Six problems will be asked (the number may vary), and applicants are required to choose and answer two of them. Java or C language may be used in the examinations.</td>
</tr>
<tr>
<td>Tuesday, August 20th, 2019</td>
<td>(工学部 8 号館 地下 83 講義室 in Japanese)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) Oral Examinations

Time: 10:00 – 12:00, 13:00 – 18:00, Wednesday, August 21st, 2019
Place: Rooms 102 ・202 ・214, Faculty of Science Bldg. 7
Waiting Room: Room 007, B1 floor, Faculty of Science Bldg. 7
(Enter the Waiting Room no later than 9:45)

(2.2) Winter Examinations

a. Overview

1. All the examinations (submitted documents, questions and answers) are conducted in English.
2. The submitted documents are examined first and its outcome determines the applicant’s eligibility for the Written and Oral Examinations. An examination admission card will be delivered, regardless of the applicant’s eligibility for the Written and Oral Examinations.
3. If your TOEFL score is less than 90 (iBT) or 577 (PBT), the application is rejected.
4. Together with the application form, submit a Letter of Recommendation. The letter should be enclosed in a sealed envelope by your recommender, with her/his signature written across the flap. Typically (but not necessarily) the recommender is an academic who knows you well, such as your current supervisor. The recommender should not be a faculty member of Department of Computer Science, The University of Tokyo.
b. Examinations by Submitted Documents

The submitted documents are reviewed and the outcome determines the applicant’s eligibility for the Written and Oral Exams.

An application with a TOEFL score less than 90 (iBT) or 577 (PBT) is rejected.

Your eligibility for the Written and Oral Examinations is announced on the website http://www.i.u-tokyo.ac.jp/edu/course/cs/admission_e.shtml from Monday, January 20th, 2020, 21:00 JST, for the period of three days (72 hours). The announcement is by the examinee’s number that is found on the examination admission card delivered in advance.

c. Written Examinations

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Venue</th>
<th>Examination Subjects</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00-12:30, Tuesday,</td>
<td>Room 214, 2nd floor, Faculty of Science Bldg.</td>
<td><strong>General Education Subjects</strong> (Mathematics), and <strong>Specialized Subjects</strong> (Information</td>
<td>Four problems will be asked (the number may vary), and applicants are required to answer all the problems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Java or C language may be used in the examinations.</td>
</tr>
</tbody>
</table>

d. Oral Examinations

- Time: 10:00-14:00, Wednesday, February 5th, 2020
  (Enter the Waiting Room no later than 9:45)
- Waiting Room: Room 214, Faculty of Science Bldg. 7 (理学部 7 号館 in Japanese)
- Contents:
  ✤ **Specialized Subjects**: out of
    - Machine Learning, Graphics, Natural Language Processing, Bioinformatics, Computer Vision, in addition,
    - the ones that are relevant to your research fields are chosen, and a few technical questions are asked on those topics. You can use a whiteboard or a blackboard to answer the questions.
  ✤ **Presentation of Research Plan**: describe your research plan within 5 minutes. You must be prepared; you may show slides on a projector, in case you find it useful. Bring your own PC in that case.
  - All the presentations and answers must be given in English.
(ii) **Doctoral Program**

(1) **Introduction**

a. Department of Computer Science conducts Summer Entrance Examinations and Winter Entrance Examinations for Doctoral Program. The schedules and examination methods differ for Summer and Winter Entrance Examinations.

b. Before sending Application Form, the applicants (except those who are completing Master’s Program of Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo) should contact the supervisor of their selection and show their research proposals.

c. Fill up the "Preference Card (Doctoral Program)" in this Guide, and write “Research Results, Selected Publication List, and Research Plan” as instructed in "Preference Card (Doctoral Program)", then send them with the Application Form. Choose a prospective supervisor from the faculty members of Department of Computer Science, given in "Faculty and Labs in Department of Computer Science" in this Guide.

d. For Summer Entrance Examinations, those who have completed or are completing programs in Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo, or Department of Information Science of Graduate School of Science of the University of Tokyo are exempted from submission of TOEFL score.

(2) **Examination Schedule**

(2.1) **Summer Examinations**

**A. Primary Examinations**

a. **General Education Subjects**

Applicants will not be required to take these examinations if they have completed or are completing the Master's Program of Department of Computer Science of Graduate School of Information Science and Technology, or of Department of Information Science of Graduate School of Science, the University of Tokyo.

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<tr>
<td>10:00-12:30,</td>
<td>Notified when the Examination admission card is</td>
<td>Mathematics</td>
<td></td>
</tr>
<tr>
<td>Monday, August 19th,</td>
<td>delivered.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td></td>
<td></td>
</tr>
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b. Specialized Subjects

1) Written Examinations

Applicants will not be required to take these examinations if they have completed or are completing the Master's Program of Department of Computer Science of Graduate School of Information Science and Technology, or of Department of Information Science of Graduate School of Science, the University of Tokyo.

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<td>Three problems will be asked (the number may vary), and applicants are required to answer all the problems. Java or C language may be used in the examinations.</td>
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<tr>
<td>Tuesday August 20th,</td>
<td>(工学部 8 号館地下 1 階 83 講義室 in Japanese)</td>
<td></td>
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<tr>
<td>2019</td>
<td></td>
<td></td>
<td></td>
</tr>
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2) Oral Examinations

Applicants will not be required to take Oral Examinations if they are completing the Master's Program of Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo.

Time: 10:00 – 12:00, 13:00 – 18:00, Wednesday, August 21st, 2019
Place: Rooms 102, 202, 214, Faculty of Science Bldg. 7
Waiting Room: Room 007, B1 floor Faculty of Science Bldg. 7
(Enter the Waiting Room no later than 9:45)
B. Secondary Examinations

Examinations by Master’s Thesis or its Equivalent and Oral Presentation

a. Details will be announced later. The dates will be from 3rd to 7th, February, 2020, and the place will be located in Faculty of Science Bldg. 7.

b. Present your research in Master’s course (in about 9 minutes) and research plan in doctoral course (in about 1 minute). Research results after completion of Master’s course can be included. Bring two copies of Master’s thesis (which can be in any other language than Japanese and English) and of a few published papers on the presented research, if any. Each examinee should prepare a PC for presentation.

- For applicants who are completing Master’s Program of Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo, the Secondary Examinations will be conducted separately.

- Secondary Examinations for those who have completed Master’s Program and for those who wish for September 2019 entry will be conducted at the same time as the Oral Examinations of the Primary Examinations.

(2.2) Winter Examinations

a. Overview

1. All the examinations (submitted documents, questions and answers) are conducted in English.

2. The submitted documents are examined first and its outcome determines the applicant’s eligibility for the Written and Oral Examinations. An examination admission card will be delivered, regardless of the applicant’s eligibility for the Written and Oral Examinations.

3. If your TOEFL score is less than 90 (iBT) or 577 (PBT), the application is rejected.

4. Together with the application form, submit a Letter of Recommendation. The letter should be enclosed in a sealed envelope by your recommender, with her/his signature written across the flap. Typically (but not necessarily) the recommender is an academic who knows you well, such as your current supervisor. The recommender should not be a faculty member of Department of Computer Science, The University of Tokyo.

b. Examinations by Submitted Documents

The submitted documents are reviewed and the outcome determines the applicant’s eligibility for the Written and Oral Exams.

An application with a TOEFL score less than 90 (iBT) or 577 (PBT) is rejected.

Your eligibility for the Written and Oral Examinations is announced on the website http://www.i.u-tokyo.ac.jp/edu/course/cs/admission_e.shtml from Monday, January 20th, 2020, 21:00 JST, for the period of three days (72 hours). The announcement is by the examinee’s number that is found on the examination admission card delivered in advance.
c. Written Examinations

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<th>Venue</th>
<th>Examination Subjects</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00-12:30, Tuesday, February 4th, 2020</td>
<td>Room 214, 2nd floor, Faculty of Science Bldg. 7 (理学部7号館2階214講義室 in Japanese)</td>
<td><strong>General Education Subjects</strong> (Mathematics), and <strong>Specialized Subjects</strong> (Information Mathematics, Numerical Algorithms, Discrete Mathematics, Algorithms and Complexity, Formal Languages, Logic, Programming Languages, Computer Architecture, Operating Systems, Digital Circuit).</td>
<td>Four problems will be asked (the number may vary), and applicants are required to answer all the problems. The problems will be given, and the answers must be, in English. Java or C language may be used in the examinations.</td>
</tr>
</tbody>
</table>

d. Oral Examinations

- Time: 10:00-14:00, Wednesday, February 5th, 2020  
  (Enter the waiting room no later than 9:45)
- Place: Wait at Room 214, Faculty of Science Bldg. 7 (理学部7号館 in Japanese)
- Contents:
  - **Specialized Subjects**: out of the topics listed above for the Written Examinations, and Machine Learning, Graphics, Natural Language Processing, Bioinformatics, Computer Vision, in addition, the ones that are relevant to your research fields are chosen, and a few technical questions are asked on those topics. You can use a whiteboard or a blackboard to answer the questions.
  - **Presentation of Master’s Thesis**: present your Master’s thesis within 15 minutes. Research results obtained after the completion of Master’s degree can be included. Bring two copies of your Master’s thesis (which can be in any language) and two copies of published papers on the presented results, if any. You must be prepared; you may show slides on a projector, in case you find it useful. Bring your own PC in that case.
  - **Presentation of Research Plan**: describe your research plan within 5 minutes. You must be prepared; you may show slides on a projector, in case you find it useful. Bring your own PC in that case.
- All the presentations and answers must be given in English.
(iii) Doctoral Program (Special Admission for Working Graduates)

(1) Introduction

a. Department of Computer Science conducts Summer Entrance Examinations and Winter Entrance Examinations for Doctoral Program. The schedules and examination methods differ for Summer and Winter Entrance Examinations.

b. Before sending Application Form, all applicants should contact the supervisor of their selection and show their research proposals.

c. Fill up the "Preference Card (Doctoral Program)" in this Guide, and write “Research Results, Selected Publication List, and Research Plan” as instructed in "Preference Card (Doctoral Program)”, then send them with the Application Form. Choose a prospective supervisor from the faculty members of Department of Computer Science, given in "Faculty and Labs in Department of Computer Science" in this Guide.

d. For both Summer and Winter Examinations, those who have completed programs in Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo, or Department of Information Science of Graduate School of Science of the University of Tokyo are exempted from submission of TOEFL score.

e. For Winter Entrance Examinations:
   1. Submitted documents, questions and answers should be in English.
   2. The submitted documents are examined first and its outcome determines the applicant’s eligibility for the Written and Oral Examinations.
   3. If your TOEFL score is less than 90 (iBT) or 577 (PBT), the application is rejected.
   4. Together with the application form, submit a Letter of Recommendation. The letter should be enclosed in a sealed envelope by your recommender, with her/his signature written across the flap. Typically (but not necessarily) the recommender is an academic who knows you well, such as your current supervisor. The recommender should not be a faculty member of Department of Computer Science, The University of Tokyo.

f. The additional documents, requirements and procedures specified in e. above do not apply to those who have completed or are completing programs in Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo, or Department of Information Science of Graduate School of Science of the University of Tokyo.
(2) Examination Schedule

(2.1) Summer Examinations
Same as (2.1) Summer Examinations, (2) Examination Schedule of (ii) Doctoral Program.

(2.2) Winter Examinations
Same as (2.2) Winter Examinations, (2) Examination Schedule of (ii) Doctoral Program, except:

- In Winter Examinations, only the Oral Examinations are conducted for those who have completed programs in Department of Computer Science of Graduate School of Information Science and Technology of the University of Tokyo, or Department of Information Science of Graduate School of Science of the University of Tokyo.

- Time: 10:00-14:00, Wednesday, February 5th, 2020
  (Enter the Waiting Room no later than 9:45)
- Waiting Room: Room 214, Faculty of Science Bldg. 7 (理学 7 号館 in Japanese)
- Present your research in Master’s course (in about 9 minutes) and research plan in doctoral course (in about 1 minute) in Japanese or in English. Research results after completion of Master’s course can be included. Bring two copies of Master’s thesis (which can be in any other language than Japanese and English) and of a few published papers on the presented research, if any. Each examinee should prepare a PC for presentation.
1. Examination Schedule
Refer to "Examination Schedule" listed in this Guide.

2. Examination Location
Hongo Campus, the University of Tokyo (7-3-1 Hongo, Bunkyo-ku, Tokyo)
Transportation by subway:
Marunouchi Line and Oedo Line: Get off at Hongo-sanchome Station (M21/E08)
Chiyoda Line: Get off at Nezu Station (C14)
Namboku Line: Get off at Todaimae Station (N12)
Mita Line: Get off at Kasuga Station (I12)
Transportation by bus:
Toei Bus "Todai Seimon Mae" or "Todai Konai"
Refer to "Venue" listed in this Guide.
Refer to Map of Examination Locations at the last page.
Examinees should be in the designated examination room no later than 15 minutes before
the start of examination. In case of being late, the applicant should find the examination
supervisor for further directions.

3. What to bring
(1) Examination admission card (受験票)
(2) Writing instruments (black pencils, black mechanical pencils, black fountain pens, or
black ball-point pens), erasers, pencil sharpeners (electric pencil sharpeners not
acceptable), and a clock or watch (for only checking the time; devices with other functions
not acceptable).
Caution: During the examination period, all mobile phones must be turned off. Examinees
will not be permitted to wear mobile phones (on neck straps, in pockets, etc.)

4. Examination Rules
(1) Examinees will not be permitted to leave the examination room, even when he or she
finishes or gives up answering.
(2) As a rule, examinees will not be allowed to leave the examination room during the
examination period. An examinee should tell the examination supervisor when she/he
feels ill or wants to use the washroom facilities.
(3) Examination admission cards (受験票) must be kept on the desktop through the
examination period.
(4) Examinees must enter their examinee's number on all answer sheets. Examinees must
not write their names. Enter answers on the corresponding answer sheets. If there is
not enough space, write answers on the back of the answer sheets.
(5) Examinees are not allowed to remove and take out answer sheets or problem booklet from
the examination room.
(6) Examinees should not use any devices other than writing instruments, pencil sharpeners,
and erasers.
# Preference Card (Master’s Program)

Department of Computer Science, Graduate School of Information Science and Technology, the University of Tokyo

<table>
<thead>
<tr>
<th>Program</th>
<th>Master</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant's Full Name</td>
<td>Examinee's Number</td>
</tr>
<tr>
<td>(Leave blank)</td>
<td></td>
</tr>
<tr>
<td>University of Graduation</td>
<td>Department:</td>
</tr>
<tr>
<td></td>
<td>Faculty:</td>
</tr>
<tr>
<td></td>
<td>University:</td>
</tr>
<tr>
<td>Contact Address during Examinations</td>
<td>E-mail</td>
</tr>
<tr>
<td></td>
<td>TEL</td>
</tr>
<tr>
<td>Your Selection of Supervisor (For Winter Examinations, select one)</td>
<td>1st</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
</tr>
<tr>
<td>Check □ if you wish to enter in September 2019:</td>
<td>□</td>
</tr>
<tr>
<td>Check □ if you enclose a recommendation letter:</td>
<td>□</td>
</tr>
<tr>
<td>(For Winter Examinations, the recommendation letter is required)</td>
<td></td>
</tr>
</tbody>
</table>

Describe your study purpose and research plan in the following format on A4 paper, and enclose it with the Application Form. For Summer Examinations, the description should be in one page in Japanese or English. For Winter Examinations, it should be in three pages, in English; describe your notable achievements too, if any.

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Research Plan

Name: *** ***

New information processing is enabled by the progress of computers. Still there remains a problem of .... In Master's Course I want to tackle this problem based on the following ideas:

(1) ...

(For Winter Examinations, include your notable achievements if any)
Notable achievements: ...

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* Fill this form and send it with the Application Form.
(This page is intentionally left blank)
【Preference Card (Doctoral Program)】
Department of Computer Science,
Graduate School of Information Science and Technology, the University of Tokyo

<table>
<thead>
<tr>
<th>Program</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant's Full Name</td>
<td>Examinee's Number</td>
</tr>
<tr>
<td>Universities of Graduation and Master's Degree</td>
<td>(Graduation) Department:</td>
</tr>
<tr>
<td></td>
<td>Faculty:</td>
</tr>
<tr>
<td></td>
<td>University:</td>
</tr>
<tr>
<td>Contact Address during Examinations</td>
<td>E-mail</td>
</tr>
<tr>
<td>Your Selection of Supervisor</td>
<td></td>
</tr>
</tbody>
</table>

Check □ if you take examinations as working graduates: □
Check □ if you wish to enter in September 2019: □
Check □ if you enclose a recommendation letter: □
(For Winter Examinations, the recommendation letter is required)

Describe your research results (try lucid explanations e.g. using figures), list your major publications, and research plan in the Doctoral Program in the following format in four A4 pages. Send them with the Application Form. Use Japanese or English (for Summer Examinations); use English (for Winter Examinations).

Name: Xxx Yyy

1. Research results

1.1 Fast algorithm of linear solution [1]
We have developed a fast algorithm for solution of large scale systems of linear equations...

1.2 Summary of study or research achievement during the period of employment
(Include this section if you take examinations as working graduates)

2. Selected Publication list

◆ Fill this form and send it with the Application Form.
Map of Examination Locations:
Hongo Campus, the University of Tokyo,
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8656

Department of Computer Science,
Graduate School of Information Science and Technology

By subway:
Marunouchi Line and Oedo Line: Get off at Hongo-sanchome Station (M21/E08)
Chiyoda Line: Get off at Nezu Station (C14)
Namboku Line: Get off at Todaimae Station (N12)
Mita Line: Get off at Kasuga Station (I12)

By Bus:
Toei Bus "Todai Seimon Mae" or "Todai Konai"