

Application Guidelines (October 2020 Enrollment) for the International Graduate Program for Excellence in Earth-Space Science (IGPEES), a World-leading Innovative Graduate Study (WINGS) Program

[For Students who Enrolled in the Master's Course in April, 2020]

Educational and research goals of IGPEES

IGPEES is an international combined Master's/Doctoral program that aims to further develop the field of astrobiology by providing an interdisciplinary program that seamlessly connects the wide-range of research fields in earth-space science, from the birth of the universe to the origin of life. The objective of the program is to train excellent students who already have a strong basis in their specialized fields to play active roles internationally as Doctoral graduates. Through the program, the students will develop the following qualities in addition to their knowledge of earth-space science:

- (1) Excellent research ability in a specialized field related to earth-space science
- (2) Ability to independently create new research fields by combining different subject areas, and to carry out interdisciplinary research in such fields
- (3) A global mindset and the communication skills needed to communicate with society and play an active role in the international community

In addition, to encourage the development of the above qualities, IGPEES aims to accept students from different backgrounds, including international students and students with full-time work experience.

1. Application requirements

To apply for this program, **you must be a student at the University of Tokyo and have enrolled in the Master's course of any department in the Graduate School of Science, the Department of Aeronautics and Astronautics, Graduate School of Engineering, the Department of Advanced Energy or the Department of Complexity Science and Engineering, both in the Graduate School of Frontier Sciences, in April, 2020.** You must also fulfill all of the requirements below (*1):

- You aim to acquire a PhD degree in earth-space science, in the broad sense of the term
- You fully understand the purpose of IGPEES, as well as the course requirements and other rules, and will cooperate with activities related to IGPEES
- You intend to enroll in the Doctoral program at one of the above-listed departments (*2)
- You agree to apply for the JSPS Research Fellowship for Young Scientists, and should you be accepted, you also agree to stay in IGPEES (This requirement does not apply for students awarded Japanese Government (Monbukagakusho) Scholarships)
- You are eager to gain experience abroad and to apply for external funding ([JSPS Overseas Challenge Program for Young Researchers](#) or other relevant programs)
- You understand and agree to the fact that your PhD diploma will bear a note saying that you have completed IGPEES

(*1) Except for the Forefront Physics and Mathematics Program to Drive Transformation (FoPM), you may not simultaneously apply for IGPEES and another WINGS program.

(*2) You must not apply for IGPEES if you are planning to find business employment when you finish your Master's degree.

2. Selection method

Selection will be based on the prospective students' application documents (Applicant Information, Research Proposal, Research Background, Essay, and Supervisor's Letter of Opinion), their scores in the graduate school entrance examination, and their performance in an interview. **Interviews are planned on July 28 (Tue), July 30 (Thu) and Aug 4 (Tue), 2020.** The timetable and details will be announced by email by Monday, July 13 (sent to the email address on your application form). If you have not received any notice by this date, please contact the WINGS Desk at the Academic Affairs Office of the Graduate School of Science (wings.s@gs.mail.u-tokyo.ac.jp).

3. Number of students to be admitted

Graduate School	Department	Number of students to be admitted
Graduate School of Science	Dept. of Physics	22
Graduate School of Science	Dept. of Astronomy	
Graduate School of Science	Dept. of Earth and Planetary Science	
Graduate School of Science	Dept. of Chemistry	
Graduate School of Science	Dept. of Biological Sciences	
Graduate School of Engineering	Dept. of Aeronautics and Astronautics	
Graduate School of Frontier Sciences	Dept. of Advanced Energy	
Graduate School of Frontier Sciences	Dept. of Complexity Science and Engineering	

4. Selection announcement and enrollment procedures

- (1) The applicant ID numbers of successful applicants will be posted in the front hallway of the School of Science Bldg. 1 (Area W), on Monday, **August 31, 2020** at around 1 pm. You will receive an applicant ID only when we have received your complete application. All applicants will also receive their results by email (sent to the email address on their application form).
- (2) Enrollment documents will be emailed to successful applicants with the selection results. Those who have been accepted must finish the necessary procedures (submitting the enrollment documents) by Monday, **September 14, 2020**. Those who fail to submit the necessary documents by the deadline may not be able to receive the financial support from the beginning.

5. Application procedures

(1) Application documents

a. Application Form

Fill out the form directly on the website indicated in (2).

b. Research Proposal

Fill out the form provided by the Graduate School of Science on the website indicated in (3), convert the file to a PDF, and upload the PDF file to the website in (2) as designated.

c. Supervisor's Letter of Opinion

Enter your supervisor's name, affiliation, title, and email address on the website indicated in (2). As soon as you submit your application, an automated email asking them to fill out an online form will be sent to your supervisor at the email address that you entered. Your supervisor will then have to fill

out the form directly on the designated website (*1 and *2).

(*1) Note that it is not until you submit your application that the email asking your supervisor to fill out our form is sent to them.

(*2) Confirm that your supervisor has submitted the form during the application period. Your application will not be considered unless all of the necessary documents (including the supervisor's letter of opinion) are submitted by the deadline. An automated email will be sent to you once the supervisor submits the form online.

(2) Online application form:

<https://apps.adm.s.u-tokyo.ac.jp/WINGS/>

(3) Download application documents from:

<https://www.s.u-tokyo.ac.jp/ja/info/6869/>

(4) Application period

Application Form and Research Proposal: From Monday, June 1st, 2020 until 3pm on Wednesday, June 17th, 2020 (JST). *Late submissions will not be accepted (*1).

Supervisor's Letter of Opinion: From Monday, June 1st, 2020 until 3pm on Friday, June 19th, 2020 (JST). *Late submissions will not be accepted

(*1) Complete the application well in advance as the server may become busy just before the deadline

6. Enrollment period

New IGPEES students will be enrolled in the program **from October 2020 to March 2022.**

In January or February of 2022, a Qualifying Examination (QE) will be held to select those permitted to stay in the program throughout their Doctoral studies. The QE will include the submission of a research proposal for your Doctoral research and the oral defense of the proposal. Students who pass the QE will be enrolled in IGPEES up to **March 2025.**

Those who are selected to stay in the course will take their Final Examination (FE) in the summer of 2024, and those who pass the FE will qualify to complete the course. The FE will include the submission of a research report and the oral defense of the report. The course will be completed if and when the students receive their PhD degrees. For those who submit their dissertations early, IGPEES will be completed at the time of the conferral of their degrees, provided that they have qualified to complete the course by that time.

7. Financial support

(1) Master's students

If desired, students may be appointed as *TAKUETSU* (Excellence) Research Assistants (TRAs) and be paid to engage in research related to earth-space science. The appointment will begin from October 1, 2020, and 170,000 yen will be paid per month (*1, *2, and *3). **Those who wish to be appointed as TRAs must fill out the designated column on the online application form indicated in 5. (2) to describe your research assignment as a TRA during the first academic year of enrollment (AY2020).**

Students awarded Japanese Government (Monbukagakusho) Scholarships or any scholarships from the University of Tokyo cannot be appointed as TRAs, but may apply for IGPEES. Students who do not wish to be appointed as TRAs, for example, because they are receiving other scholarships or have concerns about dependent exemption, may also apply for the program. In these cases, applicants only need to fill out the

Application Forms.

(2) Doctoral students

Students selected to stay in the course based on the results of the QE may also be appointed as TRAs. In this case, they will receive 180,000 yen per month to carry out research related to earth-space science (*1, *2, and *3). Students who are accepted as JSPS Research Fellows or who receive Japanese Government (Monbukagakusho) Scholarships or any scholarships from the University of Tokyo cannot be appointed as TRAs.

(*1) TRAs are not allowed to work as Research Assistants, but are encouraged to work as Teaching Assistants on campus.

(*2) Income tax will be deducted from your TRA salary every month. You must therefore make a year-end adjustment or file a final tax return.

(*3) If your total income in one calendar year (January-December) exceeds a certain amount, you will be excluded from the category of dependent and/or non-working dependent on your parents' or spouse's health insurance. Moreover, depending on your total yearly income, you may be required to pay resident's tax in the next fiscal year.

8. Course requirements

(1) Coursework

All IGPEES students are required to obtain two credits for the Special Lectures on Earth-Space Frontier Science I or II by the end of their Master's course. In addition, they must obtain six credits for courses from the Lectures on Earth-Space Frontier Science by the end of their first Doctoral year (at least two credits must be for courses given by a department other than their own), and at least two credits for the Exercises in Earth-Space Frontier Science (I-IV) by the end of their second Doctoral year. If a student has obtained credits for some of these courses prior to enrolling in IGPEES and after entering the graduate school, the credits will be counted toward their required coursework credits.

(2) Meetings with a secondary supervisor

Each IGPEES student is assigned a secondary supervisor in addition to their main supervisor. All IGPEES students are required to meet and report their academic progress to their secondary supervisor once every six months. See the Appendix for details of faculty members who can take on the role of secondary supervisor.

*The secondary supervisor system is designed to provide students with a wide-ranging interdisciplinary perspective that goes beyond their specialist field. Students are thus expected to select secondary supervisors who work in research fields that are different from their own.

(3) Onsite Training in Earth-Space Frontier Science

To complete IGPEES, students must take part in one of the three activities listed below by the end of their second Doctoral year. In principle, you are expected to participate in this activity for longer than two weeks:

- a. An assignment abroad
- b. A corporate internship
- c. Joint research at other universities or research institutions

*Students are required to submit a report of the activity to the WINGS Desk after they return. The program committee will review the report to decide whether to approve the activity for the completion of IGPEES. It is also possible to submit a proposal to the WINGS Desk for review before you carry out the activity to confirm whether your plan satisfies the program requirements.

9. Features of the course

(1) Errantry opportunities

IGPEES plans to cover overseas travel expenses for students to give several successive presentations on their research results before submitting their Doctoral dissertation. Details will be announced after the selection of IGPEES students.

(2) International secondary supervisors

In addition to the secondary supervisors described in 8. (2), internationally distinguished researchers may be available as international secondary supervisors to support and advise IGPEES students in their research activities. Details will be announced after the selection of IGPEES students.

(3) Scientific meetings hosted or co-hosted by IGPEES

Students are encouraged to attend meetings hosted or co-hosted by IGPEES, including seminars and forums.

(4) Job opportunities

IGPEES plans to offer jobs as Teaching Assistants for courses related to earth-space science and as mentors supporting international students.

10. Notes

- (1) Only applications for which all of the necessary documents are submitted by the deadline will be considered.
- (2) Under no circumstances may an applicant change the contents of their application once it has been submitted.
- (3) For unforeseen reasons, changes may be made to these guidelines or the application procedures. In such cases, an announcement will be made to potential applicants.
- (4) Personal information made known to IGPEES through the application process will be used for the following purposes: (i) selection of IGPEES students (application processing and selection), (ii) announcement of selected applicants, and (iii) enrollment procedures. For selected applicants only, the information will be further used for administrative duties relating to: (i) academic affairs (e.g., registration, enrollment), and (ii) student support (e.g., employment assistance, tuition waiver applications).
- (5) Any student who is found to have made a false statement in their application, even after being selected to join the program, may have their status as an IGPEES student removed retroactively.

11. Contact

WINGS Desk, Academic Affairs Office of the Graduate School of Science, The University of Tokyo
Room 275, School of Science Bldg. 1 (Area E), 7-3-1 Hongo, Bunkyo-ku, Tokyo
Phone: 03-5841-4087
Email: wings.s@gs.mail.u-tokyo.ac.jp

[Last updated: **May, 2020**]

List of Secondary Supervisors for the
International Graduate Program for Excellence in Earth-Space Science (IGPEES)

Name	Title, Affiliation	Specialization
Hirose Kei	Professor, Department of Earth and Planetary Science, Graduate School of Science [Program Coordinator]	High-pressure Geoscience
Aikawa Yuri	Professor, Department of Astronomy, Graduate School of Science	Theoretical Astrophysics
Amano Takanobu	Associate Professor, Department of Earth and Planetary Science, Graduate School of Science	Space Physics
Endo Kazuyoshi	Professor, Department of Earth and Planetary Science, Graduate School of Science	Geosphere and Biosphere Science
Funase Ryu	Associate Professor, Department of Aeronautics and Astronautics, Graduate School of Engineering	Nano-satellites, Deep Space Exploration Systems
Higuchi Hideo	Professor, Department of Physics, Graduate School of Science	Biophysics
Hirata Takafumi	Professor, Geochemical Research Center, Graduate School of Science	Geochemistry
Hoshino Masahiro	Professor, Department of Earth and Planetary Science, Graduate School of Science	Space Physics, Astroplasma Physics
Ikoma Masahiro	Associate Professor, Department of Earth and Planetary Science, Graduate School of Science	Theoretical Planetology
Kashikawa Nobunari	Professor, Department of Astronomy, Graduate School of Science	Galactic Astronomy
Masumoto Yukio	Professor, Department of Earth and Planetary Science, Graduate School of Science	Climate Dynamics, Physical Oceanography
Miura Hiroaki	Associate Professor, Department of Earth and Planetary Science, Graduate School of Science	Atmospheric Science
Murayama Hitoshi	Professor, Kavli Institute for the Physics and Mathematics of the Universe	Particle Theory
Nakasuka Shin-ichi	Professor, Department of Aeronautics and Astronautics, Graduate School of Engineering	Spacecraft Engineering
Seki Kanako	Professor, Department of Earth and Planetary Science, Graduate School of Science	Space Physics, Planetary Aeronomy
Suga Hiroaki	Professor, Department of Chemistry, Graduate School of Science	Bioorganic Chemistry

Name	Title, Affiliation	Specialization
<u>Sugita Seiji</u>	Professor, Department of Earth and Planetary Science, Graduate School of Science	Planetary Exploration
<u>Suto Yasushi</u>	Professor, Department of Physics, Graduate School of Science	Astrophysics
<u>Suzuki Kojiro</u>	Professor, Department of Advanced Energy, Graduate School of Frontier Sciences	Space Exploration Engineering
<u>Tachibana Shogo</u>	Professor, UTokyo Organization for Planetary Space Science, Graduate School of Science	Cosmochemistry
<u>Takahashi Yoshio</u>	Professor, Department of Earth and Planetary Science, Graduate School of Science	Molecular Geochemistry, Environmental Chemistry
<u>Tamura Motohide</u>	Professor, Department of Astronomy, Department of Astronomy (UG), Department of Astronomy (GR), Graduate School of Science	Exoplanet Astronomy
<u>Yamamoto Satoshi</u>	Professor, Department of Physics, Graduate School of Science	Astrophysics
<u>Yoshikawa Ichiro</u>	Professor, Department of Complexity Science and Engineering, Graduate School of Frontier Sciences	Planetary Exploration

* If the faculty member's name is in blue and underlined, it is linked to their website.