

Application Guidelines (AY2018) 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, 2018]

Educational and research goals of IGPEES

IGPEES is an international integrated 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

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, 2018.** 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 apply for JSPS's Overseas Challenge Program for Young Researchers
- 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 Program of Excellence in Photon Science, you may not simultaneously apply for IGPEES and another WINGS program or Program for Leading Graduate Schools.

(*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 for August 23 (Thurs), August 28 (Tues), September 5 (Wed), and September 6 (Thurs), 2018.** The timetable and details will be announced by email by Thursday, August 16 (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 Graduate School 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 results of the selection will be posted in the front hallway of the School of Science Bldg. 1 (Area W), on Tuesday, **September 25, 2018**, at around 1 pm. 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 Wednesday, **October 3, 2018**. Those who fail to submit the necessary documents by the deadline will be considered to have declined to enroll in IGPEES.

5. Application procedures

(1) Application documents

- a. Application Forms (MS Excel and Word)
- b. TRA Research Plan (if applicable) (See 7. (1))

Fill out the forms provided by the Graduate School of Science on the website indicated in (2), upload the files (MS Excel and Word) to the following website during the application period indicated in (3) below, and inform the WINGS Desk at the Graduate School Office of the Graduate School of Science by email (wings.s@gs.mail.u-tokyo.ac.jp) that the files have been uploaded (*1 and *2).

Upload application documents to:

https://webfs.adm.u-tokyo.ac.jp/public/j9tYwAoIv81A770BmaxkzWOwwvn-G_eTDUMgfPDYcLaM

- c. Supervisor's Letter of Opinion

Ask your supervisor to fill out the form provided by the Graduate School of Science on the website indicated in (2) and email the file to the WINGS Desk at the Graduate School Office of the Graduate School of Science (wings.s@gs.mail.u-tokyo.ac.jp) during the application period indicated in (3) below. Please use the UTokyo File Transfer System or similar service to send the file because attached files are

automatically deleted for security reasons (*3).

(*1) Upload the files well in advance as the server may become busy just before the deadline.

(*2) Put your Student ID number at the beginning of the file name when uploading the files (e.g., [35999999] Application Form). In addition, set the email subject as “Completed uploading the Application Forms for IGPEES” and include your name and Student ID number in the body of the email.

(*3) Confirm that your supervisor has sent the file 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.

(2) Download application documents from:

<https://www.s.u-tokyo.ac.jp/ja/info/5981/>

(3) Application period

From Friday, July 27 until 3pm on Wednesday, August 8, 2018 (JST).

*Late submissions will not be accepted.

6. Enrollment period

New IGPEES students will be enrolled in the program **from October 2018 to March 2020.**

In January or February 2020, 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 their Doctoral research and the oral defense of the proposal. Students who pass the QE will be enrolled in IGPEES up to **March 2023.**

Those who are selected to stay in the course will take their Final Examination (FE) in the summer of 2022, and those who pass the FE will qualify to complete the course. The FE will include the submission of a research proposal to be carried out after graduation and the oral defense of the proposal in terms of interdisciplinarity, strength of the research, internationality, insight into the wider field, and leadership. 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, 2018, and 170,000 yen will be paid per month (*1, *2, and *3). Those who wish to be appointed as TRAs must submit the TRA Research Plan in addition to the Application Forms.

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 based on the results of the QE will receive a monthly grant of 180,000 yen (*3 and *4). A IGPEES student may decline to receive the grant and still remain on the program. Students who are accepted

as JSPS Research Fellows are not allowed to receive the monthly grant.

If students are not selected to receive the monthly grant, they may 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).

- (*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' health insurance. Moreover, depending on your total yearly income, you may be required to pay resident's tax in the next fiscal year.
- (*4) The grant will count as miscellaneous income, and is thus subject to taxation. Recipients must file a tax return to the National Tax Agency. Failure to do so may be considered tax evasion. The WINGS Desk will send you the necessary papers in January. Recipients of the grant are not allowed to receive other financial aid or earnings from part-time work.

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, they should apply for them to be counted. If approved, 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 (*1).

(3) Required activities

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 (*2):

- a. An assignment abroad
- b. A corporate internship
- c. Joint research at another university or research institution

(*1) 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.

(*2) Students are required to submit a report of the activity (one A4 page) 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 a IGPEES student removed retroactively.

11. Contact

WINGS Desk, Graduate School 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: 03-5841-4079

Email: wings.s@gs.mail.u-tokyo.ac.jp

[Last updated: **July, 2018**]

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

Name	Title, Affiliation	Specialization
Kei Hirose	Professor, Department of Earth and Planetary Science, Graduate School of Science (Program Coordinator)	High-pressure Geoscience
Yuri Aikawa	Professor, Department of Astronomy, Graduate School of Science	Theoretical Astrophysics
Takanobu Amano	Associate Professor, Department of Earth and Planetary Science, Graduate School of Science	Space Physics
Masahiro Ikoma	Associate Professor, Department of Earth and Planetary Science, Graduate School of Science	Theoretical Planetology
Kazuyoshi Endo	Professor, Department of Earth and Planetary Science, Graduate School of Science	Geosphere and Biosphere Science
Nobunari Kashikawa	Professor, Department of Astronomy, Graduate School of Science	Galactic Astronomy
Hiroaki Suga	Professor, Department of Chemistry, Graduate School of Science	Bioorganic Chemistry
Seiji Sugita	Professor, Department of Earth and Planetary Science, Graduate School of Science	Planetary Exploration
Kojiro Suzuki	Professor, Department of Advanced Energy, Graduate School of Frontier Sciences	Space Exploration Engineering
Yasushi Suto	Professor, Department of Physics, Graduate School of Science	Astrophysics
Kanakano Seki	Professor, Department of Earth and Planetary Science, Graduate School of Science	Space Plasma Physics
Yoshio Takahashi	Professor, Department of Earth and Planetary Science, Graduate School of Science	Molecular Geochemistry, Environmental Chemistry
Shogo Tachibana	Professor, UTokyo Organization for Planetary Space Science, Graduate School of Science	Cosmochemistry
Shin-ichi Nakasuka	Professor, Department of Aeronautics and Astronautics, Graduate School of Engineering	Spacecraft Engineering
Hideo Higuchi	Professor, Department of Physics, Graduate School of Science	Biophysics

Name	Title, Affiliation	Specialization
Takafumi Hirata	Professor, Geochemical Research Center, Graduate School of Science	Geochemistry
Ryu Funase	Associate Professor, Department of Aeronautics and Astronautics, Graduate School of Engineering	Nano-satellites, Deep Space Exploration Systems
Masahiro Hoshino	Professor, Department of Earth and Planetary Science, Graduate School of Science	Space Physics, Astroplasma Physics
Yukio Masumoto	Professor, Department of Earth and Planetary Science, Graduate School of Science	Climate Dynamics, Physical Oceanography
Hiroaki Miura	Associate Professor, Department of Earth and Planetary Science, Graduate School of Science	Atmospheric Science
Hitoshi Murayama	Director, Kavli Institute for the Physics and Mathematics of the Universe	Particle Theory
Satoshi Yamamoto	Professor, Department of Physics, Graduate School of Science	Astrophysics
Ichiro Yoshikawa	Professor, Department of Complexity Science and Engineering, Graduate School of Frontier Sciences	Planetary Exploration