

Overview

2021-03-19

Educational System

The goal of our department is to form the core of research and education in earth and planetary sciences in Japan. In order to achieve this goal, five core groups based in Hongo (Atmospheric and Oceanic Science Group, Space and Planetary Science Group, Earth and Planetary System Science Group, Solid Earth Science Group, and Geosphere and Biosphere Science Group) cooperate in research and education, in addition to working closely with numerous institutions in The University of Tokyo (Atmosphere and Ocean Research Institute, Earthquake Research Institute, Institute for Solid State Physics, Center for Spatial Information Science, Research Center for Advanced Science and Technology, The University Museum, Graduate School of Frontier Sciences, Graduate School of Arts and Sciences, Geochemical Research Center, Department of Astronomy, and Department of Physics) as well as outside institutions (Japan Aerospace Exploration Agency, High Energy Accelerator Research Organization, etc.).

Credits requirements for degrees and overview of our curriculums

The educational scheme in graduate programs is as illustrated below. Dependent on the background of undergraduate studies, each student has a flexibility of combining basic and more advanced, specific courses/classes for her/his curriculum.

Master's Program

Education in our master's program aims to nurture research-oriented and engineering-oriented experts with wide scope and deep knowledge on specific fields of earth and planetary

sciences. Because more than 60% of our master's students have undergraduate degrees from institutions other than our two undergraduate, earth and planetary science departments and many of them have had no academic trainings in these fields, we offer introductory courses in the masters' program so that the students with no earth and planetary science background can learn basic knowledge common to all the specific fields of earth and planetary sciences. In addition, students can take undergraduate courses for credits. We have selected and arranged basic courses so that students will systematically learn basic knowledge in the specific fields that is necessary for conducting advanced research in the doctorate program. Furthermore, we offer highly specific and advanced courses such as special lectures and intensive classes (a few entire days devoted to one class) in each field mainly for interested doctorate students who have a good understanding in the field. Brief descriptions of course are summarized in the class list.

For a master's degree, students are required to obtain at least 30 credits in mandatory and other courses. Mandatory courses are Seminar of Current Scientific Literature I (2 credits), Earth and Planetary Science Colloquium I (2 credits), and Research in Earth and Planetary Science I (10 credits). The remaining 16 credits are expected to be obtained in basic and advanced courses.

Seminar of Current Scientific Literature I is a seminar organized mainly by the supervisor of each student. Through reading textbooks and/or individual papers relevant to her/his field, students are expected to thoroughly understand their own fields. Earth and Planetary Science Colloquium I is a seminar in which students give presentation on their research. Every graduate student is required to participate in a seminar organized by her/his supervisor, and by giving presentation periodically, she/he has opportunities to summarize the progress, receive opinions and suggestions from other members of the seminar, give opinions on presentations by faculty

members and fellow graduate students, and comprehend her/his research thoroughly. Research in Earth and Planetary Science I is the master's thesis, which each student writes based on results of two-year research. Each master's thesis is reviewed by three faculty members in related fields, in addition to be presented and defended in front of numerous faculty members at the department-wide defense in February. By passing this defense, she/he is finally granted a master's degree.

Doctorate Program

Education in doctorate program aims to encourage flexible and creative minds founded on a wide scope and deep knowledge on specific research field acquired during the master's program and to develop researchers with creativity and internationality who have ability of carrying out their original researches and presenting and discussing the results in the international community. In order to attain this objective, the department places a special emphasis on seminars and colloquiums in its doctorate program curriculum so as to effectively extract autonomy of students. In addition, first-year doctorate students are strongly encouraged to take the English for Scientific Researchers class offered by the department for learning English skills necessary for actively participating in international research projects.

For a doctoral degree, students are required to obtain at least 20 credits in mandatory and other courses. Mandatory courses are Seminar of Current Scientific Literature II (2 credits), Earth and Planetary Science Colloquium II (2 credits), and Research in Earth and Planetary Science II (10 credits). The remaining 6 credits are expected to be obtained mainly in English for Scientific Researchers, special lectures in their respective fields, and advanced courses.

Research in Earth and Planetary Science II is the doctoral dissertation written in either English or Japanese, although

it is strongly recommended to be written in English. It is also required to publish at least one first-authored, full-paper in English in an international journal before submitting a doctoral dissertation as a part of training of presenting results of research to the international scientific community. A doctoral candidate has a preliminary defense of her/his dissertation in front of numerous faculty members at the department-wide defense about one to two months before its submission. On passing this preliminary defense, she/he can proceed to writing the dissertation. The submitted dissertation is then reviewed and examined closely by a committee consisting of at least five faculty members (may include scientists outside of the department or even outside of the University of Tokyo) in relevant fields. By successfully going through this review process, she/he is finally granted a doctoral degree.