

Graduate School of Science and Technology

Department of Physics and Astronomy

Diploma Policy

1. The master's program aims to train students within the research area (field) in physics they have chosen. The goal is to train researchers, engineers, educators or highly skilled professionals who can demonstrate their expertise in a wide variety of contexts with the ability to contribute to society. Successful candidates will have attended courses for a specified period and have acquired the necessary credits for the Department of Physics and Astronomy. Those who have passed a final examination on their master's degree thesis and the following knowledge and skills, will receive the award of a master's degree (Master of Science).

A graduating student will acquire the following abilities:

- (1) An abundance of expertise and experience in the range of one's own research issues and research methods. In addition to that, the ability to think logically and critically based on the high level of expertise, research skills and insight acquired in the Department of Physics and Astronomy; and proactively solve problems that arise in the field.
 - (2) There are no borders in science. Students will acquire the ability to collect and use reliable evidence from among various data including advanced research results. In addition, considering the role of physics in the international community, students will actively contribute to the discovery, analysis, and solution of problems in specialist and related fields.
2. The doctoral program aims to train researchers who have a broad perspective, deep insight and expertise in the field of physics and related fields. The goal is to train leading researchers, engineers, educators or highly skilled professionals who can demonstrate creativity, sense of ethics and the ability to contribute to society. A doctoral degree (Doctor of Science) is accredited and awarded to those who have attended courses in the program for a specified period, who have acquired the necessary credits, have had their doctoral dissertation recognized as having reached the standard required, passed a consequent examination, and an oral examination of general academic ability and who are found to have the required skills and knowledge of the following points:
 - (1) Both advanced, detailed knowledge and practical experience in research issues and research methods. In addition, to take a lead in proactively solving problems that arise in the specialist research area (field).
 - (2) The possibility to generate new ideas, develop research methods and broaden the scope of their application.
 - (3) In addition to collecting research information in an international setting, students are able to transmit information and lead research independently of differences in specialist fields, research areas and social positions. In addition, students are able to point out insufficiencies or suspicious points in one's own research results, or of others, and have insight to develop a method to solve it.

Curriculum Policy

1. In the master's program, subsequent to the acquisition of specialist knowledge in physics, the following curriculum is organized to foster researchers, engineers, educators and professionals who can demonstrate their expertise in the research area (field) of the Department of Physics and Astronomy.
 - (1) Research guidance will be conducted in Advanced Research in Physics 1A and Advanced Seminar in Physics. Advanced Research in Physics 1A aims for students to gain practical experience in problem solving by obtaining expertise on research methods and subjects in their research fields through research activities in one's assigned laboratory. In addition, students participate in international conferences and gain internationality. Advanced Seminar in Physics are a place where students can conduct research reports or dissertation introductions to faculty

members and graduate students. Here, students refine their expertise through questions and discussions, and gain knowledge of related fields.

- (2) Major Courses (Specialization) offered in the Department of Physics and Astronomy are courses for acquiring basic to advanced knowledge in one's own research field.
 - (3) Students may study both the crossover between physics, science and engineering and the attainment of better communication skills, a deeper understanding of ethics, and a greater sense of global literacies. Students may thus take specialist courses in other science departments and/or general liberal arts courses (credits for graduation can be gained in either segment).
2. In the doctoral program, as well as creating personnel with perspectives not limited to the scope of the research area or field of physics; with research guidance at its core, students demonstrate their specialist knowledge and creativity as independent researchers and leading professionals.
- (1) Every research supervisor is in charge of Physics Research. Practical experience is gained by acquiring detailed expertise on the research methods and subjects -- used in the specialist fields that are addressed through research activities -- in the post-graduate laboratory one has joined, with such activities as presentations at domestic and foreign academic societies. The goal is to be able to independently discover and analyze problems with creativity and leadership.
 - (2) Students are free to take courses in Major Courses (Specialization) or Liberal Arts (liberal arts) in order to foster a broad perspective and sociality, internationalism and ethics.

Admissions Policy

The education and research philosophy of the university is based on the meritocratic tradition.

1. The master's degree program in physics is based on the basic academic ability and wide range of liberal arts acquired in the bachelor's degree program. The aim is to acquire the skills necessary for those with the intent to discover and solve problems in their specialist field. The master's degree program seeks those who are willing to work in collaboration with a diverse range of people.
2. The doctoral program is based on the expertise in research acquired up to master's program level. The doctoral program seeks those who are not only willing to independently conduct creative research in the field, but also to conduct research with an international perspective.
3. The university seeks those who are reliable and take actions based on firm scientific foundations. Unfair acts that undermine society's trust in science are regrettable.

Evaluation methods for the types of abilities required for the admissions policy in differing entrance examinations:

(General entrance examination)

The university seeks those who have the professional knowledge, English ability, thinking skills and communication skills commensurate with the characteristics of the major; and those who have the determination to conduct independent research. In the master's program, candidates will be selected through an examination of documents submitted, written examinations, qualifications / results of certified tests, and through interview. In the doctoral program, candidates will be selected through an examination of documents submitted, written examinations, and on the basis of an oral examination of their master's thesis.

(Special selection for working people, foreign student entrance examination)

The university seeks those who have acquired experience in research institutes or companies, have a positive attitude toward learning, and/or have skills acquired abroad. In the master's program, candidates will be selected through an examination of documents submitted, written examinations, qualifications / results of certified tests, and interview. In the doctoral program, candidates will be selected through an examination of documents submitted, written examinations, and an oral examination of their master's thesis.