

## Graduate School of Science Department of Physics

### Diploma Policy

1. The master's program in the Department of Physics aims to train researchers and technicians with a high level of expertise and sense of ethics. It also aims to create researchers who are highly professional and hold an international perspective. Successful candidates will have attended school for a specified period and acquired the necessary credits for the Department of Physics. Furthermore, those who have passed a final examination on their master's thesis will receive a master's degree (Master of Science).

A graduating student will acquire the following abilities:

- (1) The ability to obtain new knowledge by analyzing and solving problems with advanced technical knowledge and independent research skills in the field of physics.
  - (2) The ability to communicate science and technology to the general public based on a comprehensive knowledge of physics.
  - (3) The ability to view issues related to one's field of specialization from an international perspective along with the communication skills necessary to address these issues.
2. The doctoral program aims to train researchers who have excellent creativity in research and development to play a central role in research and educational institutions. A doctoral degree (Doctor of Science) is accredited and awarded to those who have attended courses in the program for a specified period, acquired the necessary credits for the Department of Physics, had their doctoral dissertation recognized as having reached the required standard, passed a consequent examination and an examination of general academic ability.

A graduating student will acquire the following abilities:

- (1) **Research ability and specialist knowledge** The ability to proactively address a broad range of advanced issues in the field of physics. The ability to discover, analyze, solve issues and then apply newly found expertise.
- (2) **Communication ability** The ability to communicate science and technology to the general public based on a comprehensive knowledge of physics. Moreover, the ability to objectively evaluate and communicate results of research into science and technology.
- (3) **International achievement** The ability to proactively address a broad range of issues in the field at an international level.

### Curriculum Policy

1. In the master's program, the curriculum is based on courses in the liberal arts, basic academic ability and expertise in research gained in undergraduate study; and organized so as to realize the purpose set for each graduate school / major, through specialist courses, courses in the liberal arts, and research guidance.
  - (1) In order to acquire more advanced specialist knowledge, special lectures, experiments and seminars are taught in a focused and effective manner..
  - (2) Courses in the liberal arts not only foster the attainment of a broad academic knowledge of the field of study, but also support the attainment of better communication skills, a deeper understanding of ethics, and a greater sense of global literacies.

- (3) Research Guidance helps students acquire the knowledge and experience necessary to conduct research through an understanding of the literature and discussions with supervisors. Moreover, Research Guidance helps students to develop such skills as conducting presentations of research and academic papers at domestic and foreign academic societies. In addition, students will be guided to increase their ability to express themselves effectively, to acquire a mastery of both research and development skills and problem-solving skills. Students will also be given guidance on becoming active as a researcher or highly skilled professional with an international perspective, either at home or abroad.
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 willing to independently conduct original research and to become a leading researcher in the field of physics, through Research Guidance and Courses in the liberal arts.
- (1) Research Guidance helps students acquire the knowledge and experience necessary to conduct research through an understanding of the literature and discussions with supervisors. Moreover, Research Guidance helps students to develop such skills as how to conduct presentations of research and academic papers at domestic and foreign academic societies. In addition, students will be guided to increase their ability to express themselves effectively, and to acquire a mastery of both research and development skills and problem-solving skills. Students will be given guidance on how to start becoming active as a researcher or highly skilled professional in their field of study, either at home or abroad.
- (2) Courses in the liberal arts not only foster the training of future personnel involved in researchers and development, but also support, the attainment of better communication skills, a deeper understanding of ethics, and a greater sense of internationality. In order to develop an interdisciplinary perspective, wide ranges of classes are available from a variety of experts.

## Admissions Policy

Based on the frontier spirit philosophy found in the study of space, Earth, organisms, solids, molecules, atoms, nuclei, elementary particles and the natural world in general:

1. The master's degree program is based on not only the basic academic ability and academic skills in physics acquired in the bachelor's degree program, but also the wide range of knowledge gained in the liberal arts. The university seeks those who aim to acquire the necessary skills necessary to solve problems through research in their specialist field.
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 willing to independently conduct original research and to become a leading researcher in the field of physics.

Candidate selection is based on the following selection methods:

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 acquired advanced knowledge of and acquired both the necessary ability to think for oneself, and that of academic English. In the master's program, candidates will be selected through an examination of documents submitted, written examinations (physical mathematics, mechanics,

electromagnetism, thermal/statistical mechanics, quantum mechanics, English) and interview. In the doctoral program, candidates will be selected through an examination of documents submitted, and an oral examination of their master's thesis.

(Recommendation entrance examination)

In the master's program, the university seeks those who have the professional knowledge, English ability, thinking skills and communication skills commensurate with the characteristics of expertise in physics, and those who have the determination to conduct independent research. Candidates will be selected through an examination of documents submitted and interview.

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

The university seeks those who have acquired experience of the basics of physics in research institutes, companies or universities have a positive attitude toward learning, and/or have skills acquired abroad. Candidates will be selected through their ability with written examination (Physical mathematics, mechanics, electromagnetism, thermodynamics / statistical mechanics, quantum mechanics, English) and interview. In the doctoral program, candidates will be selected through an examination of documents submitted, and an oral examination of their master's thesis. The special selection of mature students is conducted only in the doctoral program.