Graduate School of Science
Department of Applied Mathematics

Diploma Policy

1. The master's program in the Department of Applied Mathematics aims to foster teachers and/or highly skilled professionals able to apply their skills. Successful candidates will have attended school for a specified period and acquired the necessary credits for the Department of Applied Mathematics. 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 think logically and critically based on the high level of expertise, research skills and insight acquired in the department of applied mathematics and to solve problems in the field, proactively.

(2) The ability to understand and communicate important concepts of basic and applied mathematics to the general public; thereby contributing to the development of science.

(3) To possess the international perspective and the communication skills to be able to address issues related to the field of specialization.

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 Applied Mathematics, had their doctoral dissertation recognized as having reached the required standard, passed a consequent examination and an examination of general academic ability.

(1) The ability to have not only an in-depth understanding of the field of applied mathematics, but also the ability to discover, analyze and develop new creative research tools. In addition, the ability to teach researchers and/or highly skilled professionals in their fields of expertise.

(2) The ability to understand and communicate important concepts of basic and applied mathematics bearing in mind different views beyond the field of mathematics. Furthermore, the ability to demonstrate leadership as a highly skilled professional; contributing to the creation of a sustainable society.

(3) Acquire the ability to proactively address a broad range of issues in the field at an international level.

3. The curriculum is designed to meet diverse learning needs by enabling students to take courses in other graduate schools and other majors; and providing opportunities for interdisciplinary learning and cross-disciplinary exchange.

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 the major of applied mathematics in the following way:

(1) To acquire specialist knowledge of applied mathematics and be able to study and conduct research across a wide range of academic fields, a variety of special lectures are provided.

(2) Courses in the liberal arts not only foster the attainment of a broad and deep 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 gaining an understanding of the literature and through discussions with supervisors. By presenting research results at study meetings and international conferences, students will acquire the ability to objectively evaluate research results and communicate them correctly and effectively. In the two-year process of putting together research results in a master's thesis, research guidance will help foster the ability to analyze, evaluate and communicate research content.

2. The doctoral program is based on the advanced ability to expand on the knowledge about research and development that was acquired up to master's program level. The doctoral program provides a curriculum with the high level of research skills to realize the purpose set for the department of applied mathematics in the following way:

(1) Research Guidance helps students acquire the knowledge and experience necessary to conduct research through gaining an understanding of the literature and through discussions with supervisors. By presenting research results at study meetings and international conferences, students will acquire the ability to objectively evaluate research results and communicate them correctly and effectively. In addition to the former, research guidance will enable the deepening of ties with the wider international community of researchers. The three-year process of putting together research results in a doctoral dissertation, research guidance will help foster the ability to analyze, evaluate and communicate research content.
(2) Courses in the liberal arts are available which support the high degree of academic knowledge and practical ability necessary for students to carry out research and development as independent researchers or highly skilled professionals.
(3) To enable differing academic perspectives to be applied to a wide range of future applications and developments, students are permitted to take courses in other majors.

Admissions Policy

The university seeks those who can practice “the scientific method” and the concept of “meritocracy” in applied mathematics research and education.

1. The master's degree program is based on the basic academic ability and wide range of liberal arts acquired in the bachelor's degree program. The master’s degree program seeks those who have advanced knowledge and skills; and aim to become engineers, researchers or teachers with the ability to accommodate scientific developments,
2. The doctoral program is based on the expertise in research acquired up to master's program level. The doctoral program not only seeks those who are willing to independently conduct creative research in the field of applied mathematics and, thereby, to contribute to society, but also those who are willing to conduct research with an international perspective through joint research conducted both in Japan and abroad.

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 specialist knowledge of mathematics; and have acquired not only the ability to think for oneself, but also that of academic English. In the master’s

program, candidates will be selected through an examination of documents submitted, written examination (basic and specialist subject, 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 and communication skills commensurate with the characteristics of expertise in mathematics, and those who have the attitude 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 in research institutes or companies, and/or have knowledge and skills acquired overseas. In the master's program, candidates will be selected through an examination of documents submitted, written examinations (basics in the specialist field, specialist subject, and foreign language) 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 for mature students is conducted only in the doctoral program.