

Graduate School of Biological Science

Department of Biological Sciences

Diploma Policy

1. The curriculum of the Graduate School of Biological Science master's program aims to develop human resources who can contribute to society with advanced scientific expertise and research and development (R&D) skills based on a wide range of academic knowledge, ethics, and an international perspective on biological science. The Graduate School of Biological Science master's program certifies and awards a master's degree (Master of Science) to those who have completed the program for a specified period and who acquired the requisite knowledge and skills determined in their major, and have passed the examination of the master's thesis and final examination.

A graduating student will acquire the following:

- (1) Advanced knowledge that enables logical understanding of the life sciences by systematically acquiring cutting edge knowledge in the life science fields.
 - (2) The research ability and excellent skills necessary to contribute to solving problems that exist in the life sciences.
 - (3) The ability to integrate cutting edge knowledge, technology and ethics in the life sciences with the knowledge of other fields, and to discover, analyze and solve new problems with a broad perspective.
 - (4) Presentation and communication skills to transmit research results domestically and internationally, in order to contribute to the enlightenment and development of scientific culture.
2. The doctoral program of the Graduate School of Biological Science aims to develop those who have excellent research and development (R&D) ability and the creativity to conduct independent research activities, ability to add novel knowledge to the current understanding of the academic field, thereby contributing to the progress of culture, and ability to play a central role in educational/research institutions in Japan and abroad. The award of 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 for each major, had their doctoral dissertation recognized as having reached the standard required, passed a consequent examination; and an examination of general academic ability.

A graduating student will acquire the following:

- (1) A highly sophisticated ability to comprehensively understand cutting-edge research in the life sciences and other specialist fields; and to solve the problems in the life science fields independently based on this understanding.
- (2) Ability to become an independent researcher, in possession of highly sophisticated research skills in the life sciences, who can contribute to solving problems in life science-related fields, in cooperation with other researchers and technicians in broader fields.
- (3) The ability to create original solutions for problems in life science-related fields, based on flexible thinking, deep insights, a highly sophisticated level of expertise in life sciences and cutting-edge knowledge in the life sciences and other fields.
- (4) Advanced English presentation and communication skills to transmit research results internationally with an international perspective, in order to contribute to the development of novel science and technology and of scientific culture.

Curriculum Policy

1. In the master's program, the curriculum including “specialist subject”, “courses of liberal arts”, and “advanced research”, is organized so as to foster human resources who can contribute to society with advanced knowledge and the ability to carry out high level research and development; with broad academic knowledge, a deeper understanding of ethics, and an international perspective on life sciences.
 - (1) The specialist subject aim to let students systematically understand recent advances in biological sciences, and thus contain specific advanced lecture in each research area in order to acquire advanced specialist knowledge, and also common lectures and seminars in order to logically understand subjects in various fields of biological sciences.
 - (2) Liberal arts courses contain not only lectures that support the attainment of a broad academic knowledge of the field of study, but also; those that support the attainment of better communication skills, a deeper understanding of ethics, and a greater sense of global literacies, for students to attain broad unbiased perspective.
 - (3) The advanced research helps students acquire advanced technology through independent research activities and discussions with supervisors, improve their research and development ability, and cultivate the ability to discover, clarify and solve the problems in the field with a broad perspective by integrating the knowledge, insight and ethics acquired from lectures in the specialist subject and

the courses of liberal arts. In addition, the seminars help students acquire the ability to cultivate international communication skills, and to have an international perspective. This is accomplished by taking part in discussions and giving research presentations in the seminars; and giving presentations of research results at academic conferences at home and abroad. Such a curriculum can contribute to the enlightenment and spread of scientific culture from an international perspective.

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 curriculum is organized on the premise of adding new knowledge to the academic field and contributing to the progress of culture not only through research guidance but also courses in the liberal arts. As a result, this curriculum will help develop researchers who have excellent creativity in research and development will also be able to play a central role in domestic and foreign academic institutions.
 - (1) Research guidance helps students acquire the knowledge and experience necessary to conduct independent research through substantive discussions with supervisors. An independent researcher will, in addition to their own field, collaborate with researchers and technicians in other fields to enhance research and development capabilities. In addition, such a researcher will incorporate advanced knowledge, thereby cultivating the ability to creatively solve problems based on flexible thinking and insights gained. Furthermore, research guidance helps students acquire the ability to cultivate international communication skills, and to have an international perspective. This is accomplished by taking part in discussions and giving advanced research presentations in English in the seminars; and giving presentations at academic conferences - at home and abroad - in which research results are expressed accurately and effectively. This curriculum contributes to the development of both culture and science and technology.
 - (2) Courses in the liberal arts support students to attain the high degree of academic knowledge and practical ability to carry out research and development as independent researchers or highly skilled professionals, which contributes to society.

Admissions Policy

The Graduate School of Biological Science widely seeks, through a range of selection methods, those who match the following criteria;

1. In the master's program, students will discover and solve problems with the aim of elucidating the molecular mechanisms of organisms based on the basic knowledge and extensive education in the undergraduate course. Those who are highly motivated to research and aim to acquire advanced knowledge and research and development (R&D) skills necessary for research. The master's program seeks those who are willing to promote research in collaboration with diverse people.
2. In the doctoral program, students who are willing to develop independent and original research in the life science field based on the expertise and research and development (R & D) skills acquired up to master's program, and who are motivated to contribute to progress of science through integration with other fields and to the advancement of scientific culture.
3. The Graduate School of Biological Science widely seeks students who are motivated to become active in society; and who hold an international perspective.

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

(General entrance examination)

In the master's program, students who have basic knowledge and insight about life sciences (molecular and cellular biology, immunology, genetics, biochemistry), language skills (English translation, English composition, English reading) and those who have a strong motivation to conduct research. Candidates will be selected by examination of documents, written examination and interview. In the doctoral program, students who are willing to conduct original research based on their advanced knowledge and research and development (R & D) skills in the life sciences. Candidates will be selected by examination of documents and interview about specialist subject of each major, English, and their master's theses.

(Recommendation entrance examination)

In the master's program, students should have basic knowledge and insight about life sciences (molecular and cellular biology, immunology, genetics, biochemistry), language skills (English translation, English composition, English reading) and have a strong motivation to conduct research. Candidates will be selected by examination of

documents and interview.

(Special selection for working people)

In the doctoral program, candidates who are willing to conduct original research based on their specific experience in academic institutes or industrial companies, will be selected by an examination of documents and interview.

(Entrance examination for foreign students)

In the master's program, students who have acquired at foreign universities basic knowledge and insight about life sciences (molecular and cellular biology, immunology, genetics, biochemistry) and English skills, and who have strong motivation to conduct research, will be selected by examination of documents and interview. For the doctoral program, students who have acquired advanced knowledge and research and development (R & D) skills in the life sciences in the master's course of foreign universities or equivalent research institutions, and who have additionally strong motivation to conduct an original research, will be selected by examination of documents and interview about specialist subject of each major, English, and their master's theses.