

Graduate School of Science
Department of Chemistry

Diploma Policy

1. The master's program in the Department of Chemistry aims to train researchers and engineers having a high level of expertise and knowledge in their specialized field of chemistry. Successful candidates will have attended school for a specified period and acquired the necessary credits for the Department of Chemistry. 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 elucidate various phenomena in nature based on acquired expert knowledge of synthesis and properties of atoms, molecules, their assemblies and functional materials.
 - (2) The ability to deepen the area of specialized field by systematizing and developing the acquired expert knowledge.
 - (3) The ability to contribute to the development of a sustainable society by solving a range of problems by applying acquired expert knowledge and skills in "Chemistry".
 - (4) The ability to develop cultural knowledge, international perspective and communication skills to deal with related issues in the specialized field.
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 Chemistry, had their doctoral dissertation been 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) The ability to define issues and solve their problems through their own creative and outstanding way with acquired highly specialized knowledge and skills for research and development.
- (2) The ability to comprehend a wide range of social issues and to take a leadership for solving various problems in modern-society and for developing sustainable society.
- (3) The ability to create new breakthroughs and advances in the field of chemistry by collaborating with researchers and engineers in the world.

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 cover advanced specialist knowledge and experimental techniques for the students to develop their integrated abilities to recognize, analyze and address a broad range of issues in modern society, through Specialist Courses, Courses in the liberal arts, and Research Guidance.

- (1) In the Major Courses, the department offers interdisciplinary curricula consisting of

① molecular/molecular-assembly sciences, ② energy/environmental chemistry, ③ functional material/biomaterial chemistry, and ④ synthetic organic/organic reaction chemistry, crossing the major fields of physical, inorganic, analytical and organic chemistry 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. In the doctoral program, the department offers the curricula that helps the students to acquire the abilities to independently carry out original research in the field of chemistry based on the knowledge and skills learned at the master's program level, to actively conduct interdisciplinary and international researches, and to accurately present their research results through the publication of academic papers, 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 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.

Admissions Policy

Under the educational and research philosophies of the university, namely "Building a Better Future with Science." and "No Master, No Graduation"; the department of chemistry allows the entrance of the students those who match the following criteria through various types of entrance examination.

1. The master's degree program:

The person who is willing to discover issues and solve problems through research in their specialized field, based on basic knowledge and skills of chemistry acquired in the bachelor's degree program, and who intends to acquire the abilities to understand science deeply and the skills of research and development to contribute to build a comfortable and sustainable society.

2. The doctoral program:

The person who has scientific specialized knowledge and ability to communicate internationally, conducts creative research independently, and is willing to advance the chemistry.

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

(General entrance examination)

The department allows the entrance of the candidates who have the following abilities.

The master's degree program:

The person who has acquired specialized knowledge of chemistry, has abilities to think for solving the problems of issues with the knowledge, and has skills to communicate in English.

The department selects the candidates through an examination of documents submitted, written examination (physical chemistry, inorganic and analytical chemistry, organic chemistry), English scores submitted (TOEIC or TOEFL), an interview and so on.

The doctoral program:

The department selects the candidates through an examination of documents submitted, and an oral examination on their master's thesis.

(Recommendation entrance examination)

The master's degree program:

The department allows the entrance of the candidates who have specialized knowledge, communication skill in English, thinking and presentation abilities, and attitude to research proactively.

The department selects the candidates through an examination of documents submitted, an interview, and so on.

(An entrance examination for foreign students)

The department allows the entrance of the candidates who has already acquired basic knowledge and skills of chemistry in foreign countries.

The master's degree program:

The department selects the candidates through an examination of documents submitted, a written examination, an interview, and so on.

The doctoral program:

The department selects the candidates through an examination of documents submitted, an oral examination of their master's thesis, and so on.

(Special selection for working people)

The department allows the entrance of the candidates who has already acquired basic knowledge and skills of chemistry in research institutes or companies. The special selection examination is available only for the doctoral program.

The doctoral program:

The department selects the candidates through an examination of documents submitted, an oral examination of their master's thesis, and so on.