

## Graduate School of Science and Technology Department of Pure and Applied Chemistry

### Diploma Policy

1. The master's program in the Department of Pure and Applied Chemistry aims to train researchers or highly skilled professionals with an advanced level of expertise and knowledge of ethics. It also aims to create researchers who are highly professional and hold an international perspective. Successful candidates will have attended courses for a specified period and have acquired the necessary credits for the Department of Pure and Applied Chemistry. Those who have passed a final examination on their master's degree thesis will receive a master's degree (Master of Engineering).

A graduating student will acquire the following abilities:

- (1) An advanced expertise relating to the Department of Pure and Applied Chemistry.
  - (2) The expertise to conduct research in the Department of Pure and Applied Chemistry.
  - (3) The ability to think logically and critically based on the high level of expertise, research skills and insight acquired in the Department of Pure and Applied Chemistry; and to discover, analyze and solve problems.
  - (4) The ability to be active with an international perspective based on the high level of specialist knowledge, research skills and knowledge of liberal arts acquired in the Department of Pure and Applied Chemistry.
2. The doctoral program aims to train researchers who have excellent creativity in research and development; and play a central role in research and educational institutions. A doctoral degree (Doctor of Engineering) is accredited and awarded to those who have attended courses in the program for a specified period, who have acquired the necessary credits, 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 abilities:

- (1) A highly sophisticated expertise according to the specialist fields in the Department of Pure and Applied Chemistry.
- (2) The ability to conduct research activities independently as a researcher in the specialist fields of the Department of Pure and Applied Chemistry.
- (3) The ability to discover, analyze and solve issues based on flexible thinking, deep insight and the highly sophisticated level of expertise and ability to conduct research acquired in the Department of Pure and Applied Chemistry.
- (4) The ability to be active with an international perspective in fields requiring specialization based on the highly sophisticated level of expertise and research skills acquired in the Department of Pure and Applied Chemistry.

### Curriculum Policy

1. The aim is to promote research and development of advanced chemistry encompassing: energy, information, environment, and living things. Moreover, to develop science in harmony with the natural environment through gaining: a profound understanding of the field, a broad knowledge of context, flexible creativity, an in-depth appreciation of the liberal arts and superior awareness of ethics. The goal is to create personnel who can stand on their own as cutting-edge researchers and engineers in the field of pure and applied chemistry.

The curriculum is organized and implemented based on the following policies.

2. 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 department of pure and applied chemistry, through specialist courses, courses in the liberal arts, and research guidance for science and engineering majors.

- (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 purpose of attaining 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 the acquisition of the knowledge and experience necessary to conduct research through understanding of the literature and discussions with supervisors. Moreover, research guidance helps students to develop such skills as: the ability to communicate research; to problem-solve; and to foster researchers, or similar advanced professionals, with an international perspective both at home and abroad.

3. 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 not only through research guidance and the liberal arts, but also an education and research system that combines science and engineering

- (1) Research guidance helps students acquire the knowledge and experience necessary to conduct research through understanding of the literature and discussions with supervisors. Moreover, it helps students to develop such skills as: the ability to communicate research; to problem-solve; and to foster the ability of researchers, or similar advanced professionals, to become independent and active in the field, with an international perspective, both at home and abroad.
- (2) Courses in the liberal arts 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 research philosophy of the university, which is based on the meritocratic tradition; the university seeks, through a range of selection methods, those who match the following criteria;

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 aim is to acquire the necessary skills for those with the intent to discover and solve problems through research 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 willing to independently conduct creative research.
3. The university seeks those who are motivated to work with an international perspective in society, based on professional knowledge and education.

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

(General entrance examination)

The university program seeks candidates with the professional knowledge, English ability, thinking skills and communication skills 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 examination, qualifications / results of certified tests, and interview. In the doctoral program, candidates will be selected through an examination of documents submitted, written examination, qualifications / results of certified tests, and 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, qualifications / results of certified tests, and an oral examination of their master's thesis.