

## ◇ *International Program* ◇

A multidisciplinary international program will be offered for the three integrated courses in the Graduate School of Engineering, with all lessons conducted in English.

### ◇ *Educational Philosophy, Purpose and Goal*

#### 1) Educational Philosophy of Master's Course, Graduate School of Engineering

The basic philosophy of the program is to perpetuate and advance the intellectual heritage related to science and technology, while contributing to the development of society and human welfare by producing talented human resources who can play a leading role in the development and welfare of society.

#### 2) Educational Purpose of Master's Course, Graduate School of Engineering

In addition to possessing specialized knowledge, engineers in the 21st century are required to have high ethical standards and to consider things on a global scale. Furthermore, issues that cannot be resolved only by conventional technologies, such as environmental and energy issues and various challenges presented by an advanced information society, continue to arise.

Under these circumstances, the purpose of the Graduate School of Engineering is to produce global engineers who can acquire and apply highly specialized knowledge in the field of engineering, can identify challenges and use their knowledge to find a solution to tackle the challenges, can communicate in Japanese and English as needed for research and development, and can make a great contribution to the industrial world with practical skills.

#### 3) Educational Goal of Master's Course, Graduate School of Engineering

In order to produce highly specialized engineers who can make a great contribution to the industrial world with practical skills, it is necessary to develop several capabilities including broader points of view, specialized practical skills, communication skills, and global perspective. The Graduate School of Engineering establishes and implements an integrated education program with the goal of developing these capabilities.

## ◇ *Diploma Policy*

The Graduate School of Engineering recognizes that a student will have completed the Master's course and awards a Master of Engineering to a student who will be confirmed to have successfully acquired the skills of a highly specialized engineer as described below. It is based on completion of the required study credits and on screening of the academic study activities and research results in the Master's thesis examination and final examination.

- Ability to acquire and apply highly specialized knowledge in the field of engineering
- Ability to clarify challenges and use highly specialized knowledge to find a solution to tackle the challenges
- Ability to communicate in Japanese and English as needed for research and development

## ◇ *Curriculum Policy*

The Graduate School of Engineering designs and implements the curriculum to achieve the educational purpose (to produce talented individuals), based on the following policies.

### *Policy for Curriculum Development*

- Establish common compulsory subjects, course compulsory subjects (course core subjects), and elective subjects, in order to develop the skills outlined in the diploma policy.
- Establish common compulsory subjects and elective subjects, in order to develop the ability to communicate in Japanese and English.
- Establish course compulsory subjects and course core subjects, in order to develop highly specialized knowledge in the field of engineering and the ability to apply this knowledge.
- Establish compulsory subjects, in order to develop the ability to clarify challenges and use highly specialized knowledge to find a solution to tackle the challenges.
- Establish common compulsory subjects and elective subjects, in order to broaden perspective.
- Establish common compulsory subjects, in order to develop expertise in specialized areas.

### *Policy for enforcement of the curriculum*

- A research and study plan shall be prepared through the collaborative effort of the supervisors and vice-supervisors, with the student.
- A syllabus shall be outlined the purpose of the lectures, the lesson plans, the grading criteria, and the grading methods.
- Grades shall be awarded under the grading criteria.

## ◇ *Overview of Master's Course* ◇

The Graduate School of Engineering was reorganized in 2016 with three courses, in conjunction with the reorganization of the original six courses. The Graduate School of Engineering offers courses that integrate adjacent fields of study, by bringing them under a single course to bridge specialized fields. Each offers integrated studies that exceed those of the Bachelor's course, by developing educational programs that bridge different fields and provide knowledge on a wide range of relevant topics, specialized skills, communication skills, and a global perspective. The Graduate School produces global engineers who can acquire and apply highly specialized knowledge in the field of engineering, can identify challenges and use their highly specialized knowledge to find a solution to tackle the challenges, can communicate in Japanese and English as needed for research and development, and can make a great contribution to the industrial world with practical skills.

### **Graduate School of Engineering**

#### ○ **Environmental Systems Course**

The course integrates chemical and social environmental studies, with the aim of producing highly specialized engineers who are able to create functional materials and manufacturing processes that are compatible with nature and are environmentally friendly, and who can contribute to the development of sustainable technology, using chemical technologies to solve environmental problems related to the reduction of pollution, restoration of the environment, and effective use of energy and resources.

The course will produce highly creative human resources who can contribute to the sustainable development of science and technology, based on social needs. These needs include the development of chemical technology to assist with environmental issues, such as the reduction of pollution, restoration of the environment, and effective use of energy and resources, in addition to the development of technologies and policies for resolving problems facing local communities, such as social infrastructure, regional disasters and environmental preservation.

#### ○ **Energy and Electronics Course**

The course integrates the study of electricity and electronics, electronic materials, applied physics, and applied mathematics, with the aim of developing highly creative and specialized engineers who can contribute to sustainable social growth through energy-related science and technology from an international perspective.

Energy technologies are essential for supporting the infrastructure of an advanced information society. The course will produce human resources who can contribute to diverse industries and sectors, including industries related to electrical equipment, automobiles, and semiconductors, and information and communication technologies, as engineers or researchers. This is based on social needs, such as the development of advanced technologies including low-carbon energy and smart energy systems.

### ○ **Mechanical Systems and Informatics Course**

The course integrates mechanics, robotics, and informatics studies. The course aims to produce highly specialized engineers in the fields of design and processing, measurement and control, and information technology, to support technology for making products that improve human quality of life and use resources in an environmentally friendly way to support a sustainable society. The course will produce highly creative human resources who can contribute to the sustainable development of science and technology, based on social needs, such as multifunctional and intelligent products, and the development of advanced technologies for human society and environmental control, and an advanced information society.