

## Faculties & Departments

# Faculty of Engineering

## Department of Mechanical Engineering

Fostering the development of specialists in the area of manufacturing to help make daily life more pleasant and convenient.



Automobiles, aircraft, trains, ships and various other forms of machinery make life comfortable and more convenient. The Department of Mechanical Engineering offers courses to help students systematically learn practical expertise and design technology necessary to manufacture such machinery. Students are also encouraged to learn the basics of creative manufacturing in the fields of robotics and mechatronics, which are essential for the development of intelligent robots which will play an important role as human partners and provide support needed in today's aging society with its declining birth rate. The department strives to develop engineers with practical expertise, skills and techniques who are capable of playing active roles in a wide range of industrial fields.

## Department of Information and Computer Science

Fostering the development of IT professionals to support information oriented society.



The Department of Information and Computer Science offers curricula to develop IT professionals capable of responding to the rapid progress of advanced information oriented society. The department's four-year programs help students to learn a wide range of technology, including the fundamentals of programming, system development, information and communication technology, digital media processing (e.g., images and sound) and the development of smartphone and IC card services. The department also offers course subjects designed to prepare students for national licensing examinations that prove their technical competence as system engineers, such as the Information Technology Passport Examination and the Fundamental Information Technology Engineer Examination. The focus of the department is on the development of engineers capable of designing new mechanisms for information services as well as active roles in the fields of software and hardware, thereby contributing to the creating of an active and easy society.

## Department of Electrical and Electronic Engineering

Fostering the development of engineers capable of promoting new energy sources and design of cutting-edge electronic equipment.



Today's advanced society is supported by electrical energy and electronic equipment, which are in turn supported by the academic disciplines of electrical and electronic engineering. Electrical engineering, which deals with electricity as a form of energy indispensable to supporting social infrastructure, covers areas such as power generation systems and harmonization with the environment. Electronic engineering is applied to electrical, electronic and information appliances (VR, AI, IoT, etc.), automobiles, robots, medical equipment and other types of machinery essential in today's world, and is used to promote affluence and safety in our lives everyday. This department fosters the development of electrical and electronic engineers who are capable of contributing to all aspects of life.

## Department of Architecture

Fostering the development of architectural designers and engineers with expertise unique to northern regions.



The Department of Architecture provides students with an opportunity to learn about a wide range of fields, encouraging the necessary creativity and ability to design architectural and urban spaces, as well as fostering techniques related to architectural environments and the equipment necessary to create healthy, pleasant living environments. It also motivates students to develop design skills and expertise to use when building structures, and fosters overall technical construction-related abilities to ensure the structural safety, durability and reliability of architectural constructions. The department develops professionals capable of meeting the needs of the times by training them with ongoing rapid specialization in the field of architecture and creating an environmentally aware society that considers both local and global environments based on the fundamental knowledge of architectural science that students obtain, including issues unique to cold snowy regions.

## Department of Civil and Environmental Engineering

Fostering the development of environmental designers and civil engineers with the ability to balance the harmony between nature and urban living.



The Department of Civil and Environmental Engineering offers specialized curricula relating to 1) the preservation and restoration of the natural environment with the biodiversity needed to maintain human life, and 2) the development of urban infrastructure and amenities for pleasant and convenient living. Students are encouraged to develop a basic knowledge of the global environment, ecology and civil engineering before acquiring expertise and specialized skills through experiments, practical training and fieldwork to become professionals capable of producing an urban basis for life, society and the environment in the 21st century.