

# Faculty of Engineering Science

The Faculty of Engineering Science is striving to train talented students and researchers with expertise backed by “reason” and a high-level of ethics. Students in this faculty can look at a range of interdisciplinary fields, making them able to contribute not only to Japan as a whole, but also to the region with confidence. In the first and second years students receive a thorough education in engineering, and in the third and fourth years students take that knowledge and gain a fuller understanding of what it means as they apply it in while taking a more active role in their desired field. During their undergraduate education students can discover questions on their own, gain a broad perspective regarding issues in fields previously unknown to them, and gain the ability to problem solve and be flexible.

## Faculty Organization Department of Life Science

Training researchers and engineers to tackle various problems in the life sciences field.

### ● Life Sciences Course

Students gain a clear understanding of various biological phenomena that make up life from the molecular, cellular, or bodily level, and to the group organism level.

## Department of Materials Science

This department trains researchers and engineers who will deal with cutting-edge, functional materials and chemical processes.

### ● Applied Chemistry Course

Students will study a broad spectrum of specialized chemical fields from chemical engineering that deals with organic and inorganic materials and energy, to bioprocesses.

### ● Material Science and Engineering Course

A wide range of fields are studied starting with the fundamental sciences focusing on solid-state physics, solid-state chemistry, metallic materials, science and engineering, and ceramic materials.



## Department of Mathematical Science and Electrical-Electronic-Computer Engineering

These departments train talented students in multi-faceted approaches in order to become leaders in fields ranging from mathematics and physics to electrical and electronic telecommunications.

### ● Mathematical Science Course

Students study mathematical and computer sciences with a focus on algebra, geometry, mathematical analysis, discrete mathematics, quantum mechanics and electromagnetics.

### ● Electrical and Electronic Engineering Course

Students learn about the fundamental technology that supports electric, electronic, information systems, and communications engineering. Students may focus on electric power engineering, semiconductor device engineering, measurement electronics, and electric mechanical science.

### ● Human-Centered Computing Course

Students will learn advanced applied technology founded in computer science, with a focus on human& computer interaction, welfare communication engineering, image analysis, and information communications and networks.

## Department of Systems Design Engineering

This department trains practical engineers capable of creating new things.

### ● Mechanical Engineering Course

Students study the mechanical engineering process and theories that form the foundation of every industry. The course focuses on material mechanics, fluid dynamics, thermodynamics, machine mechanics, control engineering, nanotechnology, medical engineering, biomechanics, and robotics.

### ● Creative Manufacturing Engineering Course

Students learn about a wide range of engineering disciplines with a focus on design engineering, creative production science, electrical and electronic circuits, system control engineering, rocketry, and a practical research project.

### ● Civil and Environmental Engineering Course

Students learn the technology to create and preserve a safe, secure and comfortable local environment with a focus on structural design studies, construction material science, ground disaster prevention engineering, and environmental hydraulics.

## Distance Learning

Akita University Faculty of Engineering is the only national university that offers “public distance learning courses.” Since the first class was held in 1948, over 1700 graduates have been produced while maintaining the background of educational tradition and history. In order to gain general background knowledge in scientific technology, a general scientific technology course and courses to study the basics and specifics in resources, materials or electrics and electronics are offered.