

Faculty of Engineering Science

The Faculty of Engineering Science consists of four departments and eight courses. Students acquire fundamental knowledge of science and engineering, study specialty fields and explore aspects of science, technology and engineering from an environmentally friendly perspective. Students learn how to apply digital technology to their respective fields of expertise in order to stay across the significant advances in data science technology in recent years. They also acquire the ability to explore issues independently on their own and take a broad and flexible approach to finding solutions to new challenges. In addition, we actively support and encourage students to study abroad and to broaden their global perspectives.

Faculty Organization

Department of Life Science

Based on chemistry and biology, we train students to become researchers and engineers who take on the challenge of solving problems in the life science fields, such as medicine, food, and the environment.

● Life Science Course

Students study synthetic organic chemistry, natural products chemistry, molecular biology, structural biology, biotechnology, cell biology, developmental biology, physiology, bioinformatics, and other specialty fields to shed light on biological phenomena.

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 study a broad spectrum of specialized chemical fields, such as inorganic materials, organic materials, energy-related chemical engineering, and bioprocessing.

● Materials Science and Engineering Course

Students will study a wide range of fields starting with the fundamental sciences that focus on solid-state physics, solid-state chemistry, metallic materials, and ceramic materials.



Applied Chemistry Course



Civil and Environmental Engineering Course

Department of Mathematical Science and Electrical-Electronic-Computer Engineering

We provide the education that enables students to become leading researchers and engineers in the field of mathematical science, electrical and electronics, and information and communication.

● Mathematical Science Course

Students learn a wide range of mathematical science, covering mathematics (e.g. algebra, geometry, analysis), theoretical physics (e.g. quantum mechanics), computer science including AI and its applications to environmental science including data science.

● Electrical and Electronic Engineering Course

Students study basic subjects such as electromagnetics and electrical circuits, and they can select subjects from a wide range of specialized fields such as electrical energy, optical and electronic devices, materials, information and communication, measurement and control systems, according to their own interests.

● Human-Centered Computing Course

Students will learn applied computer science and engineering, with a focus on human-computer interaction, health information engineering, image analysis, and information communications and networks.

Department of Systems Design Engineering

We develop practical engineers who can develop and maintain new manufacturing and social systems.

● Mechanical Engineering Course

Mechanical engineering is the basis of manufacturing industries. Our course offers to students the fundamentals of mechanical engineering through modules such as Materials Engineering, Mechanical Engineering & Design, Heat & Flow and Dynamics & Control. We also expose our students to diverse modules of advanced engineering such as Medical Bioengineering, Robotics, Hydraulic machinery and Aircraft energy system.

● Civil and Environmental Engineering Course

Students learn about the technology needed to create and preserve a safe, secure and comfortable local environment with a focus on structural mechanics, construction material science, geotechnical engineering, and environmental hydraulics.

Correspondence Education Program

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 2,000 graduates have taken the course, upholding the course’s 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.