Faculty of Engineering Science

Data-driven science, which gains new insights based on Big Data, is positioned as the fourth scientific paradigm after experimental science, theoretical science, and computational science. It will play an increasingly important role in the future. In the Faculty of Engineering Science, students study the basics of each specialized field and acquire the ability to effectively utilize AI and data science, which form the basis of data-driven science. In addition, the Faculty offers an undergraduate education that enables students to recognize issues for themselves and to tackle previously unknown issues from a broad perspective. At the same time, we actively support students in their study abroad and promote a broader global outlook.

Faculty Organization

Department of Life Science

Based on biology and chemistry, 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

Our department provides teaching in solving the questions of life phenomena at the cellular level, individual level and organism group level.

Department of Materials Science

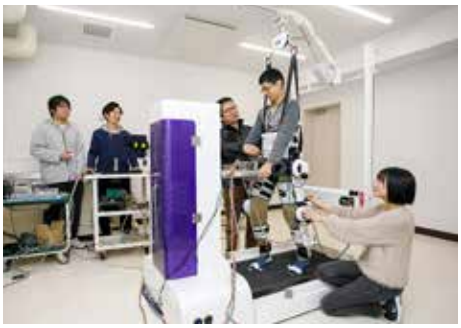
This department trains researchers and engineers who will deal with cutting-edge, functional materials and chemical processes.

● Applied Chemistry Course

Students study a broad spectrum of specialized chemical fields from chemical engineering, related to inorganic materials, organic materials, and energy through to 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.



Mechanical Engineering Course

Mathematical Science Course

Department of Mathematical Science and Electrical-Electronic-Computer Engineering

We train students to be a variety of researchers and engineers who will lead each field of mathematics and physics, electrical and electronics, information and communication.

● Mathematical Science Course

Students learn a wide range of mathematical science which covers mathematics (algebra, geometry, analysis, database science), theoretical physics (quantum mechanics), and computer science including AI.

● 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 design our courses to foster practical engineers who can innovate new designs based on advanced concepts.

● 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 1900 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.