Educational and Research Organizations

Faculty of Science and Engineering

Departments	Educational and Learning Objectives	Content
Department of Engineering	[Overall] The Department of Engineering is responsible for the education of specialized engineering that is connected directly to industrial applications, for example, architecture, civil engineering, mechanical engineering, robotics, aerospace engineering, electric engineering, electronics, communication engineering, and so on. The word, "engineering" implies creativity, the so-called new trend of "Monozukuri," which will be required in the fields of manufacturing or construction in the new era. The department nurtures personnel who understand the industrial structure of the regional community, including Hokkaido; the characteristics of the nature and urban environment; the principles and properties of production activities, etc.; and who have developed their abilities for applying and utilizing their knowledge of their surrounding society from an engineering standpoint. The Department of Engineering have not only the daytime course but also the evening course that holds classes mainly in the evening.	Department of Engineering provides fundamental knowledge of natural science, engineering, and informatics in core curriculum for one year and a half after the entrance. At the beginning of the second semester in second grade, the students belong to each specialized course and acquire technical knowledge and practical skill. At the same time, liberal arts education fosters richness of humanity and ability to collaborate with others.
Daytime Courses	[Course of Architecture and Civil Engineering] This course provides practical education on the planning, design, and construction technology of architectural facilities or the larger structures, such as roads, bridge, parks, dams, etc. The course nurtures personnel who can contribute to the production of a safe and comfortable environment with a broad perspective, encompassing spiritual enrichment through nature.	[Course of Architecture and Civil Engineering] This course mainly provides systematic education in the field of architecture and civil engineering. In the first half of the second semester in the second grade, the students will study introductive subjects and core curriculums about architecture and civil engineering. After the second half of the second semester in the second grade, the curriculum of the course is divided into an architecture track and a civil engineering track. The architecture track is mainly organized by subjects for eligibility requirements, such as architectural planning and design, building construction and material, etc. The civil engineering track is organized by subjects about specialized technology regarding planning, design, and construction of civil engineering structures.
	[Course of Robotics and Mechanical Engineering] This course provides a practical education about mechanical engineering and robotics and nurtures personnel who acquire extensive fundamental knowledge, advanced practical skills, and the creativity and strength to confront various kinds of problems by utilizing their communication abilities.	[Course of Robotics and Mechanical Engineering] This course provides a practical education to foster fundamental knowledge and advanced practical skills about the environment and energy, mechanical systems, and robotics. The course is organized by subject groups, such as the dynamical system group that is the basis of mechanical engineering, the system integration group connecting with robotics, and the engineering design group related to system design and manufacturing.
	[Course of Aerospace Engineering] Aerospace Engineering is a comprehensive engineering course that utilizes and consolidates a variety of components and elements of related technologies and builds a highly sophisticated system. This course provides practical education in a wide range of elemental and system technologies and nurtures human resources capable of systematic thinking for sophisticated manufacturing in a broad range of fields.	[Course of Aerospace Engineering] This course provides integrated education in the field of aerospace engineering to nurture a systematic way of thinking and a specialized education emphasizing fundamental technologies of sophisticated system. The course is organized by most of the fundamental disciplines of aerospace engineering, which is an integration of various elements and technologies, and an intensive study is offered to foster knowledge and practical skills.
	[Course of Electrical and Electronic Engineering] This course provides fundamental knowledge and skills in areas such as electronic devices, electronic technologies, and electrical energy generation, supply and utilization. The course involves specialized capability with robots and other control systems, etc. It nurtures human resources capable of playing an active role in the field of electrical and electronic engineering from a broad perspective.	[Course of Electrical and Electronic Engineering] This course is organized to provide specialized knowledge of electronic engineering, including electronic devices, electronic circuits, computer engineering, etc.; specialized knowledge of electrical engineering, including the generation and supply of electric energy, apparatus and systems for the utilization of electric energy, control of various systems, etc.; and specialized knowledge of information and communication, including signal processing, communication systems, quantum measurements, etc.
Evening Courses	[Course of Mechanical Engineering] This course provides education about mechanical engineering and related areas, such as robotics and aerospace engineering, and the course nurtures human resources capable of playing an active role in various fields of manufacturing from a broad perspective.	[Course of Mechanical Engineering] The base of this course is mechanical engineering, and its principal axis consists of subject groups such as dynamical systems, system integrations, and experiments. The curriculum of the course is systematically organized by mechanical engineering and its related areas, such as robotics, aerospace engineering, and electrical and electronic engineering.
	[Course of Electrical and Electronic Engineering] This course provides fundamental knowledge and skills in areas such as electronic devices, electronic technologies, and electric energy generation, supply and utilization. The course involves specialized capability with robots and other control systems, and etc. It nurtures human resources capable of playing an active role in the field of electrical and electronic engineering from a broad perspective.	[Course of Electrical and Electronic Engineering] This course is organized to provide specialized knowledge of electronic engineering, including electronic devices, electronic circuits, computer engineering, etc.; specialized knowledge of electrical engineering, including generation and the supply of electric energy, apparatus and systems for the utilization of electric energy, control of various systems, etc.; and specialized knowledge of information and communication, including signal processing, communication systems, quantum measurements, etc.