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Access to Kitami Institute of Technology



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INSTITUTE of TECHNOLOGY

> Energy technology / Advanced materials technology Global environmental technology Freeze prevention technology / Winter sports technology Advanced mechanical computing / Agriculture industry collaboration

2021/2022

To nurture people, develop technology, contribute to the community and work toward a better future

Kitami Institute of Technology

Kitami Institute of Technology aims at nurturing human resources equipped with solid expertise and broad perspectives as leaders in the coming generations.

Kitami Institute of Technology (KIT) is the northernmost national university in Japan and is located in Kitami City, the core city of industry and culture in the Okhotsk area in eastern Hokkaido. It is surrounded by a beautiful natural environment with four national parks including Shiretoko, which is a UNESCO World Heritage Site.

With its vision "to nurture people, develop technology, contribute to the community, and work toward a better future" under the philosophy of "Developing technology that harmonizes with nature", KIT's mission, in a time of rapid progress of science and technology becoming more and more advanced and complicated, is not only to provide basic skills and knowledge on specialized fields, but to train the ability to be able to deal flexibly with interdisciplinary fields and newly developed areas.

This university has produced more than 19,000 graduates since its opening who contribute as specialists in various industries in companies and government offices all over Japan and abroad. However, the social situation in recent years has undergone rapid change due to the development of ICT technology. The challenges our world is facing are extremely diversified and complex. In order to respond flexibly to these tasks and to be able to solve them, it is necessary to have human resources with a broad perspective not focusing only on one specific field of expertise, who are able to apply their knowledge, while maintaining reliable basic academic skills and expertise. KIT aims to produce such human resources applying its long experience in education and research while at the same time making necessary changes to be able to face new challenges. For this reason, in April 2017, KIT reformed its system and merged its previously six departments into two interdisciplinary schools. In addition, we offer a variety of active learning subjects and provide a curriculum to refine the ability to solve problems.

We hope to welcome you at Kitami Institute of Technology, where you can fulfill your dreams in a calm environment full of nature and a high-quality learning environment. Let's build a new path for you and the next generations together!

President. Kitami Institute of Technology Soichiro Suzuki



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A two-school system to broaden future options

KIT has crafted a novel curriculum with wider options to choose from, transcending the conventional divisions of disciplines. This makes it possible for students to learn based on multifaceted ideas as well as subjects tailored to their needs, thereby allowing KIT to foster engineers with excellent basic academic ability, as well as broader perspectives and specializations.

► Lectures fusing various fields for students pursuing varied interests ► Active learning to brush up communication skills

Students aspiring to enter diverse specialized fields in each school
Fieldwork-based lectures to facilitate proactive learning

Solving problems in Japan and elsewhere in the world, in such areas as energy and global warming, and using the results to contribute to the local region

School of Earth, Energy and Environmental Engineering

Solving global warming is now an urgent and essential task. Fostering engineers who can take on the challenge is important, but an education that brings together various areas of specialization is necessary to address this problem effectively. This school

promotes world-class yet unique research on applied energy environment protection and disaster prevention and advanced materials from a fresh perspective through comprehensive approaches.

Supporting regional industrial prosperity and solving regional problems as a technological university in Hokkaido's primary industry area - to benefit the world. School of Regional Innovation and Social Design Engineering

The school capitalizes on the strengths of KIT as the sole technological university in the Okhotsk region, home to the primary industry, as the world goes through drastic changes. It undertakes unique projects across the Okhotsk region as a model region to



Developing human resources with broader perspectives and specializations

- cultivate students capable of identifying problems from an engineering perspective, earnestly approaching problem-solving, and proactively contributing to the region with what they have learned.

School of Earth, **Energy** and Environmental Engineering

Course Programs:

Applied Energy

Environment Protection and Disaster Prevention

Advanced Materials

Today solving global environmental problems is an indispensable task in various industrial fields in various industrial fields in human society.

Being able to deal with such tasks requires the training of engineers who can act on their own initiative. The traditional vertical division in educational research organizations in each specialized field makes it difficult to adequately deal with the tasks and solve issues related to the global environment. At this school the three fields of energy, environment protection and disaster prevention, and advanced materials are combined to promote characteristic research from a new angle which is globally applicable through comprehensive efforts of cooperating faculty members in these fields. In addition, by teaching students to acquire knowledge, skills and technology that can contribute to solving global environmental problems from various aspects centered on the above three fields, the school aims to train students who can independently discover the process from "excavation" to "solution" of the tasks and who can solve not only national issues, but also global issues in the fields of energy, resources, global environment etc.

Applied Energy Course Program

In this course, students gain a comprehensive understanding of energy engineering, which is closely related to machinery, electrics/electronics and chemistry, with topics ranging from gas hydrates, renewable energy and decentralized energy and energy-saving systems.

Faculty Interview

Continue taking on challenges despite setbacks. Doing so will surely lead to new discoveries and forge a new future for you.

Mayumi Takeyama Professor

OProfile/Graduated from the Department of Electronic Engineering, Faculty of Engineering, Kitami Institute of Technology before obtaining a doctoral degree in engineering from Hokkaido University. Engaged in a wide range of research areas such as three-dimensional integrated circuits, next-generation supercomputers, a project to visualize specialty goods of the Okhotsk region and a plant factory in space.

Basic Thermodynamics

Basic Fluid Mechanics

Basic Chemical Energy

Mechanics of Materials I

Electromagnetics

Fourier Analysis

Design and Drawing



Curriculum

Lecture

Integrated Engineering for Applied Energy I Applied Thermodynamics Applied Fluid Mechanics Applied Chemical Energy Fundamentals of Power Circuit Electrical Energy Application Applied Power Circuit Dynamics of Machine Systems I Fundamentals of Energy Conversion Transfer of Thermal Energy Computer Programming Electronic Devices Power Electronics Energy and Environmental Engineering Experiments of Energy Engineering I

*The description refers to the 2020 academic year curriculum and is thus subject to change

Basic Thermodynamics

Students will learn about thermal energy conversion based on thermodynamics. This technology is applied to power generation and heat supply systems.



The Applied Energy Course has no equal in Japan, allowing students to comprehensively learn about electric, mechanical and chemical aspects of energy. In addition to essential subjects necessary for learning about electricity, including electric circuits, electromagnetism and electronic devices, this course includes basic lectures on machinery such as those involving heat and fluids. In addition, subjects dealing comprehensively with energy such as bioethanol, methane hydrate serve as a pillar of the curriculum. Along with expanded experiments and hands-on learning, students are encouraged to learn and think on their own. Human resources with electricity, machinery and chemistry know-how are in high demand by companies in various fields, including power, automobile, semiconductor, communications, civil engineering and construction. We support students taking on various challenges committed to accomplishing their goals

Experiments of Energy Engineering II Integrated Engineering for Applied Energy II Applied Energy Conversion Control Engineering High Speed Thermal Fluid Bio-measurement Engineering Electric Power System Engineering Basic Flectronics Electrical and Electronics Material Engineering Aeronautical Fluid Dynamics Engineering of Automobile Engine

Robotics Practical English Bachelor's Thesis System Control Theory **Biochemical Engineering** Introduction to Gas Hydrate Research Electricity Related Laws and Facility Maintenance Laboratory on Electrical Energy Design of Electric Machinery



Environment Protection and Disaster Prevention Course Program

This course's curriculum consists of basic subjects on earth environment, cold region nature and environmental engineering and disaster prevention.

Faculty Interview

Never regret not having done something you wanted to do. Setbacks are fine; continue moving forward with a sense of purpose.

Satoshi Yamashita Professor

OProfile: Graduated from the Department of Civil and Environmental Engineering, Faculty of Engineering, Kitami Institute of Technology, before obtaining a doctoral degree in engineering from Hokkaido University. Research interests include the deformation and strength properties of ground materials, earthquake-triggered liquefaction and evaluation of the stability of submarine ground containing methane hydrate.



Taking advantage of the favorable location of KIT, situated in nature-rich Hokkaido's Okhotsk region. students learn the basics in the environmental domain. In the practicum, they learn about how the Okhotsk area is tackling issues related to environmental protection and disaster prevention identify problems and work as a team to explore solutions. The campus is a place of self-formation as students deepen their specialized knowledge. To do this requires a broad perspective with wide interests. Initial goals may be vague and are subject to change. but that is fine. Do not be afraid of setbacks and take on challenges in whatever you are interested in. Doing so will bear fruit in your life.

Cu

ental Studies Bachelor's Thesis na I Surveying City Planning Integrated Study in Environment and Disaster Prevention Practical English Remote Sensing Introduction to Gas Hydrate Research Water Environmental Engineering Integrated Study in Environment and Disaster Prevention

neriments on Frwironment and Disaster Prevention Engineerin Hydraulics II Evneriments on Environment and Disaster Prevention Environment Structural Mechanics II Analytical Chemistry I Environmental Materials Exercise in Computer Aided Drawing for Disaster Prevention and Environmental Engineerin Meteorology Analytical Chemistry II Introduction to Ecology Cold Regions Rock Mechanics Geotechnical Engineering II Analyses for Geo-disasters

River Engineering Reinforced Concrete Structure Coastal Engineering Mathematical Methods for Planning GIS Practice for Environment and Disaster P Surveying Practice and Drafting Introduction to Ice Physics Water and Wastewater Treatment Engineer Hvdroloav Measurement Science in Environmental Analyse

Geo-environmental and Geo-disaster Prevention Engineeri Snow and Ice Disaster Prevention Engineerin Ice Covered Sea Engineering Experiments in Environmental Chemis Integrated Study of Career Advance Applied Ecological Engineering Earthquake Disaster-Mitigation Engineering Explosives Engineering

nental Materials Science I. I Advanced Materials Engineering Advanced Materials Engineering Experiments I. II Materials Physics I, II Inorganic Materials Science Analytical Chemistry I Organic Chemistry I Physical Chemistry I Practical English Bachelor's Thesis

Faculty Interview

No challenge, no success.

Tomoya Ohno Professor

powder technology and rechargeable batteries

Take the first step forward,

believing in eventual success.

OProfile: Graduated from the Graduate School of Science and

Technology at Shizuoka University, majoring in Materials

Science. Primary research interests include ceramic materials,

Chemistry for Biomaterials Separation Chemistry Superconducting Engineering Physics of Semiconductor Devices Materials Surface Chemistry Applied Physics Process Engineering Thin Film Materials Engineering Polymer Materials Metallic Materials

Optical Materials Modern Ceramic Engineering Organic Synthesis Polymer Synthesis Analytical Chemistry II Organic Chemistry II III Physical Chemistry II

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Environmental

Material Science 1

In this course, students learn about the latest knowledge and challenges in key areas (energy-saving materials, environmental analyses, environmental catalysis and solar cells, etc.) subject to research and development as essential science and technology to solve problems related to the earth environment



Lecture

Methane hydrate, often referred to as "fiery ice" and regarded as a future energy source, stores a massive volume of global warming gases. Students learn their properties and importance from the viewpoints of environmental studies and environmental earth science

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Introduction to Gas Hydrate Research



Students learn through lectures and practical work about the basic properties and phenomena of soil essential to mitigate or prevent disasters involving the ground, such as slope collapse due to

Geotechnical Engineering I

torrential rain and melted snow, earthquake-triggered liquefaction and frost heave unique to cold regions



	Environmental Earth Sci Glaciology Introduction to Environme
rriculum	Geotechnical Engineerin Hydraulics I Structural Mechanics I
	City Dianning

Advanced Materials Course Program

It is a top-priority task for humans to develop useful materials and technologies to solve problems related to the global environment. Students in this course learn necessary basic and applied sciences to take on this task and acquire knowledge and experimental techniques to develop materials to save energy and protect the environment as well as eco-friendly synthesis processes.

> In the Advanced Materials Course Program, students acquire knowledge necessary for designing, generating and analyzing materials, which are the most basic element of excellent equipment and machinery indispensable for today's convenient lifestyle and for providing an environment for a stable supply of large amounts of energy. There are still uncharted territories in materials development. One characteristic of this course is learning how to approach unresolved questions. Many students who have taken this course have secured jobs in the automobile, electronic machinery and other manufacturing sectors after graduation, supporting the development of Japan's key industries. Faculty members work closely with students, who are encouraged to seek assistance and guidance from their professors. Tackling advanced research matters in an easygoing atmosphere is ideal. Make your time at KIT one of the most enjoyable periods of your life.

Structural Analysis of Inorganic Materials Structural Analysis of Organic Compounds Introduction to Manufacturing Processe

Seminar in Materials Science Seminar English for Science and Technology Topics in Materials Science I, II



Advanced Materials Engineering

Students gain knowledge about the research frontier of nanotechnology, which holds promise of a better future for humans, in addition to synthesis processes and properties of nanomaterials and eco-friendly materials.





Intelligent Machines and Biomechanics Course Program

In addition to dynamics, a basis of mechanical engineering, this program offers applied courses on control engineering, medical engineering, robotics and other areas. It aims at cultivating students capable of identifying and solving problems facing a certain region or society and fostering engineers with broad but specialized perspectives and application skills

Faculty Interview

Strive to become a superb engineering talent capable of comprehending and accomplishing various things.

Ullah Sharif Professor

OProfile: Obtained a doctoral degree in mechanical engineering from the Graduate School of Science and Engineering, Kansai University. Conducting research on 3D printing, Industry 4.0, precision processing, development of sustainable products, design theory and the decision-making process.

Curriculum

Lecture

Mechanics of Materials I Dynamics of Machine Systems I Basic Thermodynamics Basic Fluid Mechanics Control Engineering Mechanical Design I Computer Programming I Statistical Processing Method Fourier Analysis Bio-measurement Engineering Practical English	Comprehensive Engineerin Intelligent Machines and B Mechanics of Materials II Dynamics of Machine Syst Basic Electric Engineering Biomaterials Computer Programming II Introduction to Bioengineer Mechanical Design II Introduction to Computer-J Computer Aided Engineerin
xperiments of Intelligent Machines and Biomechanics I	Medical Engineering

The description refers to the 2020 academic year curriculum and is thus subject to chance

CAE (Computer-aided engineering)

Students learn about CAE technology essential for manufacturing today. This course consists of basic lectures on CAE as well as practical exercises using analysis software actually used in the industry.



nge progressing and the social structure and situation changing drastical nnical university located in the Okhotsk region of Hokkaido the primary industries, the school aims to challenge ns from an engineering point of view choosing the Okhotsk region as the model area flects these characteristic efforts in its educational setting and concretely s the process from "excavation" to "so " of the problems from the school will have le lving processes and acquired skills to not only play an active role in the Okhotsk reg

Course Programs:

or Hokkaido, but also throughout Japan and the

Intelligent Machines and Biomechanics

Information Design and Communication

Civil Infrastructure

Biotechnology and Food Chemistry

School of Regional Innovation and Socia **Design Engineering**

School of Regional Innovation and Social Design Engineering



This course nurtures students' basic academic abilities in mechanics and information-related domains as well as matters related to the living body through such subjects as material mechanics, mechanical dynamics, manufacturing engineering, bionics medical engineering robotics computer science and smart agriculture. Engineers capable of both comprehending and succeeding at challenges are needed today. In this program, students will acquire superb engineering capabilities by learning about artificial intelligence and robot technologies, among others, toward becoming specialists in various fields. Campus life offers you opportunities to take on various challenges. It is my wish to see students grow into adults who can come up with flexible and creative ideas, while brushing up skills through not only engineering studies, but also club activities, part-time work, reading, mastering a foreign language and studying abroad.

mprehensive Engineering o elligent Machines and Biom echanics of Materials II namics of Machine Systems II

troduction to Bioenaineerina

roduction to Computer-Aided Desig omputer Aided Engineering

Robotics Artificial Intelligence Experiments of Intelligent Machines and Biomechanics I Comprehensive Engineering on Intelligent Machines and Biomechanics II

Biomolecular Engineering Basics of Image Processing Essential English Expressions in Scientific Research and Engineering Creative Engineering Computational Mechanics Theory of Elasticity and Plasticity Practice of Accurate Processing

Introduction to Engineering Materials Introduction to Manufacturing Processes Circuit Engineering for Control Introduction to Computer-Aided Manufacturing Mechatronics Agricultural Machine Engineering Laboratory Seminar Applied Thermodynamic Applied Fluid Mechanics Production and Quality Control Engineering Bachelor's Thesis Topics in Intelligent Machines and Biomechanics

Mechatronics

Students learn the basics of actuators, sensors and power transmission. Students are grouped into small teams, and each will make an autonomous mobile robot. Then they compete in a contest with their robot. which is designed to have themdevelop engineering skills



Information Design and Communication Course Program

This course is designed to train students to become engineers versed in information and communication technologies by focusing on principles and basics of both software and hardware

Faculty Interview

You have only one life to live. There are things that you can experience only at this very moment. I recommend finding something you can devote yourself to during campus life.

Takeshi Kawamura Associate Professor

OProfile: Completed the former period of the doctoral program in precision engineering at the Graduate School of Engineering. Hokkaido University. Later, obtained a doctoral degree in engineering. Research interests include control engineering and vehicle guidance in snowstorms using near-field communication



In this course, students learn about both hardware and software involved in computer science and information and communication, which are indispensable in modern society. Information engineers are in short supply in various sectors. To respond to such demand, this course offers a curriculum with broad subjects from the basics to advanced fields, such as artificial intelligence. These days, computers, robots and automobiles are connected to networks using information and communication technologies. It is essential for students entering these fields to systematically learn basic subjects from electromagnetics and electromagnetic wave engineering to applied subjects such as information networks, wireless communication engineering and advanced optical communication engineering. KIT offers an easygoing atmosphere for learning. Students are advised to find something they can be proud of after graduation while nurturing mind and body at KIT.

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Civil Infrastructure Course Program

The course program aims at nurturing professional engineers who can engage in the design, construction, maintenance and management of social infrastructure for creating the future of the region such as "lifeline systems in cold regions," "an advanced information and communications society" and "infrastructure facilities suitable for the region" to cope with a chronically low birthrate and a rapidly aging society.

Faculty Interview

Be curious and accept diversity. Also, acquire a "thinking engine" by enhancing the power of perception.

Kiyoshi Takahashi Professor

OProfile: ompleted the latter period of a civil engineering doctorate at the Graduate School of Engineering, Hokkaido University. Research interests include urban and transportation planning.

Curriculum

Lecture

Java Programming I Java Programming II Data Structures and Algorithms Software-design Engineering Database Discrete Mathematics Introduction to Computers Computer Architecture Automata Artificial Intelligence I Artificial Intelligence II Decision Theory System Control Theory

Robotics Robot Infomatics Fundamental Signal Processing Digital Signal Processing Logic Circuits Probability and Mathematical Statistics Fundamentals of Flectrical Circuit Theory Design of LSI and Electronic Circuits Circuit Theory Electronic Measurement Optical Information Processing I Optical Information Processing II Speech Information Processing

Image Processing and Recognitior Mathematics for Information and Telec Basic Telecommunication Engineer Information Network Electromagnetics Electromagnetic Wave Engineeri Radio Transmission Engineering Wireless Communication Engineering Advanced Optical Communication Technolog Jananese Radio Laws Fourier Analysis Mathematics Seminar Mathematics Seminar II

Mathematics Seminar III Mathematical Cryptography Practical English Practical Engineering Practical Engineering II Practical Engineering III Tourism Management Engineering I Information Design and Communication Engineering I Information Design and Communication Engineering II Experiments of Information Design and Communication Engineering I Experiments of Information Design and Communication Engineering II Topics in Information Design and Communication Bachelor's Thesis

Regional and City Planning Fundamental Signal Processing Surveying Glaciology Force and Deformation in Structural Mechanics Construction Materials in Cold Regions Exercise in Computer Aided Drawing for Civil Infrastructures Cold Regions Soil Mechanics I Introduction to Hydraulics Traffic Infrastructure Engineering Practical English Geospatial Surveying Practice

through teamwork.

Experiments on Civil Infrastructure Engineering I, II Integrated Study in Okhotsk Region I, II Hvdraulic Engineering Cold Regions Soil Mechanics II Force and Energy Principles in Structural Mechanics Reinforced Concrete Structure Digital Communication Engineering GIS Practice for Civil Infrastructure Mathematical Methods for Planning Highway Environmental Engineering

Water Environmental Engineering Remote Sensing Numerical Calculation Ice Covered Sea Engineering Project Evaluation Engineering Prestressed Concrete and Hybrid Structure Structural Analysis Construction Technology Snow and Ice Disaster Prevention Engineerin River Engineering Harbor Engineering

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Integrated Study in Okhotsk Region I, II

Students identify problems facing the Okhotsk region through

classes by guest lecturers, their own investigations and

brainstorming sessions and by finding effective solutions

Construction Technology



Students engage in intensive learning, from the basics of programming using the Java object-orient programming language to practical programming technologies in GUI and video game development

Java Programming I-II, Software-design Engineering

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Wireless Communication Engineering

This lecture series aims at fostering students capable of performing well in the information and communication sector in the future by having them undertake a range of studies, from the basics to applications of wireless communication technologies, which are indispensable in the era of the Internet of Things, represented by the use of smartphones and tablets



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In this course, students learn about "lifelines in cold regions." "advanced information and communication society" and "designing, building, maintaining and managing infrastructure suitable for each region" in Japan's rapidly aging society with a chronically low birth rate. The aim is to foster students who aspire to be employed by construction and construction consulting firms or to become public servants engaged in the management of urban or regional civil infrastructure, by offering fundamental civil infrastructure classes on advanced technologies for managing construction processes. CAD. remote sensing and ICT technologies. The engineering domain is broad and deep, and all aspects are useful for enriching our lifestyle. I believe KIT can offer something that students want to aim at for the rest of their life. It is very much hoped that students will disseminate their ideas and technologies to the world through KIT.

Water and Wastewater Treatment Engineering Bridge Design and Drafting Integrated Study of Career Advancement Hvdroloav Explosives Engineering Infrastructure Management Applied Ecological Engineering Bachelor's Thesis

Curriculum

Students acquire basic knowledge about designing and constructing soil structures, which are important and fundamental aspects of civil infrastructure, and learn how to manage construction work using ICT construction and other technologies





Biotechnology and Food Chemistry Course Program

This course is designed to foster the ability as an engineer, along with benevolence and socializing skills, to come up ideas for utilization of materials unique to the Okhotsk region and to solve problems faced by the regional industry using biotechnology and food chemistry.

Faculty Interview

KIT encourages students, in the context of various human relationships, to foster qualities as an adult on the path to becoming professional engineers.

Masaaki Konishi Professor

OProfile: Completed the latter period of a doctoral program in applied biotechnology at the Graduate School of Engineering, Osaka University. Research interests include biochemical engineering and microbiology



This course covers a wide range of areas related to living bodies, food and environmental protection based on chemistry and chemical engineering, and is the sole course in KIT specialized in biotechnology Students take classes or conduct research on microbiology, which is associated with matter cycles, infectious diseases and bioindustry. They also take classes on Food and Nutritional Chemistry (which deals with the physiological functions of the digestive system, functions of nutrients and their relationships with lifestyle-related diseases) and Biochemical Engineering (which allows students to learn the basics of handling various devices related to biocatalysts). Upon graduation, the students are expected to do well at manufacturers related to biology, food, agriculture, environment and plants and facilities, engaging in research and development, manufacturing and sales of technologies. I hope students will become good human resources who can carve out a successful future by acquiring the ability to learn on their own after studying at KIT.

Regional Management Engineering Course Program

With specialized engineering programs at its base, this course allows students to acquire abilities needed to launch a company or projects, nurture talents to manage and administer them and develop sound engineering and technology know-how. The course is designed to foster "human resources that can serve as leaders in society while implementing practical values of engineering skills" in various professions such as engineers, researchers, entrepreneurs and corporate managers by using both engineering and management abilities.

Faculty Interview

Be an engineer who can think, judge and make proposals, while taking on challenges through teamwork.

Fumiko Uchijima Professor

OProfile: Completed a doctoral program, majoring in materials engineering, at the Graduate School of Engineering. Kitami Institute of Technology. Research interests include enhancement of the presence of universities through Industry-Academia-Government Collaboration by such measures as evaluation of university functions, improvement in public relations, and fostering and establishing suitability at universities.



Curriculum

Introduction to Biotechnology and Food Science Food Chemistry Introduction to Biotechnology and Food Science I Organic Chemistry I Organic Chemistry II Inorganic Chemistry Chemical Engineering Biological Chemistry Microbiology Molecular Biology Food Sanitary Food Engineering

Life Science Biotechnology and Food Engineering Experiments Scientific English for Biotechnology and Food Engineering I Biotechnology and Food Engineering Experiments I Scientific English for Biotechnology Bioinorganic Chemistry and Food Engineering I Exercise in Biotechnology and Food Engineering Practical English Exercise in Biotechnology and Food Engineering II Natural Products Chemistry Biochemical Engineering Bioorganic Chemistry Bioinformatics and Statistics Food Processing and Preservation Food and Nutritional Chemistry Food Macromolecules Chemistry Food Functional Chemistry

Biomaterials Agricultural Machine Engineering Sports Engineering Introduction of Presentation / Outreac Biomolecular Engineering Topics in Biotechnology and Food Engineering Topics in Biotechnology and Food Engineering II Fnolish Literature on Biotechnology and Food Engineering Presentation for Biotechnology and Food Engineering Bachelor's Thesis

Regional Management Engineering I Theory of Okhotsk Industry Introduction to Industry Academia-Government Collaboration Practical English Regional Management Engineering II Theory of Venture Business Business Administration

Engineering with Regional Support Tourism Management Engineering Introduction to Finance Special Lectures on Business Administration Science, Technology and Society Theory of Marketing Corporate Identity

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Microbiology

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Microorganisms are involved in infectious diseases, matter cycles on a global scale, biotechnology industry, etc. This course offers lectures on fundamental knowledge such as physiology, genetics and metabolism of such microorganisms and utilization techniques.



Food Engineering

Food is made of proteins, carbohydrates, lipids and other nutrients. This class deals with the physiological functions of the digestive system; the digestion, absorption and transportation in human body of nutrients; and nutrient metabolism and its relation to lifestyle-related diseases.



School of Earth, Energy and Environmental Engineering & School of Regional Innovation and Social Design Engineering

Acquire basic skills to contribute as an engineer Professional Engineering Skills Research skills to develop new technologies Design and production skills to implement new Combination of both skills Develop leadership skills through leveraging technology Management Skills ement skills to start and manage an organization tion skills to pose and solve problems Discussion and presentation skills Students may naturally find it difficult to shine only with technological abilities when aspiring to do well professionally in regional cities and prefectures or major enterprises after graduating from universities. They also need to be able to manage. In this course, students learn about and develop professional engineering expertise and management abilities. Students are encouraged to be able to demonstrate their abilities to the full extent, not in engineering knowledge alone.

Theory of Intellectual Property Introduction of Presentation / Outreach Tourism Management Engineering II Curling Support Engineering Graduation Project on Regional Management Engineering

Business Administration

It is not unusual for engineering school graduates to work in positions that involve running a business and managing employees. Students learn basic knowledge about and develop skills in corporate management and business administration.

Introduction to Industry-Academia-Government Collaboration

Industry-Academia-Government Collaboration is actively promoted as an initiative toward the betterment of society. Such collaboration involves a wide variety of activities among industry, academic organizations and local and/or national governments. Students learn about the fundamentals and basic knowledge of such cooperation.

Curriculum

Lecture

Humanities and Social Sciences Common Course

Engineering experts, who are engaged in research and development in a wide range of fields from infrastructure to systems directly connected to people's lives, are necessary for providing insights into social phenomena and superb skills to associate with other people, in addition to advanced knowledge and technologies.



KIT strives to foster well-rounded experts by comprehensively and systematically educating students on human beings, societies and languages.

Humanities and social sciences common course description

Liberal arts (1st year)

- Reading in English
- Spoken English
- Intensive English
- Second Foreign Language
- Physical Education
- Introductory Courses
- English Communication

Supplementary special subjects (1st, 2nd year)

- Health Science
- Science Int
- Science, Technology and Human Society
- Structure and Function of Language
- Japan and Regional Political Economy
- International Politics
- Science and Technology Seminar
- Health and Sports Science Seminar
- Modern Linguistics Seminar
- Industrial Economy Seminar
- International Relations Seminar
 World Literature
- Critical Theory
- History of Fine Arts
- Popular Culture
- Appreciation of Literary Works Seminar
- European Culture Seminar
- Art and Society Seminar
- Problems of Aesthetics Seminar

Main features of the curriculum

The main pillars of basic education are liberal arts and supplementary, special subjects. The liberal arts subjects aim at cultivating students' basic academic ability in broad areas. The lectures include intensive language education (selection of German or Chinese for the second language subject), subjects to acquire basic knowledge about humanities and instruction on physical education. Supplementary, special subjects are aimed at cultivating advanced thinking skills, which are required of industrial engineers and researchers.

Main Lectures Introduction

 Modern Linguistics Seminar

Appreciation of

- Introduction to Ethics
 Adventures of Aesthetics
- Intensive English
 Health and
- International Politics
 Sports Science Seminar
 - Spoken English II
- Literary Works Seminar
 Art and Society Seminar

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New type of engineer

The diversification of people's values and increasingly complicated global situations are among the challenges going forward. It is indispensable for engineers to have deep insights to comprehend what is happening now to contribute to society based on their acquired technologies. The liberal arts studies include two fields: humanities and social sciences. These studies are aimed at fostering a new type of engineer equipped with skills both in engineering and human sciences as well as superb thinking skills so that KIT can realize research and education in the human sciences in a systematic and comprehensive manner.

Research

In the humanities and social sciences, research in **two fields** are conducted.

Humanities

Ethics, linguistics, research on physical education and sports, modern art theories, English and American literature, studies of Shakespeare, German literature and European cultures.

Social sciences

Research on regional sports, economic principles and Russian law

Expectations for graduate school education

In the 4-year undergraduate program, students learn academic fundamentals and gain basic skills in each respective school. However, to respond to the complexity and sophistication of science and technology, knowledge and skills beyond those gained in undergraduate studies are necessary. To promote Japan as a science and technology-oriented nation, graduate schools are expected to send off many students trained at the graduate level, and who are internationally minded, creative and capable of problem-solving, into society.

Many activities and opportunities abroad

In the graduate school, students conduct their own research in their respective special field. They have an opportunity to present their research results at various scientific societies not only in Japan, but also abroad. In addition, students are given a chance to go abroad for research to do field studies, for example. The university provides financial assistance reimbursing some of the travel expenses in such occasions. Having many contacts with partners abroad is a major feature of the graduate school.

TA and RA systems: Simulated learning, as teacher or researcher

In our "Teaching Assistant (TA) System," excellent students enrolled in the graduate school have an opportunity to assist faculty members in teaching undergraduate students, such as in experiments, practical training or seminars, with remuneration from the university. Serving as a TA allows graduate students to refresh their basic knowledge while gaining leadership and teaching experience. The "Research Assistant (RA) System" allows excellent students enrolled in a doctoral program to participate and assist in research projects, with remuneration from the university. While striving to promote research activities and the enhancement of research-related systems, graduate students can refine and improve their skills and knowledge as young researchers. Both systems provide financial support for the betterment of students' campus life.

Admission Policy of Graduate School of Engineering

Located in the "Okhotsk region" that is blessed with a rich natural environment, Kitami Institute of Technology (KIT), with its motto "Developing Technology that Harmonizes with Nature," aims at promoting research that contributes to the development of regional and international communities. KIT strives to nurture human resources that can play an active role in society in the science and technology fields through its education and research. To achieve these goals, KIT Graduate School of Engineering seeks people with the qualities and abilities shown at right.





Graduate School

There is no end to research in science and technology. In the highly networked information society, the latest technologies and systems can be distributed in moments. In such a situation, the necessary knowledge and skills accordingly change day to day. Graduate school is a place where students can gain the latest knowledge and deepen their thoughts. Students gradually formulate and consolidate their future visions through master's and doctoral course studies.

Graduate school education and research

While emphasis in graduate education is placed on advanced classes and seminars using documents and articles in foreign languages, there is also a focus on developing presentation skills, with lessons conducted in small classes. Naturally, master's theses are important in fostering creativity and problem-solving skills, and students present their research outcomes at, for example, academic meetings or scientific societies. Companies also take notice of our human resource development, and we maintain an employment success rate of nearly 100%.

Master's Program

- 1 Students eager to contribute to society as specialized engineers.
- 2 Students willing to tackle problems diligently, to deeply examine and try to search for solutions tenaciously.
- 3 Students with a strong desire to promote research and acquire advanced scientific and technological skills, and who strive to achieve those goals.

Doctoral Program

- 1 Students eager to contribute to society as highly specialized engineers.
- 2 Students determined to tackle the challenge of pioneering new interdisciplinary and boundary areas and new disciplines.
- Students willing to cooperate in research and development at companies and able to challenge the setup of a joint venture.
- 4 Students with a rich sense of humanity, an international perspective and with a strong interest in international exchange and international contributions.

INTERNATIONAL EXCHANGE

Today's globalization and increasing cross-border exchange of human resources or products make it necessary for people to have an open mind and multifaceted ideas and approaches. KIT has established study-abroad and other exchange programs with its numerous partner institutions to provide students with an adequate environment not only to learn how to think out of the box and experience advanced research, but also develop an international way of thinking as a world citizen.

KI AMI CUKLING HALL

Experiencing advanced research. Developing an international way of thinking.



Adam Mickiewicz University (Peland) Cracow University of Technical University of Kosice (Slovak) Aschaffenburg University of Applied Sciences (Bermany) Reighahi University of Engineering (Bangladesh) Bangladesh University (Bangladesh) Bangladesh University (Bangladesh) Asian Institute of Technology (Bangladesh) Asian Institute of Technology (Tailiand) Asian Institute of Technology (Tailiand)
International partner institutions

クス

international partner institutions

International Exchange

At present, KIT has concluded international academic exchange agreements with 31 universities in 14 countries, and the International Center has established various types of exchange programs, such as study-abroad programs, language study tours during summer or winter vacations, and more. Currently, the total number of international students (undergraduate, graduate, exchange students) is around 100. There is a variety of international exchange events throughout the year, including cultural exchanges between international students, Japanese students, faculty and staff as well as citizens of Kitami City.

Study-Abroad Opportunities

Students enrolled at KIT have the opportunity to study abroad at one of our partner universities. Based on academic exchange agreements KIT has Germany 2 students with those partner institutions, students are exempt from paying tuition fees at the partner institution. In some cases, it is possible to transfer credits. There is much to gain from studying abroad, and we strongly encourage all students to give it a try and study at one of our partner institutions.

2018-2019 Poland 1 student

Peru 1 student

17students

20students

2018-2019

2019-2020

Opportunities for Giving Presentations Abroad

Graduate students in particular are	
provided with opportunities to give research	
presentations abroad, for example, at	
international conferences. Part of the travel	
expenses is covered by the university.	

Language Study Tours Many students at KIT have joined our

language study tours organized at universities in North America, Asia and Europe. Financial support is provided by "KIT Genki-Kai," a sponsoring society established by companies and citizens of Kitami City, alumni and others.



	Australia	University of Sydney	3 students	2 weeks
2018	China	Beijing University of Chemical Technology	4 students	1 week
	Germany	Aschaffenburg University of Applied Sciences	7 students	3 weeks
2019	Taiwan	China Medical University	4 students	4 weeks
	U.S.A.	Western Washington University	4 students	3 weeks
	Australia	University of Sydney	2 students	2 weeks
20,19	Korea	Gyeongsang National University	10 students	8 days
2020	Taiwan	National Chin-Yi University of Technology	4 students	5 days
2020	U.S.A.	Western Washington University	3 students	3 weeks

International Center & International Lounge

The International Center at Kitami Institute of Technology (KIT) was established in April 2004 with the aim of promoting the acceptance of international students and researchers as well as sending Japanese students abroad. It is committed to promoting exchange projects between KIT and universities abroad, gathering information as well as providing advice and support to international students in study, research and life in Japan. The International Lounge, which is located adjacent to the Center, is a place where students can come any time to meet friends, chat with other students or use the Internet to collect information or data.

Information for International Students

International students can enter KIT as regular full-time international students or short-term exchange students (limited to partner institutions)

1) Undergraduate entry requirements for international students

The applicant is a non-Japanese citizen.

 The applicant has taken the examination for Japanese University Admission for International Students (EJU) in "Japanese as a foreign language", "Mathematics (Course 2)", "Science (Physics)" and "Science (Chemistry)"

 The applicant has completed a 12-year curriculum in an education institution based on a foreign country's education system.

2) Graduate entry requirements for international students

The applicant is a non-Japanese citizen.

 The applicant has successfully obtained a degree equivalent to a Bachelor's degree for entering the Master's course or a degree equivalent to a Master's degree for entering the Doctoral program. Persons who would like to apply for graduate school should first find a suitable laboratory and arrange for a KIT faculty member to serve as an academic advisor. Applicants are required to contact potential academic

advisors directly to obtain information about application procedures.

3) Short-term student exchange program

The short-term student exchange program is a program through which international students enrolled at KIT's partner institutions are given the opportunity to study in Japan for six to twelve months. The exchange program runs from early April to March of the following year, and students are offered a choice of two admission periods: early October or early April. Application deadlines are as follows : late April for admission in early October, or late November for admission in early April.

Program Contents

1) Japanese Language Program (for full-time international students and short-term exchange students) Following classes are offered for international students to improve their Japanese language skills.

- Japanese
- Topics on Japan
- Japanese Media
- 2) Japan Intercultural Studies (in English and Japanese) (for full-time international students and short-term exchange students)
- 3) A wide range of courses in the student's major field of study (in Japanese, partly in English)
- 4) Short-term exchange students are free to design their own curriculum, balancing their interest in Japanese language and Japan intercultural studies with their desire to pursue their 'major' . They are eligible to register for any course offered to degree-seeking students at KIT.

Events

Throughout the year the International Center organizes various events such as field trips, seminars, and informal gatherings. One regular main event is the International "C" Hour, a monthly event providing a place for cultural exchange between international students, Japanese students, faculty and staff as well as citizens of Kitami city. The letter "C" of International "C" Hour stands for Conversation, Chatting, Culture, Cookies, Coffee and more. It aims to deeper understanding and promote friendship among the 30-50 participants. The event offers a variety of activities, such as introducing Japanese customs and traditions, students talking about their experiences studying abroad, or playing games together while enjoying drinks and snacks.



Tutors

In general each international student entering KIT will be assigned a tutor The tutor will support new students in many ways to settle into their new environment, for example by helping with all sorts of necessary procedures and formalities as well as providing advice regarding studies and daily life.

Housing for international students and researchers

KIT provides two housing options on campus for international students and researchers: International Residence and Student Dormitory. Some students choose to live off-campus in private apartments or lodgings.

International Residence

· 1 couple room for married couples and 2 family rooms available · Room rental rate (per room): ¥9,500 per month (couple), ¥14,200 per month (family)

Student Dormitory

· 20 single rooms available for international students

- *Full-time international students and Japanese students are treated equally.
- Room rental rate (per room) : ¥19.900 per month (including utility cost)

Financial Information

1. University Fees (for full-time international students)*

Fees are accurate at the time of printing, but subject to change without notice. Entrance fee:¥282.000

Tuition fee: ¥535.800

*The payment of tuition fees shall be waived for students enrolled in partner institutions with which KIT has concluded tuition waiver agreements.

2. University Fees (for research students)

- Fees are accurate at the time of printing, but subject to change without notice.
- Examination fee: ¥9,800
- Entrance fee: ¥84 600
- Tuition fee: ¥29.700 per month

3. Living Expenses

Monthly Average Total Expenses: ¥70.000

The above is an estimation of the monthly expenditure of a reasonably thrifty student at KIT. Expenses will vary according to personal lifestyle.

Student Dormitory	Monthly rent (including utility cost): ¥19,900
Apartment Off-Campus	Monthly rent: from ¥25,000 + utility cost from ¥10,000/month
Personal Expenses	Around ¥50,000/month

4. Contact information for further information and enquiries

International Center, Kitami Institute of Technology 165 Koen-cho, Kitami-shi, Hokkaido 090-8507 Japan Tel : (+81)(0) 157-26-9370 Fax : (+81)(0) 157-26-9373 Email :kenkyu05@desk.kitami-it.ac.jp





EVENT Engage in various experiences!



Open Campus Through the Open Campus event KIT strives to

strengthen its ties with the community and schools. It is held every year in summer and visitors can take a look at the various departments, labs, the campus and more. They can enjoy, experience and observe experiments, interact with the students or enjoy the food in the cafeteria for a whole day.







partments gather here as one team. They ild their own robots together and have ready competed at the "NHK University ocon" several times. The Robocon Team Iso gives a demonstration of their robot at the versity Festival



University Festival

The University Festival is an important event to strengthen the ties betwee university and community. It is a good opportunity for students to develop their expressiveness, creativity and communication skills away from their studies and outside of their labs. The festival is bustling every year with local stores and international students offering food at refreshment stands and oining in all the events. During the very interesting laboratory exhibitions visitors from outside the university get the rare chance to see with their own eyes what kind of research is done in each lab.

CLUBS&CIRCLES Enrich your student life by joining circle and club activities!

Sports-oriented Clubs & Circles

- Ski team Judo club Trampoline club Table Tennis club
- Men's Basketball club Men's Volleyball club Kendo club
- Sailing club Soccer club Kyudo (Japanese archery) club
- Badminton club
 Cycling club
 Athletics club
 Baseball club
- Lawn Tennis club Women's Basketball club Aviation club
- Softball club Curling club Soft tennis club
- Wandervogel (hiking) club Survival Game club Dance circle • ASC (Active Sports Club) • Snowboard club • Mixed Volleyball club
- Mountaineering club
 Sports Chanbara Club
 Swimming club
- Ice Hockey club Archery club Futsal circle
- Space development project



Library

Reading Room (2nd floor)

The library holds approximately 150,000 books, journals, periodicals, electronic book journals, newspapers, language learning materials as well as DVDs. PCs and iPads can be borrowed as well. It provides about 400 seats in a variety of rooms and areas, such as single study rooms, multi-purpose rooms and group study rooms for studying in groups while having discussions, or the PC area for self-study. The so-called Communication Hall of the Library where food and drinks are permitted provides a space not only for studying, but for taking breaks in between classes. The library is open seven days a week and on national holidays (except for year-end and New Year's holidays and during spring break).



ENJOY! CAMPUS LIFE

25

A spacious campus with a variety of facilities supporting educationand research

Buildings occupy about 69,000 m^2 on a land area of about 180,000 m^2 , i.e. four times as large as the Tokyo Dome. A total of more than 2,000 undergraduate and graduate engineering students study here. The campus includes educational facilities for daily study as well as research facilities with tangible advanced technology.

01 Guest House Shirakaba 02 Natural Energy Laboratory 03 Building 1 04 Building 2 05 Cafeteria and Stores 06 Buildings 5-6 07 Building 4 (08) Health Administration Center 09 Buildings 7 - 8

Handicraft Studio

staff is available to give advice at any time

A facility that provides place and tools for students to do simple handicraft. Technical

10 Facilities for Extracurricular Activities 19 Hybrid Plant Experiment Ridge 11 Buildings 11 - 12 (12 Kyudo Hall (archery training hall) 13 Building 17 (14) Facilities for Study Camps 15 Building 16 16 Building 15 17 Baseball Field **18** Tennis Court

Center for Regional Community

The Center is a facility to promote joint research and collaboration with the region, and is home to the Okhotsk Industry-Academia-Government Fusion Center, the Kitami branch office of the Hokkaido headquarters of the Organization for Small & Medium Enterprises and Regional Innovation, Japan, in addition to a university-launched venture company. The Center has also become a base for human resources





Open Facility Center

The Open Facility Center provides faculty, staff and students access to high-performance instruments for research. Technological staff specialized in these instruments maintain all equipment and provide technical quidance

Health Administration Center

The Health Administration Center with one doctor and one nurse was established to preserve and promote the health of students, faculty and staff. The Center performs periodic health examinations in spring every year, and contributes to health education including disease prevention, early detection, and guidance regarding health care. It also provides health consultations first-aid atment as well as professional health counse





Information Processing Center

The Information Processing Center is a joint-use facility providing ICT services including academic research, information processing education, e-mail service, applications etc.



Communication Atrium

A free space for students to meet and interact.

Tennis Court



courts) are equipped with lights for night play Student Lounge

The 4 tennis courts (omni, hard and clay

Building area about

69.000m

A facility that provides place and tools for student handicrafts. Technical staff is available to give advice at any time

- 20 Dormitory (Hokuou-ryo, for female only)
- 21 Dormitory (Hokuen-ryo)
- 22 International Residence
- 23 Athletic Field
- 24 Information Processing Center
- **25** Buildings 13-14
- 26 Second Gymnasium



- **28** First Gymnasium
- 29 Library
- 30 Building 3
- **31** Lecture Hall
- 32 Administrative Office
- **33** Budo Hall (gymnasium for martial arts)
- **34** Center for Regional Community

Site area about 180,000m