

The University of Kitakyushu

Hibikino Campus

Faculty of Environmental Engineering
Graduate School of Environmental Engineering

Establish an **intellectual** network with
the Kitakyushu Science and Research Park as the hub.



Faculty of Environmental Engineering
Graduate School of Environmental Engineering
The University of Kitakyushu

http://www.kitakyu-u.ac.jp/env/lang_en/

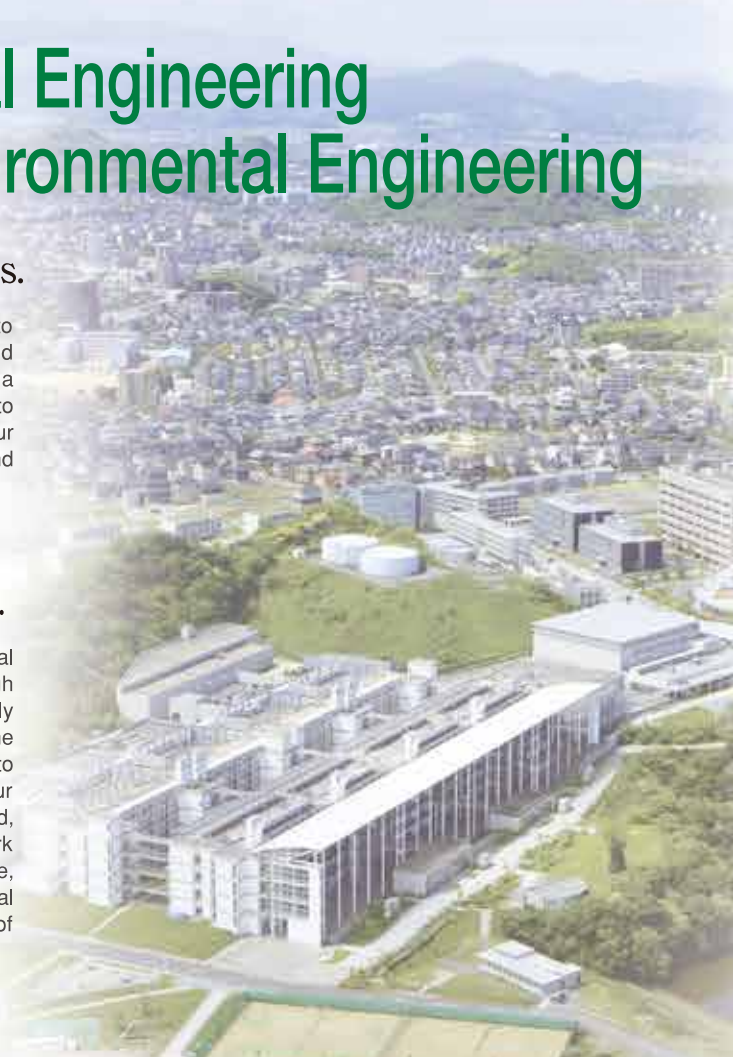
Faculty of Environmental Engineering Graduate School of Environmental Engineering

The future of the Earth is in your hands.

The advanced technology that we are using today also has the potential to cause various problems not only in our communities, but also in Asia and all over the world. The key to resolving these difficult problems is a recycling society that coexists with the ecosystem. In order for us to continue development in the 21st century, society, in the same way as our bodies aim to coexist with the ecosystem, needs to metabolize and circulate.

The keyword to decipher the future is network.

MONOZUKURI to date has involved the establishment of vertical relationships of engineering in order to mass produce high performance products. Environmental problems, due to having solely focused on the vertical relationships of engineering, have resulted in the Earth as a whole losing its balance. Going forward, in order for us to continue to use MONOZUKURI, it is necessary for us to broaden our perspective to horizontal relationships, or in other words, understand, utilize and create networks. A society with MONOZUKURI network that understands not only the vertical relationships of Science, Mechanics, Information and Architecture, but also the horizontal relationships. That is the recycling society that the Faculty of Environmental Engineering aims for.



Faculty of Environmental Engineering

Courses in Japanese language only

Undergraduate Programs

Departments	Study Fields
Department of Chemical and Environmental Engineering 45 places	Chemical Processes Advanced Materials Environmental Processes
Department of Mechanical Systems Engineering 45 places	Energy System Design and Manufacturing System
Department of Information and Media Engineering 70 places	Communication and Media Processing Computer Systems
Department of Architecture 45 places	Structures and Construction Building Materials Design Building Environment and Energy System Architectural Design
Department of Life and Environment Engineering 45 places	Life Science & Biomaterials Biological and Ecological Engineering Environmental Management

Graduate School of Environmental Engineering

Courses either in Japanese or English language

Master's Programs Doctoral Programs

Graduate Programs	Courses
Environmental Systems Master 60 places Doctor 4 places	Chemical Processes and Environments Environmental Biosystems Environment and Resources Systems
Environmental Engineering Master 50 places Doctor 4 places	Mechanical Systems Engineering Architecture
Information Engineering Master 40 places Doctor 4 places	Communications and Media Processing Computer Systems

Department of Chemical and Environmental Engineering

With Chemistry as the base, we strive for clean energy, environmental preservation and resource recycling utilization.



Features of educational curriculum and methods

Development of scientific technology and systems that harmonize with the environment.

In order to solve the global scale environmental problems that we are facing, the Department of Chemical and Environmental Engineering aims for the development of scientific techniques and energy that can exist in harmony with nature, as well as the development of resources recycling systems. The Department fosters 21st century personnel that can be active globally contributing to the development of new materials that are environmentally friendly, the effective utilization of finite resources, and development of techniques, including for materials recycling and the assessment and restoration of environmental pollution from hazardous waste.

Listen to the Earth's voice and become experts at problem resolution and the development of technology that harmonizes with the environment.

● Chemical Processes

Undertake the development of clean energy and renewable energy such as natural gas, bio-mass and solar batteries, as well as developing chemical processes for environmentally friendly material synthesis.

● Advanced Materials

Protect our lifestyle space and the natural environment by making full use of the latest nanotechnology that prospers today and developing environment harmonizing materials



the transform harmful substances into harmless ones and ultrahigh sensitivity detection methods for environmental pollutants.

● Environmental Processes

Aim to realize a recycling society (sustainable society) in which people feel safe and relaxed, by making full use of cutting-edge analytical assessment, waste treatment, and environmental restoration techniques, against the challenges from now of real environmental problems such as resources recycling, and the foundations of life, of the water environment and water treatment, and the soil environment.

Department of Mechanical Systems Engineering

Aiming at the construction of a sustainable society by achieving earth-conscious production-related technology



Features of educational curriculum and methods

Department Characteristics

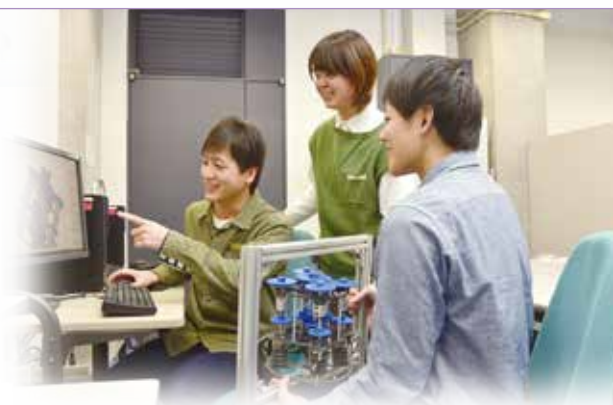
Our Department provides students interested in MONOZUKURI with opportunities to approach the subject from various angles with curricula that allows them to not only learn basics through creativity and practical applications of mechanical engineering but also enables them to develop a perspective on environmental problems.

What is MONOZUKURI ?

MONOZUKURI, a production related technology, underpins our affluent lifestyle through products such as computers, televisions, video cassette recorders, automobiles, camera/computer parts, robots, medical and welfare apparatus, thermal and nuclear power plants, metal-and-steel-making machinery, chemical plant equipment, ships and vessels, aircraft, space development systems, machine tools to produce such machinery as well as equipment, and related software, etc. This production-related technology and industry encompass the whole of human society. Mechanical engineering is the common base for MONOZUKURI.

Taking actions against environmental problems

Our predecessors worked hard with the idea that an affluent



lifestyle is based on mass production and mass disposal. With increasing concerns about environmental problems such as depletion of energy and resources, global warming, waste disposal and environmental pollution, we have realized that we need to establish a balance between an affluent society and a sustainable society. With this perspective running through our department, you can get a broader perspective on various global issues through interactions with Japanese and many international students.

Department of Information and Media Engineering

Exploring the potential of communications based on the use advanced information technology as a core



Features of educational curriculum and methods

Pursuit of information technology that contributes to the prosperity of humanity and to social and cultural development

The advancement of information technology (IT) allows for transregional and cross-cultural communication and the development of a new culture through the creative use of information media. Such information media have been utilized in distributive and economic areas acting as a driving force behind the creation of new industries by forging connections between various technologies such as materials, production and space design. To create an affluent and safe environment by using such information and media technologies, we need to foster professional engineers with a broader perspective who are able to understand their responsibility to the earth, their place in society and have a strong sense of direction beyond the mere pursuit of narrow technological goals. The Department of Information and Media Engineering provides students with educational and research activities that allow them to deepen their knowledge, heighten their sensitivity and foster their skills, creativity and practical capability, which are essential attributes for future professional engineers.

Becoming a specialist in information for the future by making use of media

- Design of very-large-scale integrated circuit (VLSI) leading to the realization of sophisticated computers
- Development of software for a safe and reliable in-vehicle system



- Development of a system of automatic design based on artificial intelligence
- Planning and development of diversified communication services such as Internet and mobile phones
- Development of communication systems to secure personal information
- Development of methods to process a range of information (signals) in the environment by computer
- Development of ways to amalgamate, integrate and control computers and communications
- Development of ways to realize next-generation visual and audio media

Department of Architecture

Pursuing city creation for the 21st century with a theme of environmental coexisting



Features of educational curriculum and methods

Creation of architecture and urban spaces in harmony with the ecosystem

The Department of Architecture, expanding conventional architectonics, has been established to meet the needs of the new era. With a focus on architecture, urban spaces and the environment, our department aims to create architectural systems and urban spaces that can save energy and reduce environmental loading. We are also pursuing the creation of an ideal environment for everyday life by connecting research activities centering on resources, energy and ecology, with practical fieldwork. Based on the ideas of architectonics, we are approaching environmental problems by accurately assessing and analyzing environmental factors found in the living environment combined with a review of daily activities.

Our education and study fields for the design of eco-friendly spaces and lifestyles

- Understanding the characteristics of materials and products used in environmental space design, technologies for enhancing the durability and maintenance of such materials, earthquake-resistant engineering and the underlying structural dynamics, eco-friendly construction techniques and methods used in the construction management
- Materials/members/construction, design of the lifecycle, starting from extraction of materials used in products through



- production and application to ultimate waste disposal, reproduction technologies such as recycling and reuse, environmental impact assessment and environmental management methods for resources recycling
- Assessment of regional energy systems, assessment of urban environment and climate such as heat islands, design of environmental equipment systems with consideration of lifecycle and its operating techniques and technology for utilizing natural energy
- Beautiful and comfortable space design that helps contribute to energy saving and effective use of resources, including design of an ecological city and landscape

Department of Life and Environment Engineering

Creating new technology via utilization of the complex structures of organisms.



Features of educational curriculum and methods

The Department's philosophy

While thoroughly studying the fundamentals of biology and science, you are able to study the interaction between ecosystems and the environment. Furthermore, you are able to master advanced knowledge and techniques relating to biotechnology, which deals with items including DNA, microorganisms, and animal and plant cells, and environmental management, which includes environment restoration techniques related to soil and water quality, environmental risk, and environmental planning and policy.

Education content

In the Department of Life and Environment Engineering, you can master biotechnology techniques that create energy and new substances and materials by utilizing the sophisticated structures of organisms and ecosystems. Furthermore, we foster professionals who can effectively utilize these techniques in the environment, ecosystems, and society.

●Life Science & Biomaterials

Study the phenomena of life from a molecular level to the individual level using Chemistry as a base. Also, study biotechnology in order to effectively utilize and adapt materials and the structures of organisms.

●Biological and Ecological Engineering

Study the numerical methods to understand ecosystems, as well as scientific technology that is considerate of ecosystems and environmental management methods to grow societies.



●Environmental Management

To master adaptable skills study mathematical simulation techniques and risk assessment techniques for understanding complex environmental problems and finding solutions for these, as well as studying policy theory and policy assessment methodology for making a more environmentally friendly society, and scientific technology management methods.

Center for Fundamental Education Hibikino

How are we different?

"Fundamental Education" at the University of Kitakyushu is different from general education at traditional universities, which focuses only on the first two years. It provides a complete system of learning that covers students from their enrollment right up to their graduation. It helps students in the following three ways:

- 1)Fosters an intellectual lifestyle suitable for university students
- 2)Helps students make a smooth transition from studying general education courses to more specialized major subjects
- 3)Gives students a broader intellectual perspective to help them bridge the gap between university and a career

Along with studying their major subjects, through Fundamental Education courses, students will develop a wider range of human qualities and learning, and gain skills that they can use beyond graduation.

What will you learn?

Fundamental Education at the Faculty of Environmental Engineering consists of the following four components: liberal arts courses, foreign language courses (English), engineering foundation courses, and special courses for foreign students (Japanese, and knowledge about Japan).



Graduate Programs in Environmental Systems

Developed countries are facing problems of global warming and resources depletion caused by large amount of energy and resources consumption, while developing countries have the environmental deterioration on the table. Thus, global cooperation that eases or solves these issues is inevitable to achieve sustainable growth for human beings. The objective of Environmental Systems is to give students an overview of the problems related to

the resources, energy, the environmental issues to look for the solutions for mutually related problems systematically, while taking advantage of advanced technology such as biotechnology and chemical technology. For conveniences of study, students are classified into three specialized courses: Chemical Processes and Environments, Environmental Biosystems, and Environment and Resources Systems.

Master's Program
(Number of places: 60)

Degrees available
● Master of Engineering

● Master of Philosophy
● Master of Environmental Management

Doctoral Program
(Number of places: 4)

Degrees available
● Doctor of Engineering

● Doctor of Philosophy

Courses

Chemical Processes and Environments

This course deals with the comprehensive educations and researches on the developments of novel chemical monitoring and analysis methods, recovery systems of valuable substances from various resources, removal systems of toxic substances from the environment, and innovative energy systems using chemical processes. This course also provides the educations and researches on the development of innovative materials with multi-functions based on chemistry and chemical engineering in wide ranges from nanostructures to macrostructures for realizing the establishment of the novel environmental-friendly processes and recycling processes in modern society.



Environmental Biosystems

This course deals with comprehensive education research regarding environmental engineering related to living organism, ranging from micro biotechnology represented by genetic manipulation, biological catalysts, and functional microbes, to macro biosystem engineering including biomass energy, biochemical material circulation and biotope. Students will be specialized in applying biofunction to environmental restoration and in building a next generation biological environment system in the related fields.



Environment and Resources Systems

This course provides comprehensive education research to understand environmental impact caused by production activities, regional development, civil life, energy consumption as well as influences of the environment on human beings and social environment; and to acquire capability to understand ecosystem of ground, water and soil, and perform investigation, planning, and design for conservation and restoration of the ecosystem. Students receive training in the fields of fundamental scientific technologies and techniques including environmental preservation engineering, recycling engineering, environmental assessment, environmental restoration technology, and fundamental social science such as environmental policy and international standards. Students also receive practical training in



the fields of urban environment management, regional society system, biological conservation system, and global cooperation for the environment using the actual examples such as eco towns.

Graduate Programs in Environmental Engineering

Environmental problems have to be solved urgently by calling upon a great amount of expertise. In order to solve today's complex environmental problems, from immediate residential environment to global scale and create rich environment, we need to get hold of the problems with broader perspective and respond to them appropriately. The objective of education of Information Engineering is to give students integrated and

intensive education in specialized fields related to "Mechanical System Engineering" and "Architecture" based on the students' accumulated knowledge through research and education, while giving them a flexible training that surpasses the framework of the specialized fields. For conveniences of study, students are classified into two specialized courses: Mechanical Systems Engineering and Architecture.

Master's Program (Number of places: 50)	Degrees available ● Master of Engineering ● Master of Philosophy
Doctoral Program (Number of places: 4)	Degrees available ● Doctor of Engineering ● Doctor of Philosophy

Courses

Mechanical Systems Engineering

This course provides perspectives to see Sustainable Development from a viewpoint of both reduction in environmental load and economic development combined and to see environmental improvement as the primal target of their work. Students receive training in the field of building environment-conscious energy system such as effective energy conversion and effective utilization of natural energy, design methods in view of environment, quality, safety, and reliability; and environmental technologies optimized based on the concerning principles. This course provides training for students to become environmental engineers with global perspective, giving them up-to-date



information and knowledge, and serves as a place to reeducate adult students as well to meet the growing demand for such engineers.

Architecture

This course deals with advanced and sophisticated knowledge and technology concerning environmental space design including residential environment design, environmental space conservation structure, and urban architecture energy system to create and conserve architecture, cities, and regions in the age of global environment, along with related fields. Through this course, students will be specialized in skills in solving problems concerning architecture and regions according to the situation in specialized and comprehensive manners so as to become a designer with technological perspective, or a an engineer having viewpoints of design.



Graduate Programs in Information Engineering

In the advanced information society, information communications environment in which diversified multimedia information can be utilized without regard to place, time, or media is necessary. In such an environment, a new value in engineering is being created by designing complex system systematically as well as optimally. The objective of education of Information Engineering is to give students specialized education and research programs

in “Communications and Media Processing” and “Computer Systems” so that students will be specialized in designing information communications environment in which humans can naturally deal with multimedia information. For conveniences of study, students are classified into two specialized courses: Communications and Media Processing and Computer Systems.

Master’s Program
(Number of places: 40)

Degrees available

● Master of Engineering

Doctoral Program
(Number of places: 4)

Degrees available

● Doctor of Engineering

Courses

Communications and Media Processing

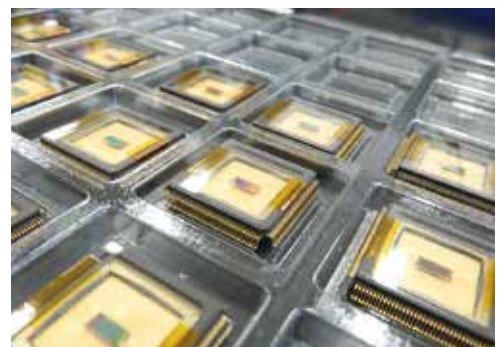
Human beings and environment are about to be organically connected, even more strongly than ever through “information and communications.” With this basic perspective, this course provides comprehensive education research regarding design of intellectual information and communication systems. Students receive training in the fields of information communication network, software/security technologies that support the network, multimedia signal processing, audio/image signal processing, and adoptive signal processing. This course provides comprehensive and academic education research such as information communication network and media processing,



so that students will become engineers/researchers equipped with basic knowledge and rich ideas who can flexibly address advanced information society.

Computer Systems

VLSI system is hardware indispensable for realizing information-processing system that supports advanced information society. With the development of fine processing technology, integration degree in VLSI chips has also been increased and an era of SoC (system on chip) is about to come. Reliable embedded software and control technology secure the effectiveness and safety of embedded system and control system, which are applied system of VLSI computer. This course provides education research of theory and technology for designing VLSI system and embedded system, technology of analysis/design/measurement/control of concerning system, to provide training for students to become engineers and researchers equipped with integrated skills in computer systems



and highly advanced knowledge and perspective that cover a wide range of concerning areas. Those who finish this course are expected to achieve great success as design engineer, or production engineer in Kitakyushu district, which is a location of industrial robot related companies, electrical parts makers, automobile industries, and related companies.

CAMPUS LIFE

■ Student Counseling Service

The university not only provides students with an opportunity for learning and group activities, but also functions as a place for self-discovery and personality development. In campus life, students will face many problems, such as academic and career anxieties, economic concerns, or health problems. To help students overcome such concerns, our University provides a Students Counseling Service, in which professional counselors offer support.

■ Welfare Facilities

The University Co-op supports student academic and campus life. The Co-op has a store/kiosk offering everything from erasers to personal computers, and a bookstore offering books at discount prices. Various other services range from driving school appointments, cellular phone sales and housing placement. There is also a cafeteria offering a balanced meals at reasonable prices.

■ Academic Calendar

April	Entrance ceremony / 1 st (spring) semester starts
July	Examination for the 1 st (spring) semester
August	Intensive courses / Summer vacation starts
September	End of summer vacation / Receive academic transcript / Graduation ceremony
October	Entrance ceremony (for graduate school) / 2 nd (fall) semester starts
November	University festival
December	Winter vacation starts
January	End of winter vacation / Examination for the 2 nd (fall) semester
March	Receive academic transcript / Graduation ceremony

■ Annual Tuition Fee

The annual tuition fee can be paid in two installments.

Payment	
1 st	JPY267,900
2 nd	JPY267,900
Total	JPY535,800

* Fees subject to change

■ Admission Fee, etc.

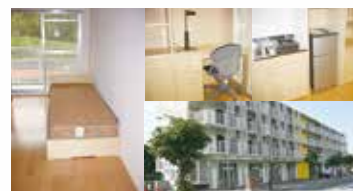
Payment	
Admission Fee	JPY423,000
Other Fees	Approx. JPY130,000

* "Other Fees" includes a casual insurance fee and expenses for the association of supporters, alumni association and academic society.

* Fees subject to change

■ International House

Accommodation is available for international students at reasonable prices. The dormitory is located within the Kitakyushu Science and Research Park.



■ Scholarships

The University offers the alumni scholarship. There are also scholarships from the Japanese government and company.

■ Health Care

Being mentally and physically sound is essential in leading a happy campus life. The University pays careful attention to students' health care, and at the University infirmary, a nurse provides first-aid treatment and advice on health care. If necessary, students are referred to a medical institution. Moreover, a physical examination is conducted in April each year for prevention and early identification of diseases. As the need arises, advice on health care is given to those who have a health problem.

International Student Support Center

A strong friend to International Students

If there are aspects of everyday or student life in Japan that trouble you, or there is something you don't understand, please do not hesitate to seek advice at the International Student Support Center. The Center is also a place for exchange between students and local volunteers. Many international students come to the Center and enjoy talking with the staff.

Opening Hours

Mon to Fri 8:30—17:15 (excluding holidays)

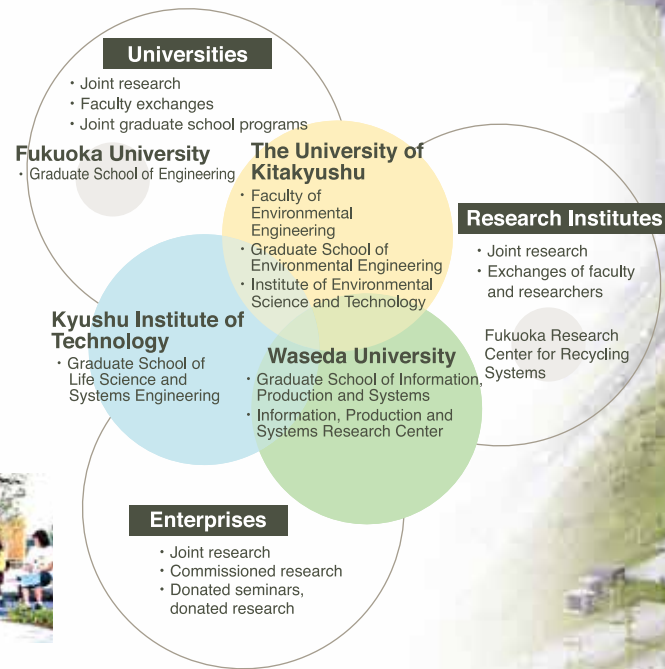
Services Available

- Scholarships
- International House
- Apartment contracts
- Provision of employment information
- Distribution of various Immigration Bureau of Japan application forms



Kitakyushu Science and Research Park

Kitakyushu Science and Research Park (KRSP) opened in April 2001, aims to "further the development of technology and the creation of new industries" and "Technologies research center open to Asia" through a single campus integration of national, municipal and private universities that specialize in science and engineering. The four universities (and 1 undergraduate program) already based at the park are engaged in the training and research of cutting-edge science technologies, in particular, IT and biotechnology under the common philosophy of KRSP.



Features

Universities and research institutes related to science, engineering, and research departments of companies located on campus

- National, municipal, and private universities (1 faculty, 4 graduate schools)
Faculty and Graduate School of Environmental Engineering, The University of Kitakyushu
Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology
Graduate School of Information, Production and Systems, Waseda University
Graduate School of Engineering, Fukuoka University
- Public and private research institutions (16 research institutes)
- Companies involved in research and development (47 companies)

Common educational and research principles among universities on the campus

- Conducting advanced education and research in the fields of cutting-edge science technology
- Promotion of collaboration between industry and academia
- Nurturing an entrepreneurial spirit ● Establishing a center for academic research in Asia

Cooperative campus management & common use of facilities

- The Kitakyushu Science and Research Park steering committee is composed of representatives from universities within the campus, and plans for joint endeavors
- Common use of libraries, information processing facilities, convenient facilities, and others

Exchange and collaboration among researchers, staff, and students

- Joint research and faculty exchanges among participating universities
- Transferable credits to other universities
- Operating joint graduate school programs of participating universities on the campus

Eco Campus

The Campus blends with the natural surroundings and the environment, incorporating efforts to use natural forms of energy, reduce energy consumption and reuse natural resources.

Environmental Symbiosis

Utilization of Natural Energy

- Extensive use of natural wind and light
- Green areas on the roofs and walls
- Underground heat storage system for air conditioning and heating



Green areas on the roofs

Water Recycling

Effective Use of Water Resources and Sewage Water Purification

- Water recycling system
- Establishment of the Biotopes (*1) and natural waterway

(*1) Biotopes are environments inhabited by various wild creatures interacting with each other



Natural waterway

Generation of Electricity and Heat

Initiatives for New Energy

- Solar cells ● Fuel cells
- Provision of electricity and heat by cogeneration system (**2)

(**2) This is a system for providing electricity and heat using heat discharged by generating electricity

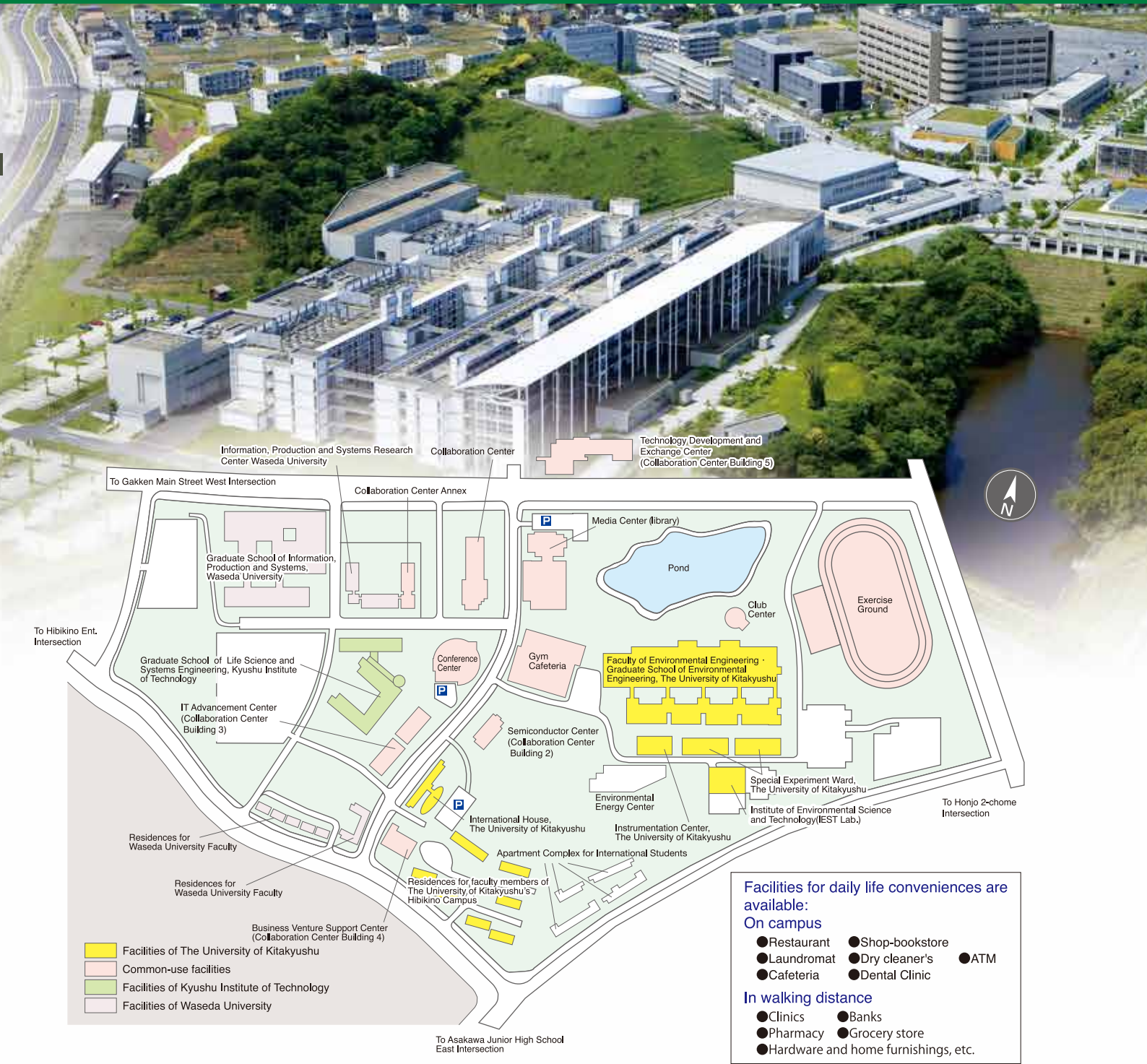


Energy Center
(Facility for combined energy and water treatment)



Solar panels

About Hibikino Campus



Collaboration Center



The Center is occupied by research institutes such as the Fukuoka Research Center for Recycling Systems, enterprises conducting cutting-edge research and Fukuoka University's Graduate School of Engineering. It also offers seminar and conference rooms that can accommodate up to 100 people.

Media Center (Library, Information Processing Facility)



This Center gathers and provides academic information and is equipped with education facilities related to information processing. The Center also manages the vast information network established within the campus and various related services regarding information and communication.

Conference Center



The 460-seat Main Hall is equipped with videos and a simultaneous interpreting system suitable for holding academic conferences and lectures. A variety of events can be held at the adjacent Event Hall which will accommodate up to 100 people.

Sports Facilities



These sports facilities can be used by enterprise researchers and citizens as well as students and faculty. Gymnasium / exercise room / play ground / tennis courts / lockers / shower rooms



JR Kokura Station



JR Moji Station



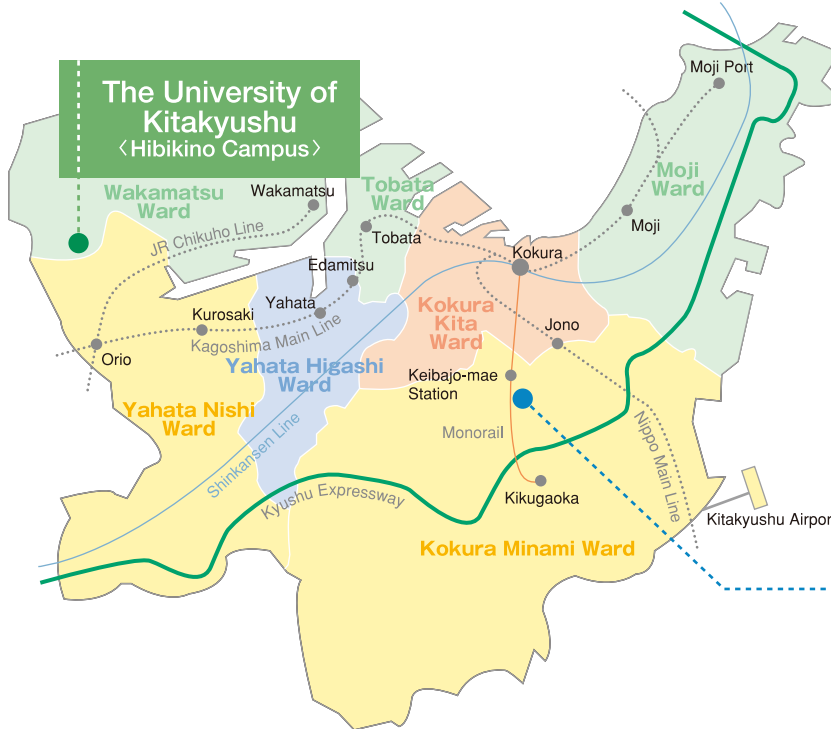
Moji Retro District



Mikuni World Stadium Kitakyushu



Wasshoi Summer Festival



- The University of Kitakyushu**
 <Kitagata Campus>
- Faculty of Foreign Studies
 - Faculty of Humanities
 - Faculty of Economics and Business Administration
 - Faculty of Law
 - School of Regional Development
 - Graduate School of Social System Studies
 - Graduate School of Business Administration



International flights from Fukuoka Airport

City names	Flight time	City names	Flight time
Busan	0:40	Hanoi	4:55
Seoul	1:10	Singapore	5:35
Jeju Island	0:50	Manila	3:40
Beijing	4:10	Guam	4:05
Dalian	1:45	Honolulu	9:00
Shanghai	1:30	Ho Chi Minh	5:05
Hong Kong	3:05	Qingdao	1:50
Taipei	2:05	Wuhan	2:10
Bangkok	5:10	Amsterdam	11:45

Proactive approach to environmental problems

Japan's modern industry began with the commencement of operations in Kitakyushu of the government-managed Yawata Steelworks in 1901. Following this, as one of Japan's four major industrial areas, we supported our country's high economic growth. On the other hand, this brought upon us severe industrial pollution in the 1960s. In the City of Kitakyushu, residents, the bureaucracy and industry came together to act against the sea of death as Dokai Bay was called, and the seven color sky as the sky that record Japan's worst falls of soot was known, and brought back the beautiful sea and sky. Our City began urban development that utilized the environmental technology, know-how and personnel cultivated in the process of overcoming the pollution and proactively progresses international cooperation on the environment. This type of approach was acknowledged globally as the City was awarded UN Local Government Honours at the United Nations Conference on Environment and Development (UNCED: Earth Summit) held in Brazil in 1992.



Kitakyushu Eco-Town Project

Towards the realization of a zero-emissions concept that utilizes industrial waste as the raw material of other industries, the Project, which aims to establish an environmental industries hub, has established in Wakamatsu-ku areas such as the Practical Research Area, where new technologies are empirically researched, and the Comprehensive Environmental Complex for commercialization.



Contacts

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