CAMPUS MAP



ROKKODAI CAMPUS

- Faculty of Letters / Graduate School of Humanities
- Faculty of Intercultural studies / Graduate School of Intercultural studies
- Faculty of Human Development
- Graduate School of Human Development and Environment
- Faculty of Law / The Graduate School of Law
- Faculty of Economics / The Graduate School of Economics
- Faculty of Business Administration / Graduate School of Business Administration
- Faculty of Science / Graduate School of Science
- Faculty of Engineering / Graduate School of Engineering
- Faculty of Agriculture / Graduate School of Agriculture
- Graduate School of International Cooperation Studies
- Organization of Advanced Science and Technology
- Research Institute for Economics and Business Administration University Libraries
- Common-Use Faculties and Research and Business Administration Medial Center for Student Health

Osaka nternational Kawara -machi Sannomiya Sta. Hotaruqa Airport (Local) (5min) JR Kobe Line Rokkomichi Sta. Kobe Municipal 🗙 Rokko-dai Campus Hankyu Takara (Shin-Osaka Osaka Sta. Subway Seishin-Yamate Line JUSO Kyoto Hankyu Kobe Line (Rapid) (22min) Rokko Sanno -miya JR Rokkomichi Konan-Yamate Amagasaki Osaka JR Osaka Loop Line Sannomiya Sta. Fukae (Local) (6min) Hanshin Main Line Fukae Campus 🕅 Hankyu Kobe Line Rokko Sta. Kyo-bashi JR Tozai Line Osaka Sta. (Rapid) (22min) Port Liner Osaka Municina Sannomiya Sta. Subway Midoduji Line Kobe Airport (Rapid+Local) (15min) Nanka Airport Hanshin Main Line Fukae Sta. Tenno Nara Kansai Inter-national Airport Umeda Sta. (Rapid+Local) (21min) about 10 min JR Kansai International Airport Line

ADDRESS 1-1 Rokkodai-cho, Nada-ku, Kobe 657-8501 Japan Tel. +81 (78) 881-1212 E-mail: eng-kyomugakusei@office.kobe-u.ac.jp http://www.eng.kobe-u.ac.jp/e_index.html http://www.kobe-u.ac.jp/opie/eng/index.html

KOBE CITY

The City of Kobe is located to the west of center on the Mainland of Japan. It is accessible by land, sea. and air to domestic and international destinations. It takes 2 hours and 50 minutes to get to Tokyo by Shinkansen Bullet Train, and 1 hour and 20 minutes by plane. Within easy reach of Kobe, there are several famous cities with many historical sites and spots of interest, such as Himeji, Kyoto, Nara, and Osaka. Ever since it was opened to the world, Kobe has developed as a cosmopolitan port city where people, goods, and information from around the globe are in constant motion. Now, Kobe has a population of 1.5 million including 45,000 foreign residents from as many as 115 different countries, and is well known throughout Japan as being an "international city" . With diverse population of foreign residents and the resulting facilities and amenities established by and for such foreign communities, Kobe is uniquely qualified to support a comfortably refined lifestyle for any individual from any country.

Sandwiched by Mt. Rokko in the north and the Inland Sea of Seto in the South, Kobe is endowed with its overall mild climate averaging 17.1C(62.8F) with four seasonal changes.



Kobe Municipal Bus #30

On foot:

Rokko

FACILI TY DE ENGINEERING **GRADUATE SCHOOL OF ENGINEERING** KOBE UNIVERSITY 2008

- ARCHITECTURE
- CIVIL ENGINEERING
- ELECTRICAL AND ELECTRONIC ENGINEERING
- Mechanical Engineering
- CHEMICAL SCIENCE AND ENGINEERING
- **COM**PUTER SCIENCE AND SYSTEMS ENGINEERING





MESSAGE

WELCOME TO GRADUATE SCHOOL / FACULTY OF ENGINEERING



Graduate School of Engineering Professor Masayuki Morimoto

Dean.

raduate School/ Faculty of Engineering of Kobe G University has developed a very wide spectrum of education and research in the fields of natural science ranging from basic science to applied engineering. In order that the results of engineering research should be returned to benefit human society, the Faculty aims to educate engineers and researchers who have a dual focus on both basic and applied aspects of engineering.

M odern technology has developed very rapidly, in particular in the fields of new functional material creation, innovation in production engineering, upgrading of IT technology, and assessment and management of the human environment. Research in these areas requires leading-edge facilities. The six departments (Department of Architecture, Department of Civil Engineering, Department of Electrical and Electronic Engineering, Department of Mechanical Engineering, Department of Chemical Science and Engineering, and Department of Computer Science and Systems Engineering) are equipped with unique research facilities which are also available for educational purposes.

A t present, 1000 overseas students study at Kobe University, 150 of them either in Graduate School and Faculty of Engineering. Human resources development from a global perspective is one of the policies of Kobe University. It is also one of the most important aims of us. The Faculty offers an excellent research and education environment and heartily welcomes students who wish to take on the challenge of exploring new fields in engineering.





ADMISS EDUCA DEGRE FACULT

CAMPU

HISTORY

FACULTY OF ENGINEERING

he Faculty of Engineering was established in 1949, growing out of the former Kobe Technical College, which was originally established in 1921. Since then, the Faculty has contributed to the development of modern industrial society in the latter half of the 20th Century through its education and research. The aim of the Faculty in the new millennium is to educate future researchers and engineers to be able to contribute to the welfare of humankind through cutting-edge technologies.

GRADUATE SCHOOL OF ENGINEERING

he Graduate School of Engineering was established In April 2007 as an educational and research institute aimed at providing engineering knowledge, fundamental and applied technologies directly related to a symbiosis and sustainable development of society, reorganizing of the Graduate School of Science and Technology which was established in 1981. Departments in the Graduate School of Engineering is arranged in a similar way as the Faculty of Engineering to offer a consistent educational system from undergraduate to graduate school.

DMISSION POLICY				
DUCATION				
EGREE PROGRAM				
ACULTY / GRADUATE SCHOOL OF ENGINEERING				
ARCHITECTURE		8		
	• 1			
ELECTRICAL AND ELECTRONIC ENGINEERING	· 1	z		
MECHANICAL ENGINEERING	• 1	4		
CHEMICAL SCIENCE AND ENGINEERING	1	6		
COMPUTER SCIENCE AND				
SYSTEMS ENGINEERING	1	8		
AMPUS MAP	2			

The Faculty now has six departments: Architecture, Civil Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Chemical Science and Engineering, and Computer Science and Systems Engineering, each of which consists of several divisions areas dedicated to the specific purposes of education and research. Approximately two-thirds of students continue on to Master's program for higher education.

The Graduate School of Engineering offers the following six departments in both the Master's and Doctor's Degree Program: Architecture, Civil Engineering, Electrical and Electronic Engineering, Mechanical Engineering, Chemical Science and Engineering, Computer Science and Systems Engineering. By covering a wide range of interdisciplinary academic fields (environment, nanomaterial, information and telecommunication, life science, energy, robot, safety etc.), these six departments will create new technologies for the betterment of the society

ADMISSIONS POLICY

EDUCATION FACULTY OF ENGINEERING

FACULTY OF ENGINEERING

With six courses of study in the Faculty of Engineering, we seek to nurture the researchers and engineers who will open the path to the next generation. Students perform original and advanced work on the international stage, in addition to understanding the basic learning essential in each cutting-edge technological and scientific field. After graduation, the road to move forward to studies at the Graduate School of Engineering is wide open, allowing students to cultivate an even higher level of expertise and obtain the abilities needed for selfmotivated research and development.

oreover, since students can choose to go abroad to study for a fixed period at overseas universities with partner relationships with the faculty through education and research, we have created a system to enable students to gain an international viewpoint at the same time as they study in their chosen field of

expertise. To ensure that students are able to comfortably understand their foundation and major concentration courses after admission to the faculty, students must be equipped with an extensive range of basic knowledge and thoroughly understand the different subjects on the designated Center Examination and the individual examinations which serve as the faculty's entrance selection examinations. The Faculty of Engineering at Kobe University cherishes those people with lively curiosity and inquisitive minds with a critical nature towards those things that cannot be understood merely by applying common sense, and we offer an environment where these traits can be taken full advantage of. The faculty welcomes all who are full of the desire to contribute to the harmonious co-existence of the natural world and human society in the near future, through scientific and technological fields.

GRADUATE SCHOOL OF ENGINEERING

Ithough policies and standards for student admission differ depending on the homeland organization of those students wishing to enter the Graduate School and the major or field welcoming the student, we have drawn up the following common guidelines for prospective students.

- 1) Applicants displaying enthusiasm for clarifying the principles behind natural phenomena, as well as application and development of technology, and having a strong desire to discover their own problems and attempt to resolve them
- 2) Applicants equipped with creativity and practical abilities

- 3) Applicants having logical thinking abilities and persuasive power when presenting the results of research and in similar situations
- 4) Applicants having ethical standards and the ability to understand and question the effects of technology on society
- 5) Applicants having a clear awareness of their future direction (becoming researchers or professionals with a high level of expertise)
- 6) Applicants with a strong desire to acquire even higherlevel and more advanced knowledge and technology among professionals who already have a great deal of experience in the world

niversity students enrolled in the Faculty of Engineering are expected to obtain an extensive education and fundamental knowledge, and be able to develop technology with an eye on the future of humanity. To this end, we believe our students, with their youthful, flexible intellects, need to be able to study freely and independently to become full-fledged members of society, while getting a feel for the advanced, high-level technology around them. Consequently more than 70% of Faculty of Engineering students go on to graduate school after completing the undergraduate program. Our faculty has also prepared a range of course subjects with the aim of training generalists in many differing fields because that graduates who leave us directly for the business world do not necessarily proceed in their own field of study, but rather advance in a wide variety of different fields. Along with strong grounding in the fields of the core curriculum, which is based on the central fields of study in Engineering, the Faculty of Engineering at Kobe University

GRADUATE SCHOOL OF ENGINEERING

t graduate school, students first do the coursework education and research that stresses original research Apart of the graduate program and then the into basic knowledge and the student's specialization. dissertation-writing phase of the doctoral program. The framework of the Graduate School of Engineering's September 2007 saw the reorganization of the existing educational program is a curriculum of engineering Graduate School of Science and Technology and the courses thoroughly covering the traditional areas of start of its new incarnation. In addition to systematically engineering scholarship, including a rich variety of developing a consistent educational program from the programs (program course, multiple major course, start of undergraduate studies until the completion of cooperative education programs) to enhance the level of graduate work, the Graduate School of Engineering graduate school education. also looks to present a fundamental way of thinking for

Staff

Professors Associate Professors Associate Professors Assistant Professors **Research Associates** Faculty of Engineering 67 67 3 33 9 Total of Kobe Univ. 558 414 83 252 30

Number of Students

	Undergraduate Students				Graduate Students				Tatal
			Intl. St	udents	Intl. Students			Total	
Faculty of Engineering	2,499	(317)	42	(12)	1,082	(129)	95	(20)	4,196
Total of Kobe Univ.	12,363	(4,231)	140	(59)	4,820	(1,506)	788	(386)	24,293
Number of Students (): Number of femal student									

INTERNATIONAL ACTIVITIES AT THE KOBE UNIVERSITY GRADUATE SCHOOL OF ENGINEERING AND FACULTY OF ENGINEERING

K obe University has concluded several academic exchange agreements with other educational and research organizations at universities overseas, either between the universities themselves or between departments. We then work together on joint research, exchanging teaching staff, students and information in fields of mutual academic and educational concern. For student exchanges, we have put into place detailed agreements on the mutual non-collection of tuition and other fees, and students can go on exchange with the knowledge that course credits they obtain at their

overseas university will be accepted at their home universitv.

B ased on these set programs, many students from the Graduate School and Faculty of Engineering go abroad to study at the partner universities, under a credit transfer system for the course credits these students obtain at their overseas universities. We also accept a number of exchange students coming from overseas to pursue their studies in the international atmosphere of the citv of Kobe.



endeavors to instill in our engineers a strong engineering ethical standard. After passing the graduate research examination in the fourth year, students are awarded a Bachelor's degree.



*Principles of education, foreign language subjects, information basics, health and sports sciences



(As of May 1, 2007)

DEGREE PROGRAM

STRUCTURE AND DIVISIONS \checkmark

MASTER'S DEGREE PROGRAM

he Graduate School of Engineering's education and research is dedicated to cultivate human resources with a wide range of knowledge in their specialized field, and interdisciplinary perspectives. The school especially focuses on fostering researchers and highly specialized professionals who are rich in creativity, and possess multifaceted perspectives. Students are granted a Master's Degree in Engineering when they complete this program.

Highly specialized main courses established

DOCTORAL'S DEGREE PROGRAM

urther developing and deepening of courses offered in the Master's Degree Program. This program is to foster researchers, academic members of higher education and research institutions, and highly specialized professionals who are highly creative, internationalminded, and have an excellent ability to establish, explore, and solve problems by themselves. A Doctor's Degree, either a Dr. of Engineering or a PhD will be granted upon through further development and deepening of the undergraduate engineering courses.

- Education in the area of integrated engineering with a number of advanced courses for interdisciplinary engineering education.
- Fostering of human resources educated through multimajor course (a major and several sub-majors).
- Medical Engineering Course for people who hold a full time job. (Master program to foster core human resources for manufacturing)

completion of the program.

- A strict coursework of research for dissertation.
- ▶ Finding problems, designing research plans, conducting research, organizing research results, finding possible ways to solve unsolved problems and then organizing and reporting these possibilities.
- Fostering of human resources educated through multimajor course (a major and several sub-majors)

COMMON-USE FACILITIES

-INTERNATIONAL STUDENT CENTER

he International Student Center is one of university wide research/teaching facilities established in April 1993. This Center provides international students with education in Japanese language and Japanese studies. It also offers consultations on problems encountered in studying or living in Japan.

In its aim to promote international academic exchange programs, the Center supports overseas study for Japanese students studying at Kobe University. The local community is very important for the International Student Center; therefore, it is actively promoting projects to strengthen ties between international students and local organizations, as well as programs to help international students improve their Japanese language abilities.

(http://www.kobe-u.ac.jp/~kisc/english/i_topics.html)

-SCHOOL OF LANGUAGES AND COMMUNICATION

he School of Languages and Communication (SOLAC) was established in October 2003 in response to a call for more international communication

at Kobe University. SOLAC aims to provide languagerelated support to the greater University community by introducing self-access rooms and CALL facilities for independent study, as well as developing more effective curricula, methodologies and teaching materials for language courses. SOLAC, in addition, plays an active role in promoting research and education at postgraduate levels in the fields of language, culture, and communication.

(http://solac.cla.kobe-u.ac.jp/index-e.html)

-MEDICAL CENTER FOR STUDENT HEALTH

he Medical Center for Student Health was established in April 1970. Services provided by the Center include annual medical checkup for all students and staff, special checkups for X-ray and/or radioisotope users, as well as new overseas students. Emergency medical treatment is also available. There are doctors and nurses as well as counselors to provide consultation or advisory service on physical and mental problems. (http://www.kobe-u.ac.jp/medicalc/index-j.html)



Faculty of Engineering /Graduate School of Engineering

Ele Ele Eng

Departments	Divisions	
Architecture Staff 30 (Prof.12 / Assoc.Prof.10)	Spatial Design	Archited Structur
	Architectural Planning, History and Theory	History Planning Planning
	Engineering of Building Structures	Structur Structur
	Architectural Environmental Engineering	Planning Environi Services
	Cooperative Division	Disaster
Civil Engineering Staff 18 (Prof.8 / Assoc.Prof.7)	Engineering of Human Safety	Structur for Urba Enginee Enginee
	Engineering of Environmental Symbiosis	Environi Environi Enginee Planning
Electronic Engineering Staff 27 (Prof.10 / Assoc.Prof.12)	Physical Electronics	Mesosc Enginee Physics
	Computer and Information	Integrat Commu
	Cooperative Division	Function
Mechanical Engineering Staff 35 (Prof.13 / Assoc.Prof.14)	Thermo-Fluid and Energy	Applied Convers
	Mechanics and Physics of Materials	Solid M Surface
	Design and Manufacturing	Comple Integrat System
Chemical Science and Engineering Staff 34 (Prof.10 / Assoc.Prof.14)	Applied Chemistry	Applied Organic Chemist Chemist
	Chemical Engineering	Catalysi and Eng Enginee Material
	Cooperative Divisions	Localize Energy
Computer Science and Systems Engineering Staff 39 (Prof.16 / Assoc.Prof.15)	Informatics	Media Ir Artificial Mathem
	Information Systems	Intellige Photoni
	Systems Design	Systems Informat Distribut Control
	Cooperative Divisions	Applied



Education/Research Fields

ctural and Urban Design/ Housing and Community Design/ al Engineering and Design/ Building Management

and Theory of Architecture, Theory of Historical Environments/ g Theory of Built Environment/ Urban and Architectural Safety

al Performance Engineering/ Structural Control in Dynamics/ al Systems Engineering

g of Acoustical and Lighting Environments/ Thermal mental Planning/ Planning of Urban Environment and M&E

Mitigation Planning

ral Engineering for Urban Safety/ Geotechnical Engineering an Safety/ Transport Systems Engineering/ Geotechnical ring for Disaster Reduction/ Earthquake Disaster Mitigation ring/ Disaster-prevention Engineering for River Basin

mental Fluid Engineering/ Engineering of Hydrospheric ment/ Geo-environmental Engineering/ Urban Preservation ering/ Urban Preservation Engineering/ Urban and Transport g and Management

opic Materials/ Photonic Materials/ Quantum Functional ring/ Nano-Structure Electronics/ Electromagnetic Energy

ed Circuit Information/ Computer Engineering/ Information and nication Engineering/ Algorithms/ Intelligent Learning Theory

nal Thin-Film Engineering

Fluid Engineering/ Multiphase Thermo-fluid Dynamics/ Energy sion Engineering/ Energy and Environmental Engineering

echanics/ Fracture Control Engineering / Material Science/ Interface and Tribology

x Mechanical Engineering/ Machine Dynamics/ Computer ed Manufacturing/ Intelligent Artifacts and Manufacturing s/ Creative Design

PhysicalChemistry/ Applied Inorganic Chemistry/ Applied Chemistry/ Applied Polymer Chemistry/ Advanced Analytical trv/ Advanced Polymer Colloids/ Advanced Molecular trv

is and Catalytic Reaction Engineering/ Transport Science nineering / Process System Engineering/ Fluid and Particle ring/ Biochemical Engineering/ Bioprocess Engineering/ Is Processing Engineering

ed Reactions and Physical Properties of Materials/ Chemical Conversion Process

nformatics/ Programming Languages/ Intelligent Systems/ Intelligence/Intelligent Software/Intelligent Software/ natics of Informatics

nt Robotics/ Wireless Telecommunication/ Information cs/ Computer System/ Processor Architecture

s Planning/ Optimum System Design/ System Control/ System tics/ System Structure Analysis/ Identification Theory for ted Parameter Systems and Applied Functional Analysis/ of Distributed Parameter Systems and Nonlinear Analysis

Systems / Kansei and Media Art

ARCHITECTURE

SYMBIOSIS OF ARCHITECTURE AND ENVIRONMENT, CREATION OF SAFE AND COMFORTABLE LIVING SPACE

HTTP://WWW.ARCH.KOBE-U.AC.JP



Exercise of architectural design and planning at studio

Practice of experiments on structural materials

Presentation of design projects

Measurement of thermal environment

Exercise on drawing and painting

CONCEPT

rchitecture is eminently universal field of learning, Concerning the creation of housing, architectural facilities, - basis of human life. In order to respond to both universal and up-to-date architectural problems, it is necessary not only to study basic fields of architecture (design and planning, structural engineering,

environmental engineering) but also to synthesize them for spatial and temporal design problems. Department of architecture, Kobe University aims to produce talent who can correspond synthetically to contemporary architectural challenges by educating with specialty and synthesis.

EDUCATION

ndergraduate program starts with liberal arts and basic subjects on natural and information science, succeeded by basic and applied subjects of architecture extending over design and planning, structural engineering and environmental engineering, and continues to synthetic and practical spatial design education.

Master program aims at acquirement of higher knowledge of design and planning, structural engineering and

STRUCTURE AND DIVISIONS

-SPATIAL DESIGN DIVISION

Synthetic and practical education and research for the creation of space:

Architectural and Urban Design, Housing and Community Design, Structural Engineering and Design **Building Management**

-ARCHITECTURAL PLANNING, HISTORY AND THEORY DIVISION

Basic education and research of the architectural design:

History and Theory of Architecture, Theory of Historical Environments, Planning Theory of Built Environment, Urban and Architectural Safety Planning

for deducing specific answer to spatial and temporal design problem. Doctoral program aims at construction and cultivation

environmental engineering. And at the same time, training

of theory associated with design and planning, structural engineering and environmental engineering to produce international talent who provides sophisticated special knowledge.

-ENGINEERING OF

BUILDING STRUCTURES DIVISION

Education and research for the safety of buildings in the case of earthquakes, improvement of building materials and structural systems:

Structural Performance Engineering, Structural Control in Dynamics, Structural Systems Engineering

-ARCHITECTURAL ENVIRONMENTAL ENGINEERING DIVISION

Education and research on analysis, control and planning of architectural and urban environment: Planning of Acoustical and Lighting Environments, Thermal Environmental Planning, Planning of Urban Environment and M & E Servic

MESSAGES FROM INTERNATIONAL STUDENT



ABDUL MUNIR [from Indonesia] It is a great educational experience for me to be a graduate student in Kobe University, which has very well organized academic activities and very good official services. I enjoy the academic atmospheres in the campus as

well as the daily life in Japan, as a beautiful country, with generous and friendly people, and rich of cultural values. Thanks to Kobe University for this opportunity.

MIAD DA FU [from China]



Japan. I applied to Department of Architecture in Kobe University, which has a long history and has produced many talents. When I entered, I sometimes became nervous. However, I have had a happy school life thanks to friendly Japanese students and kind teachers & staffs. In the specialized subjects, I could touch the knowledge that I did not know so far and they were very stimulating. It is unforgettable how I was pleased when I designed my first architectural presentation with my ideas. At the same time, the experiments and simulations shown in the classes on structural & environmental engineering were very interesting. After I belonged to a laboratory at fourth

RESEARCH TOPIC



Vibration test with hydraulic damper (Study on structural control by Prof. Fujitani)



Experimental roof for surface cover technology of (Study on urban thermal environment by Prof. Moriyama)



Listening test in anechoic roon



ELIZABETH MALY [from USA] My home university, the University of Washington in Seattle, Washington, USA, has an exchange program with Kobe University. By taking part in this exchange program, I gained a very valuable experience of being a member of a laboratory in the architecture department of Kobe University. During my 18 months as a research student at Kobe University I had the opportunity to work closely with him and other colleagues in our lab on

collaborative research projects. Thanks to my professor, I felt welcomed into a very rewarding academic world, and have had so many rich learning experiences that I had no way of expecting before I came to Japan.

I was interested in architecture before coming to

grade, I took part in many seminars, discussions and investigations, and deepened my academic interests. Of course, not only study. Kobe University has many chances of exchanging with foreign students. I made friends with many persons. This is a very blessed environment to enlarge visions through touching other cultures. My four years in Kobe was very massive. I enter the master course of Kobe University to raise my technical knowledge more. Interesting classes, charming professors, and above all, fun of architecture which enables to express dreams as a shape... Don't you realize your dreams in Department of Architecture in Kobe University?

urban structure in Kobe University



Restoration model of Izumo Shrine (Study on shrine architecture by Assoc, Prof. Kuroda)

CIVIL ENGINEERING

NEW CIVIL ENGINEERING TOWARDS SAFETY AND SYMBIDSIS OF URBAN AND REGIONAL SYSTEMS

HTTP://WWW.SHIMIN.ENG.KOBE-U.AC.JP





C ivil Engineering aims at creating a safe society in harmony with the environment, through the construction and preservation of fundamental social facilities. Civil Engineering Education is about helping the creation of an environment of cities and territories safe to natural and social disasters, and living in symbiosis with

nature, through the preservation, lifetime management and revival of city facilities. We accept student's ambitious to become the pillars of public service demanded by our society, and we develop them into individuals with broad academic horizons and specialist knowledge, and high level practical skills.

EDUCATION

colving safety and environmental problems in urban and regional areas are common interests worldwide. "New civil engineering in the 21st century" focuses on various new engineering aspects while enjoying a wellbuilt and established base of civil engineering. The program also emphasizes on public participation and international cooperation.

Courses offered to the students in Undergraduate, Master's and Doctoral levels enable them to have deeper knowledge and understanding about the safety

STRUCTURE AND DIVISIONS

C ivil Engineering is a diverse academic field, and has supported the civil society ever since Roman times. In the core of the Curriculum are the Civil Engineering Subjects, complemented by Subjects dealing with environmental considerations, the status quo of public facilities reflecting public opinion, as well as the internationalization of design codes and standards.

The Department of Civil Engineering consists of the Human Safety and Security Engineering Lab and the

ROLE OF PUBLIC SERVICE

- 1)Safety and security: Save us from natural disaster such as earthquake and flood and provide safe and secure living environment
- 2) Natural symbiosis: Improve infrastructure symphonic with natural environment and succeed earth environment to future human being

study area covers a wide range in the fields of disaster prevention and mitigation, environmental assessment and protection, infrastructure planning and management and geotechnical and structural designs. Students, who would like to make their career in public services whether at global or local levels, are very welcome. Currently, we have more than 10 overseas students from China, Korea, India and other countries

and environmental aspects of the modern society. The

Environmental Symbiosis Engineering Lab. The Human Safety and Security Engineering Lab does teaching and research about urban safety against natural disasters and social disasters such as terrorism and accidents. The Environmental Symbiosis Engineering Lab does teaching and research about the creation of an environment of cities and territories living in symbiosis with nature, as well as the preservation, lifetime management and revival of city facilities.

3) Community collaboration: Create urban and regional space with great individuality involving public comments 4) International cooperation: Support developments of oversea society with infrastructure improvement and disaster relief



Field survey for saving humar lives from natural disaster

MESSAGES FROM INTERNATIONAL STUDENT

MINSU JUNG [Ph.D. Student, from Republic of Korea, 2008]



First of all, I would like to express my deepest thankfulness to Kobe University for bringing me into the world of profound learning. Some people said School days are said to be the happiest days of your life. The last three years I had been spent in Kobe University to get Doctoral degree was the most tough time as well as precious moment in my life because I can hold on my dream for future through school life in Kobe University. Kobe University always stayed

RESEARCH TOPIC

E ngineering community has long worked to build safe and reliable lifeline systems, that is, those systems necessary to provide electric power, natural gas, water and wastewater, and transportation facilities and services that are essential to the well being of the community served by these systems. Providing lifeline system function is especially important in assisting rapid recovery following natural hazards. Engineering approaches to limiting damage to lifeline systems from natural hazards have developed specifically for individual natural hazards and individual types of lifeline systems.

Division of Earthquake Disaster Mitigation Engineering has contributed to identifying lifeline system risks



Field surveys on lifeline damages





Risk management seminar for preventing damage spreading





SYMBIOSIS

Risk management seminar for preventing damage spreading

with me and helped me to concentrate on research so I can study unmindful of cares and worries. Today, I graduated and leaved Kobe University but I never forget the moment with Kobe University. Finally, I really appreciated my advisor professor Shibuya for his support and guidance. Without his patience and advice, this research would have never been achieved.

and implementing measures to improve earthquake performance of the systems. In this regards, several activities are carrying out as follows: performing field surveys on seismic damage of lifeline systems during each earthquake; elaboration and verification of underground conduit analysis; development of models and methods for reliability analysis of large networks and systems for business interruption analysis; emphasis on measures for lifesaving systems; implementation of an overall seismic mitigation evaluation considering disaster prevention investment in community, economy, and social activity according to function damage of lifelines.

> Seismic mitigation prioritization in lifeline systems

ELECTRICAL AND ELECTR ONICS ENGINEERING

HARDWARE AND SOFTWARE ENGINEERS/RESEARCHERS FOR HIGH INFORMATION SOCIETY



Experimental arrangement for new materials



Sputter deposition system

CONCEPT

LSI layout design of CAD system

n recent years, Electrical and Electronic Engineering/ Technology has been more expanding with a rapid advancement in all engineering disciplines which inherently embrace an ever-widening range of academic and professional programs. From a global point of view, the Department of Electrical and Electronic Engineering

basically offers the balanced interdisciplinary core subjects and studies on both education and research in the state-of-the-art scientific and technological fields of Physical Electronics, Computer and Information Engineering, and Functional Thin-Film Engineering.

EDUCATION

he characterized and professionalized education and research core courses in the department of electrical and electronic engineering are specifically classified into two balanced academic divisions; Physical Electronics and Computer and Information Engineering. Division of Physical Electronics offers the scientific and technological education as well as the interdisciplinary and frontier

STRUCTURE AND DIVISIONS

Physical Electronics Division covers the specialized education and sectionalized research on electromagnetic field and waves, solid-state physical engineering, quantum physics and electronics, electrical and electronic material science, semiconductor electronics, sensor devices, nanoelectronics, photonic devices, surface physics and electronics, superconducting physics and electronics, optics and optoelectronics, high-energy physics, plasma electronics, and bio-science and engineering in addition to such fundamentals as applied mathematics, physics, chemistry and mechanics.

research project works, which are mainly concerned with the sectionalized major education and research programs. Division of Computer and Information offers the scientific and technological education as well as the sophisticated hardware and software research project works which are associated with the sectionalized education and research programs.

Computer and Information Engineering Division includes the specialized education and sectionalized research on electric and electronic circuit theory, integrated circuit design and systems, computer and communication systems, wearable computing, ubiquitous and ad-hoc network, information network, information transmission, information theory, coding theory, data compression, digital broadcasting, information and network security, data structures and algorithms, graph theory, software design, image processing, control engineering, optimization theory, pattern recognition, fuzzy theory and neural networks, intelligent machines.

INTERNATIONAL PROGRAM

ccording to the academic exchange agreements Awith overseas universities and institutions, our department is conducting intensive exchanges for education and research. Every year, foreign students

RESEARCH TOPIC: DEVELOPMENT OF PLASMONICS (DIVISION OF PHYSICAL ELECTRONICS, MESOSCOPIC MATERIALS LABORATORY)

B eautiful colors of glass ornaments and stained glasses in churches are generated by metallic fine particles embedded in the glasses. Such coloring phenomena are due to the absorption of light by collective oscillation of free electrons in the fine particles, called surface plasmons. When metallic nanostructures are illuminated, surface plasmons are excited and giant electromagnetic fields are induced in the vicinity of the surface. Plasmonics utilizes such giant electromagnetic fields to realize high-performance optical devices including various sensors. In our laboratory, we are studying the enhancement of light emission from semiconductor nanocrystals and dye molecules in the presence of metallic nanostructures. The figures show the enhancement of photoluminescence from Rose Bengal molecules caused by gold particles.





Multi-slot antenna and microwave plasma generator

from Korea, Malaysia, etc. enrich the academic and international environment on campus. Some labs cooperate with research institutions of USA, Germany, New Zealand, Korea, England, France, etc.



MECHANICAL ENGINEERIN G

A CHALLENGE TO THE BREAKTHROUGH, "KOBEIS MONODUKURI" DOYA!!

HTTP://WWW.MECH.KOBE-U.AC.JP

CONCEPT

echanical engineering embraces very wide aspects from basic science to application engineering that have to do with fluid flow, heat and mass transfer, computational mechanics, solid mechanics, materials science, micro-machining, intelligent manufacturing, automatic control, system design, etc. The department

of mechanical engineering presents many of the basic disciplines that can be applied for industrial productions that may enrich human life with environmental friendship.

EDUCATION

ur educational goal is to train the students as to become the engineers who make their dreams come true. For this purpose, the curriculum is planned from basics aspects to applications. Educational programs are arranged from basics of engineering to advanced courses in engineering. Lectures in the

specialized research fields are also given. Students at the 4th grade study their graduation theses under the guidance of faculty staff. Currently, over 70% of undergraduate students proceed to the graduate school and continue their studies.

STRUCTURE AND DIVISIONS

he department of Mechanical Engineering was established in 1921, one of the oldest departments in the University. The department is producing many leading engineers in mechanical engineering. The department has three divisions: Thermo-fluid and Energy, Mechanics and Physics of Materials, Design and Manufacturing. Research programs are offered in 13 fields.

-DIVISION OF THERMO-FLUID AND ENERGY Towards effective use of energy and bettering the environment, education and research are conducted on elemental and system. Reliable thermo-fluid energy machinery and high efficiency energy conversion systems are being developed by theoretically, experimentally, and numerically investigating complex mechanisms governing thermo-fluid phenomena.

-DIVISION OF MECHANICS AND PHYSICS OF MATERIALS

The mission in this division is to promote research and education on multi-scaled analyses of structures, machine components and mechanics of solids, characterizations of mechanical, physical and chemical properties of materials, and formations of advanced materials by designing specific features of surfaces and

interfaces. The division consists of four laboratories of "solid mechanics", "fracture control engineering", "materials science" and "surface, interface and tribology".

-DIVISION OF DESIGN AND MANUFACTURING The target of the group is establishment of engineering capabilities required to develop continuous and powerful next generation social systems from the viewpoints of design, production, operation, and reuse of artifacts. The mission of the group is education and research in system design, system analysis, intelligent robots, control theory, emergent systems, and next generation production technology. We also focus on synthesis of total systems for a wide range of micro- and macro- phenomena in machine elements, mechanical systems, and social systems.

MASSAGE FROM INTERNATIONAL STUDENT



Choi JI SUN [Undergraduate student from Korea, 2007]

Studying in Kobe University brought me wonderful memories. I made my choice to study in Kobe University because of its internationality, and it turned out to be a right choice. Teachers and friends are very kind, so I could study with a peace of mind. There are tutors who support international students in their studies. When I was a freshman, the tutors were very helpful to me.

Kobe University has many circles and clubs. I enjoyed my participation in the glider club and met many people that I value very much. Here is a place that I could realize my long-thought dream. Now I' m in the fourth grade and doing research activities freely. I hope to continue on to the Master's program for higher education in this wonderful place.



Other research topics



RESEARCH TOPIC

-DIVISION OF THERMO-FLUID AND ENERGY: Figure 1 shows the Aeolian tone generated from a cylinder placed in a uniform flow. The detailed structure of the sound wave is clarified by direct numerical simulations of the unsteady motion of fluids using the lattice Boltzmann method.

-DIVISION OF MECHANICS AND PHYSICS OF MATERIALS:

Figure 2 shows the AP-FIM (Atom Probe Field Ion







Microscope) to observe individual surface atoms as well as their atomic masses. The design of carbon nanotube field emitter devices is one of the research targets.

-DIVISION OF DESIGN AND MANUFACTURING:

Figure 3 shows a robot "MOIRA2" to find injured

persons in disaster area and the carrying car "BENKEI." These robots are exhibited at 2005 Aichi-Expo.

CHEMICAL SCIENCE AND ENGINEERING

THE DEPARTMENT OF CHEMICAL SCIENCE AND ENGINEERING - HELPING THE DREAMS OF THE 21ST CENTURY COME TRUE HTTP://WWW.CX.KOBE-U.AC.JP

CONCEPT

he overall mission of the Department of Chemical Science and Engineering is to foster the next generation of researchers and engineers of chemical engineering on a global scale by education and research to meet the needs of industry and society in general. The research and educational activities in our

the microscopic and molecular level, addition of specific functionality to chemicals and materials, engineering applications of biofunctional materials and process development in industrial scale material production.

department cover the fields of fundamental science on

EDUCATION

n recent years, significant technological developments and innovations have resulted in rapid and marked changes in the way highly functionalized chemicals and materials are produced, as well as in the chemicals/ materials themselves. Thus, it is essential for the future chemical researcher to not only have a sound fundamental knowledge of chemistry, physics, and biology from an engineering viewpoint, but also to have the skills and ability to apply this knowledge with respect

STRUCTURE AND DIVISIONS

ur department consists of two divisions: The Division of Applied Chemistry and the Division of Chemical Engineering. Research/education within the Division of Applied Chemistry include generation of functionality of chemicals and materials and elucidation of mechanisms involved, as well as development of techniques for new material production from atomic/ molecular level to nano/meso/macro level to attain a wide range of functionality on a macroscopic level by accumulation of molecules into novel materials. Research/

INTERNATIONAL ACTIVITIES

he Department of Chemical Science and Engineering at Kobe University has played a leading role in the establishment of a world-wide academic and educational network of chemical scientists and engineers for global sustainability, focusing on production of novel materials and development of chemical production processes with reduced environmental impact. Several faculty members visited Christian-Albrechts University in Kiel (Germany) in

DIVISION OF APPLIED CHEMISTY

-CX-1 APPLIED PHYSICAL CHEMISTRY

Y. Ueda. K. Ishida. Y. Koshiba Advanced functional materials based on physical/analytical/ quantum chemistry. Preparation and characterization of organic thin films and inorganic fine



particles, basic research of molecular nano-technology and development of organic semiconductor lasers.

to a wide range of chemical products and processes, to be able to analyze and synthesize chemicals, and to design environmentally friendly chemical and biochemical systems. In this vein, the mission of the Department is to provide the students with the skills required to satisfy the needs of the chemical industry and the society in general as chemical researchers and engineers, with an emphasis on fundamental science, analysis, applications and creativity.

education in the Division of Chemical Engineering include development of useful materials and reaction catalysis, establishment of controlled processes involving reaction and mass transfer and development of new production processes based on the clarification of interaction between molecules, functionality of biomaterials and energy and mass transport phenomena. The ultimate goal is the development of new production processes with both high efficiency of material and energy and low environmental impact.

2006 as well as Texas University in Austin (U.S.A.) in 2007 in order to establish our collaboration with researchers at these universities. Additional related activities include the organization of an international workshop on Development of Novel Functional Materials and Production Processes with Reduced Environmental Impact in 2006, with participation by Asian and Australian scientists.

-CX-2 APPLIED INORGANIC CHEMISTRY S. Deki, M. Mizuhata, A. Kajinami, I. Ayabe

Structure/properties of highly concentrated solutions, analysis and application of heterophase effects. Preparation of metal nanoparticles and metal oxide thin films based on inorganic materials chemistry and electrochemistry.

-CX-3 APPLIED ORGANIC CHEMISTRY A. Mori, E. Okada, Y. Kamitori

Synthesis, reactions and structures of novel organic compounds and molecular orbital calculations. Synthesis and evaluation of biologically active compounds for medical and agrochemical purposes, and development of new functional heterocyclic compounds.

-CX-4 APPLIED POLYMER CHEMISTRY

T. Nishino, M. Kotera

Microstructure and mechanical, surface and thermal properties of polymeric materials towards production of high performance polymer materials and polymer composites.

-CX-5 ADVANCED ANALYTICAL CHEMISTRY

H. Nariai. H. Maki Synthetic methods, specific reactivity, structural specificity, surface physical properties, polyelectrolyte effects and hydrophobic



DIVISION OF CHEMICAL ENGINEERING

-CX-8 CATALYSIS AND CATALYTIC REACTION ENGINEERING

S. Nishiyama, Y. Ichihashi, N. Kumagai

Utilization and application of catalysis with regards to environmental/energy problems and industrial chemical processes. Selective oxidation, catalyst reduction and photocatalysis for energy/resources conservation.

-CX-9 TRANSPORT SCIENCE AND ENGINEERING

N. Ohmura, H. Imakoma

Elucidation and modeling of complex transport phenomena (fluid flow, heat and mass transfer) in chemical processes, as well as development of novel environmentally friendly chemical processes.

-CX-10 PROCESS SYSTEM ENGINEERING S. Matsuo, K. Nambara

Process Systems Engineering (PSE) aimed at development of methodology for sustainable production as a means of solving environmental problems, focusing on process control and chemometrics.

-CX-11 FLUID AND PARTICLE ENGINEERING H. Usui, H. Suzuki, Y. Komoda

Rheological characteristics of complex fluids such as non-Newtonian fluids, suspensions etc. Energy saving air-conditioning systems, highly efficient mixing systems and highly efficient functional thin films.





interactions in complex formation of phosphates for development of novel materials.

-CX-6 ADVANCED POLYMER COLLOIDS

M. Okubo, H. Minami, P. B. Zetterlund, T. Suzuki Preparation of intelligent polymer particles using environmentally friendly heterogeneous radical polymerization processes. Precise design of smart polymer particles based on colloid chemistry.

-CX-7 Advanced Molecular Chemistry T. Takeuchi, T. Hishiva

Design and synthesis of functional supramolecular materials by tailor-made molecular assembly using intra- and/or intermolecular interactions, which possess molecular recognition ability, catalytic activity, and other biomimetic functionalities.

-CX-12 BIOCHEMICAL ENGINEERING

H. Fukuda, A. Kondo, T. Fujiwara, C. Ogino, T. Tanaka Development of efficient bioprocesses using enzymes, antibodies, microbial, insect, and animal cells by

application of molecular biotechnology, enzyme engineering, industrial microbiology, cell culture engineering, and immobilized bioreactor technology.



-CX-13 BIOPROCESS ENGINEERING

H. Yamaji, T. Katsuda

Development of production/ separation processes based on biological functions, production methods of biofunctional materials in cell culture, bioremediation by use of microorganisms,



and utilization of biorecognition between biomolecules for purification and high sensitivity detection methods.

-CX-14 MATERIALS PROCESSING ENGINEERING

H. Matuyama, T. Maruyama, T. Sotani

Application of membrane-based separation technology to environmental protection and drinking-water production. Development of new separation techniques using molecular recognition of biomolecules.

COMPUTER SCIENCE AND S YSTEMS ENGINEERING

REALIZATION OF INTELLECTUALIZED NOVEL INFORMATION SYSTEMS -TOWARD AN ACTUALIZATION OF CREATI

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Computer and Systems Laboratory and Practice

CONCEPT

epartment of Computer Science and Systems Engineering is devoted to such themes as "pursuit of creative process through intelligence" and "creation of the next generation intellectualized information systems". The department aims at one of the newest academic disciplines by integrating not only the fields of computer science and information technology, but also various scientific and engineering fields including electronics, mechanical engineering, life science, social science, and so on. The multi-disciplinary nature of computer science and systems engineering offers an exciting challenge for students thinking of embarking on a career in almost all scientific and engineering fields as well as information

EDUCATION

he course structure aims at the wide and deep exploration of education and research relating to computer science and systems engineering. The undergraduate program structure of the department is carefully designed for students to study multi-disciplinary major courses as well as liberal arts. Freshman students start fundamental courses of computer science and systems engineering, such as mathematics, physics, logic circuits, and computer engineering. Sophomore students study both the fundamental and advanced courses including programming languages, spectrum analysis,



technology fields in advanced and more computerized society.

and system analysis. Further junior students mainly take advanced such as database systems, sensing technology, and robotics. All senior students are engaged in research projects. Four-year Bachelor's degrees are awarded to undergraduate students. Master's and Doctoral degrees are awarded to students who have successfully completed the required subjects of an authorized graduate program. We have accepted many foreign students and young researchers from more than twenty countries around the world.

MASSAGE FROM INTERNATIONAL STUDENT



Hi, my name is Augusto Foronda and I am from

AUGUSTO FORONDA [2nd grade of the Doctoral Course]

Brazil. I came to Japan in 2005 to study in a doctoral course in Kobe University and it has been a wonderful experience to live in Japan. I could improve the knowledge in my area of research and at the same time I had the chance to study the Japanese language and to learn about Japanese culture, which allowed me to understand much more

about Japan. The life in Japan is really interesting and everyday day is a new opportunity to learn something different. Particularly, I like the Japanese organized life style. For example, they have the more complex and punctual train system in the world, which is amazing. I think my experience here will help me a lot in my future in terms of personal and professional life.

STRUCTURE AND DIVISIONS

-THE DIVISION OF INFORMATICS

The Division of Informatics is responsible for education and research on computer science, information processing, and applied informatics. The current research activities cover a wide range of subjects, including information media, programming language, intelligent systems, artificial intelligence, intelligent software, mathematical information science, and art media engineering.



-THE DIVISION OF SYSTEMS DESIGN

The Division of Systems Design is for education and research on analysis and synthesis of intelligent systems and problem-solving processes. The research projects focus on various issues, including systems planning, systems design, control systems theory, systems informatics, systems structure, mathematics of systems, and advanced mechatronics.





THE DIVISION OF INFORMATION SYSTEMS The Division of Information Systems is responsible for education and research on core technologies for advanced information processing and intellectualized information systems. The research projects cover a wide range of subjects, including intelligent robotics, wireless communication, information photonics, computer systems, and processor architecture.



