

### National Institute of Technology, Kagawa College [Kagawa KOSEN]

355 Chokushi-cho, Takamatsu, Kagawa 761-8058 Japan TEL +81-87-869-3811

Takamatsu Campus 355 Chokushi-cho, Takamatsu, Kagawa 761-8058 Japan TEL +81-87-869-3811 551 Kohda, Takuma-cho, Mitoyo, Kagawa 769-1192 Japan TEL +81-875-83-8506 Takuma Campus

URL http://www.kagawa-nct.ac.jp/



To develop highly qualified engineers that have a rich sense of humanity and creativity.

To contribute to the wealth and advancement of our local community as a driving force of intellectual and technological progress.

> National Institute of Technology, Kagawa College [Kagawa KOSEN]



AND OF TECHNOLOOD TO 2015 TO College Bulletin

National Institute of Technology, Kagawa College was established by the incorporation and reorganization of Takamatsu National College of Technology and Takuma National College of Technology together having the long history, on October 1st, 2009. We have seven departments at the General Education Courses and two majors at the Advanced Course. We have improved and advanced the facilities and the equipment for both education and research. We are enhancing the cooperative relationship between Takamatsu Campus and Takuma Campus, and are providing favorable environments for the education. At the General Education Course, we arrange a curriculum composed of liberal education, professional education, and practical technology education for 5 years, to develop highly qualified engineers that have a rich sense of humanity and creativity, with a competency to deal with the rapid progress of science and engineering and with a harmony of intelligence,



technology and spirit. Students can attain as high competency as those at a university by the study for 5 years. Moreover, students can obtain the same degree of bachelor as those who graduate a university by the study for 2 years at the Advanced Course after graduation from the General Education Course.

At Takamatsu Campus, We have Industrial and Systems Engineering Division composed of Department of Mechanical Engineering, Department of Electrical and Computer Engineering, Department of Electro-Mechanical Systems Engineering and Department of Civil Engineering for the General Education Courses. We are cultivating engineers active in the region of creative manufacturing. At Takuma Campus, We have Electronics, Information and Communication Engineering Division composed of Department of Communication Network Engineering, Department of Electronic Systems Engineering, and Department of Information Engineering for the General Education Courses. We are cultivating engineers active in the region of advanced electronics, information and communication. We have Advance Course in Industrial and Systems Engineering at Takamatsu Campus and Advanced Course in Electronics, Information and Communication Engineering at Takuma Campus. At both Advanced Course, We are supplying educations full of intellectual stimulation and international sense, and are enhancing the Science Seminar.

We have Dormitories, Counseling Room and Career Support Center to support students' welfare, study, employment and career shaping through such as internship. We have International Exchange Promotion office to develop international exchange and collaboration in education and research, and Human Resource Development Office to develop local industries and enhance the partnership with them. We are making Academic Exchange Agreements with Overseas Universities, sending students abroad for international internship or student exchange, and promoting Cooperative Research with the Private Sector eagerly. We contribute to the wealth and advancement of our local community as a driving force of intellectual and technological progress.

Both of our campuses' long histories have seen over 19,000 students graduate and secure meaningful employment in the private sector, municipal and prefectural governmental offices, universities, and research institutes. The graduates of the colleges have displayed and exemplified an impressive work ethic and job performance, leading to high praise and evaluations given by employers. We constantly embark on new challenges and develop ourselves, inheriting the excellent traditions.

W. YM

Takeshi Yao President

# **Mission and Educational Goals**

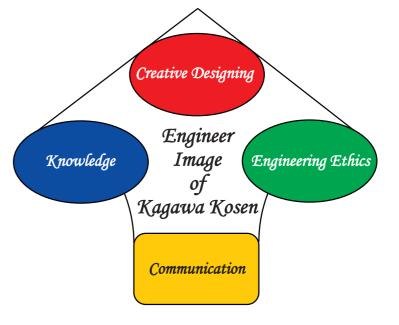
### Mission of National Institute of Technology, Kagawa College : NITKC (Kagawa KOSEN)

- $\bigcirc$  To develop highly gualified engineers that have a rich sense of humanity and creativity.
- $\bigcirc$  To contribute to the wealth and advancement of our local community as a driving force of intellectual and technological progress.

#### Educational Goals

Kagawa KOSEN's educational objectives, based upon a detailed and comprehensive curriculum, are as follows:  $\diamond$  To broaden students' minds, with the aim that they will become engineers of the future that will play

- an instrumental role in a sustainable society.
- changing times.
- problems of society.
- $\diamond$  To develop the students' intellect, as well as communication skills, in order to prepare them for international career paths.



 $\diamond$  To train students to have the technological Knowledge and applicable skills for coping with these fast

 $\diamond$  To train students to be engineers of the future, who can apply their imagination to tackle the complex

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Department of Electronic Systems Engineering	
Department of Information Engineering	
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## History

## $\Diamond$ History

Takamatsu National College of Technology	Takuma National College of Technology
(Takamatsu KOSEN) * Takamatsu Campus of Kagawa KOSEN	(Takuma Denpa KOSEN) * Takuma Campus of Kagawa KOSE
	October, Kanritsu Musen Densin Koshujo Osaka Branch (National 1943 School of Radio Telecommunications, Osaka Branch) was established at Yata-mura, Naka-Kawachi-gun, Osaka
	<ul> <li>April, Kanritsu Musen Densin Koshujo Osaka Branch was renamed</li> <li>1945 Kanritsu Osaka Musen Densin Koshujo (Osaka National School of Radio Telecommunications).</li> </ul>
	April, Kanritsu Osaka Musen Densin Koshujo was relocated in 1949 Takuma-cho, Mitoyo-gun, Kagawa, and was renamed Takuma Denpa High School (Takuma Radio Technical High School ).
<ul> <li>April, 1962</li> <li>Takamatsu National College of Technology(Takamatsu KOSEN) was established. It consisted of two departments: the Department of Mechanical Engineering and the Department of Electrical Engineer- ing.</li> </ul>	
April, Takamatsu KOSEN was restructured into three departments: the Department of Mechanical Engineering, the Department of Electrical Engineering and the Department of Civil Engineering.	
	<ul> <li>April, Takuma Denpa High School became Takuma National College</li> <li>of Technology (Takuma Denpa KOSEN). It consisted of one department of Radio Engineering.</li> </ul>
	<ul> <li>April, Takuma Denpa KOSEN was restructured into two departments:</li> <li>1976 the Department of Radio Engineering and the Department of Electronics.</li> </ul>
	<ul> <li>April, Takuma Denpa KOSEN was restructured into three departments:</li> <li>the Department of Engineering, the Department of Electronics and the Department of Information Engineering.</li> </ul>
	<ul> <li>April, Takuma Denpa KOSEN was restructured into four departments:</li> <li>1985 the Department of Radio Engineering, the Department of Electronics, the Department of Information Engineering and the Department of Control Engineering.</li> </ul>
April, Takamatsu KOSEN was restructured into four departments: the Department of Mechanical Engineering, the Department of Electrical Engineering, the Department of Electro-Mechanical Systems Engineering and the Department of Civil Engineering.	April, The Department of Radio Engineering was renamed the 1989 Department of Telecommunication Technology.
April, 1999 Advanced Engineering Course was established.	
April, Takamatsu KOSEN consisted of four departments: the Department of Mechanical Engineering, the Department of Electrical and Computer Engineering, the Department of Electro-Mechanical Systems Engineering and the Department of Civil Engineering.	
April, Takamatsu KOSEN was reorganized and was affiliated with the 2004 Institute of National Colleges of Technology.	April,Takuma Denpa KOSEN was reorganized and was affiliated with2004the Institute of National Colleges of Technology. Advanced Engineering Course was established.
In October, 2009, Takamatsu KOSEN and Takuma KOSEI of Technology, Kagawa College (Kagawa KOSEN). Tw Industrial and Systems Division (Takamatsu Campus) an (Tekuma Campus)	vo divisions including seven departments were set up:
(Takuma Campus). The departments are as follows: Dpt of Mechanical Engine Electro-Mechanical Systems Engineering and Dpt of Civil Network Engineering, Dpt of Electronic Systems Engineeri The Faculty of Advanced Engineering was also set up: A Advanced Course in Electronics, Information and Commun	Engineering (Takamatsu Campus); Dpt of Communication ng and Dpt of Information Engineering (Takuma Campus). Advanced Course in Industrial and Systems Engineering;

Dr. Masashi Kamon was appointed as the first president of Kagawa KOSEN.

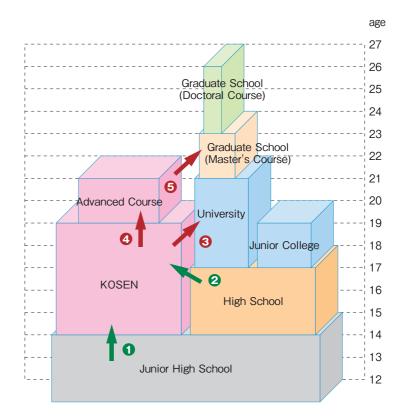
In January, 2013, a commemoration ceremony was held to celebrate the 50th anniversary of the Takamatsu Campus and the 70th anniversary of the Takuma Campus.

In April, 2014, Dr. Takeshi Yao was appointed as the second president of Kagawa KOSEN.

## School System of Japan

## **♦** Chart of Organization

	Takamatsu Campus	Dracidant Ai	de • Dean of Educational Affairs		Vice Deep of Education	nal Affaire	spirtant Doop of Educational Affairs
	VICE President		de • Dean of Student Affairs		Vice Dean of Education Vice Dean of Student		issistant Dean of Educational Affairs Issistant Dean of Student Affairs
			de • Dean of Dormitory Affairs		Vice Dean of Dormitor		ssistant Dean of Dormitory Affairs
			Dean of General Education		VICE Dealt of Domilicon		Ssistant Dean of Donnitory Analis
			: Dean of Mechanical Engineering				
			Dean of Electrical and Computer Engir	neerina			
			Dean of Electro-Mechanical Systems E				
			: Dean of Civil Engineering	<u>g</u> g			
		(Educational Rese					
	-	<ul> <li>Director of L</li> </ul>					
		[Student Counsel	ing Institution]				
	L	Chief of Stud	dent Counseling Institution				
	Takuma Campus						
	Vice President		de • Dean of Educational Affairs		Vice Dean of Education		ssistant Dean of Educational Affairs
			de • Dean of Student Affairs		Vice Dean of Student		ssistant Dean of Student Affairs
			de • Dean of Dormitory Affairs		Vice Dean of Dormitor	у Affairs	issistant Dean of Dormitory Affairs
			Dean of General Education				
			Dean of Communication Network Eng				
President	-		: Dean of Electronic Systems Engineerin : Dean of Information Engineering	Ig			
		[Educational Rese Director of L					
		[Student Counseli	,				
	L	Chief of Stud	dent Counseling Institution				
	[Organization of Whole Campus]						
	[organization of whole campus]	Chief of Adv	ranced Course		Chief of Advanced Co	urse in Industrial and S	ystems Engineering
					Chief of Advanced Co	urse in Electronics,Info	rmation and Communication Engineering
		(Educational Rese	arch Institution) working and Computing Service Cente	-	Deputy Chief		
		(Promotional Acti		I	Deputy Chief		
	-		nager of Human Resources Developme	nt Office -	Deputy Manager	Director of Collabora	ative Education Center of Emerging Technology
		[Promotional Acti	vity Center]			Director of Cooperat	tive Research & Development Center
	-		de • Chief of General Affairs and Promo	tional Activity	Deputy Chief		
		President Ai	de • Chief of International Affairs Office	-	Deputy Chief		
		Website Adr	ministrator				
			arch Support Center]				
	-		echnical Education Support Center	-	Deputy Director	Chief of Takamats	u Campus
		[Student Counseli			L	Chief of Takuma C	ampus
		<ul> <li>Chief of Care</li> </ul>	eer Support Center		Deputy Chief		
	[Organization of Admini	-testing Duranul					
	Director of Administ		Head of General Affairs Section	Assistant Head	Chief of General Admin	istration Section	
				Officer	Chief of Personnel and L		ction
					Chief of Research Coop	*	
			-	Assistant Head	Chief of General Affairs	Section	
					Chief of Area Cooperati	ion Section	
				Officer(General Af	fairs and Information)		
			Head of Administration Section	Assistant Head	Chief of Financial Affair		
					Chief of Contract Section	n	
				Assistant Head	Chief of Accounting		
			Head of College Affairs Section	Assistant Head	Chief of College Affairs	Section	
			Head of College Artails Section	Assistant Lean	Chief of Entrance Exam		
					<ul> <li>Chief of Student Suppo</li> </ul>		
					Chief of Student Livelih		
						Source of the section	
			Head of Student Affairs Section	Assistant Head	Chief of Educational Aff	fairs Section	
					Chief of Student Affairs	Section	
					Chief of Dormitory Affa		
					Official (Academic Infor	mation)	
			Head of Facility Section	Assistant Head	Chief of Construction S	ection	
			inclusion racing section	rossantricud	Chief of Electrical Section		
					<ul> <li>Chief of Equipment Sector</li> </ul>		
					Chief of Facility Mainter		
					Official (Facility Section)		
					in the state of section,	-	



- 1 Junior high school graduates are eligible to enroll at a KOSEN.
- 2 High school graduates are eligible to enroll at a KOSEN as transfer students.
- **3** KOSEN graduates are eligible to enroll in a university as transfer students.
- **4** KOSEN graduates are eligible to enroll in an advanced course.
- **6** KOSEN Advanced Course graduates are eligible to enroll in a university graduate program.

#### KOSEN System

KOSEN system — five-year engineering education from 15-year old — was established in 1961, in response to a strong demand from industrial sector to foster engineers who sustain Japanese high economic growth at that time.

#### **Characteristics of KOSEN Education** Upon Admission

- We admit junior high school graduates
- We enable students to engage in career and life planning at a young age

### In School

#### Practical and Innovative Education

- We develop an curriculum in the liberal arts and professional studies
- We provide experimental and practical training, internship and coop education
- We provide programs accredited by JABEE
- We offer international exchange opportunities

#### Personality Development

- We offer student dormitories and extracurricular activities
- We hold Robot, Programming, Design and Speech contests • We organize annual all KOSEN Athletics Competition
- **Upon Graduation**
- We help students to find various career paths
- We produce engineers with extensive practical creativity

• We have highly qualified teaching staff (more than 80% of specialized subject teachers have doctoral degree)

# Departments

## - General Education

This division offers various arts and science subjects including physical education aimed at cultivating students with wide-ranging knowledge and basic understanding required for the study of engineering. Our curriculum covers that of senior high schools putting stress on mathematics and science, and also offers some courses at the college level to the senior students.

#### **OFulltime Academic Staff in Department of General Education**

#### [Takamatsu Campus]

Title	Name	Research Field
	HASEGAWA, Takashi	Japanese Literature of War
Prof.	KONO, Michihiro	Criminal Law & Procedure Constitution
	IDEBUCHI, Mikiro	Methodologies of Teaching English
	TANIGUCHI, Hiroaki	Algebraic Combinatorics
	SAKAMOTO, Tomotsugu	History of Ancient Chinese Thoughts
FIUI.	TAKAHASHI, Hiroaki	Topology Mathematical Physics
	OKANO, Hiroshi	Inorganic Materials Chemistry Thin Film Engineering
	TAGUCHI, Jun	History of Educational Thought
	NAKASE, Mikio	Sports Methodology Coach Methodology
	SAWADA, Isao	Statistical Mechanics Condensed Matter Theory
	ITO,Kikuyo	Cross-language Speech Perception
	HASHIMOTO,Norifumi	Synthetic Organic Chemistry Catalytic Chemistry
	YOSHIZAWA, Kousei	Theory of Sports Training
Associate Prof.	NAGAHARA,Shinobu	Modern Literature
	YODA, Jun	European History
	SATO, Fumitoshi	Algebraic Geometry
	ENDO, Tomoki	Computational Physics, Theoretical Nuclear Physics
	ICHIKAWA, Ken	English Education
Assistant Prof.	HOSHINO, Ayumu	Mathematical Physics, Representation Theory
	KAWABATA, Mitsuko	Anthropology of Music, Jewish Studies

#### [Takuma Campus]

Title	Name	Research Field			
Prof.	TORIGOE, Hidetomo	Teaching Methodologies Corpus Linguistics			
	IDEBUCHI, Mikiro	Methodologies of Teaching English			
	MINAMI, Takayuki	Differential Equation Hamiltonian System			
1101.	UCHIDA, Yuriko	Japanese History Career Education Women's Studies			
	TOJO, Toshiki	Japanese Literature			
	ARIMA, Hirotoshi	Methodology of Coaching			
	HATA, Nobuoki	British Literature			
	FUJIHARA, Nobuhiro	Japanese Literature			
	HASHIMOTO, Ryuta	Number Theory Continued Fraction			
Associate	UEHARA, Shigenori	Geometric Topology General Topology			
Prof.	MORI, Kazunori	English Teaching, CALL			
	MIZUNO, Chizuko	English Education			
	YOKOYAMA, Manabu	Methodology of Sports Training Health Education			
	NAKAMURA, Tokuhiro	Atmospheric Chemistry			
Assistant Prof.	HASEBE, Kazuki	Theoretical Physics			
	YAMAOKA, Kenjiro	Political Theory Refugee Studies			
	KUROKI, Tsunehide	Theoretical Physics			











#### ♦Curriculum

Compulsory Subject
Japanese I-II
Geography
History I, II
Civics I, II
Fundamental MathematicsI-II
Differential and Integral Calculus I, II
Mathematical Analysis
Physics I, I
Chemistry I, I
Health and Physical Education I-IV
Art I, II
English IA, IB
English IA, IB
English IIA, IIB
Language Seminar
Science Seminar
Career Support

[Takamatsu Campus]		[Takum
Elective Subject	Credits	
Japanese Literature I	2	Japane
Human Science I-II	6	Social S
Social Science I-II	6	Topics
Environmental Chemistry	2	Mathen
Principles of Physical Chemistry	2	Health
Health and Physical Education V	1	English
English IV, V	5	Chinese
Language Seminar II	2	Overse
Overseas English Program	1	Teachir

#### **⊘Main Experiment Facilities**

	Room	Main Equipment
Takamatsu Campus	Physics Laboratory	High Vacuum Pump, Spectroscope, Induction Coil
Takamatsu Campus	Chemical Laboratory	Sputtering System, PH Meter, Draft Chamber with Scrubber
	Language Laboratory	46booths, 46Computers, e-learning
	Edilgddge Edboldtoly	40000tris, 4000mputers, elearning
	conbudge caperatory	40000ths, 4000mpaters, eleanning
	Room	Addoodes, Addoompaters, ereanning Main Equipment
Takuma Campus		
Takuma Campus	Room	Main Equipment

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Learning English Grammar at Mult

#### Takuma Campus]

Elective Subject	Credits
Japanese Literature I	2
Social Science I, I	4
Topics in Natural Science	1
Mathematics Seminar I-II	З
Health and Physical Education V	1
English for Specific Purposes I, I	4
Chinese I, I	4
Overseas English Program	1
Teaching Support Activity	1

## Department of Mechanical Engineering

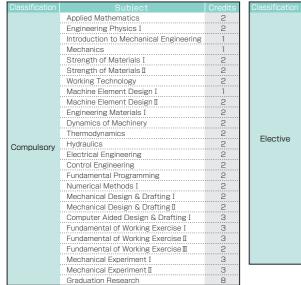
Mechanical engineers play a vital role in product design, development and manufacturing of industrial products in the modern industrial world as well as new challenges in developing countries.

Our educational program is designed to develop creative mechanical engineers who will excel in the industrial world and fulfill their personal desire to leave a legacy of successful accomplishments.

#### **◇Fulltime Academic Staff**

Title	Name	Research Field
Prof.	OKADA, Kenji	Reliability Engineering Strength and Fracture of Materials
	KIHARA, Shigefumi	Applied Mechanics
	IWATA, Hiromu	Vibration Dynamics Solar Car
F101.	HASHIMOTO, Yoshio	Computational Dynamics
	YAMASAKI, Yojiro	Robotics Motion Control
	FUKUI, Satoshi	Fatigue of Materials Design Engineering
	KOJIMA,Takafumi	Thermodynamics Heat Transfer Engineering
Associate	YOSHINAGA, Shinichi	Control Engineering
Prof.	JODAI, Yoshifumi	Fluids Engineering
	ITO, Tsutomu	Materials physics Welding Science
Assistant Prof.	TAKAHASHI, Yoichi	Precision Machining Forming Processes

#### ♦Curriculum



	Heat fransier Engineering	
	Fluids Dynamics I	
	Electronic Engineering	
	Computer Engineering	
	Mechanism	
	Systems Engineering I	
lective	Numerical Methods I	
lective	Computational Mechanics	
	Computer Aided Design & Drafting I	
	Technical English I	
	Technical English II	
	Strength & Fracture of Materials	
	Heat Engines	
	Systems Engineering I	
	Fluids Dynamics I	
	Special Lectures on Engineering I	
	Special Lectures on Engineering I	
	Job Training	
	Introduction to Engineering Frontier	

Mathematical Methods in Engineering

Engineering Physics I

Theory of Elasticity Engineering Materials I

Strength of Materials II

#### **Main Experiment Facilities**

Room	Main Equipment
Machining Lab.	Ultra-Precision Machine, Wire-Cut EDM Systems, Hobbing Machine, Precision Lathe
Measuring Lab.	Non-Contact 3D Measuring Machine, Surface Finishing Indicator, Micro Hardness Tester
Material Strength Lab.	Universal Materials Testing Machine, Fatigue Testing Machine, Torsion Tester, Charpy Impact Tester
Metallographic Lab.	Optical Microscope, Electric Furnace, Hardness Tester, SPD Equipment
Sharing Lab.	Hydraulic Servo-Mechanical Fatigue Testing Machine
Dynamics Lab.	Vibration System, Vibration Meter, FFT Analyzer, Signal Analyzer
Wind Tunnel Lab.	Low Turbulent Wind Tunnel (40 m/s). Hot Wire Anemometer
Thermal Engineering Lab.	Heat Exchanger Testing Equipment
Internal Combustion Engine Lab.	Internal Combustion Engine Performance Testing Equipment, Engine Combustion Analysis System, Exhaust Gas Analyzer
Control Lab.	DC Servo Motor Testing System, BASIC FA Study Kits, Pocketcomputer Controlled AGV Testing System
Electronics Lab.	Oscilloscope, Digital Multi-Meter, Function Generator, LCR Meter
Training Factory	Lathe, Machining Center, CNC Lathe, Milling Machine, Grinding Machine, Crucible Furnace, Welding Equipment, Hydraulic Press
Drafting Room, CAD Room	Drafting Desks and Machines, Sketching Goods and Models, CAD System

## - Department of Electrical and Computer Engineering

The department of electrical and computer engineering intends to educate the engineers who can contribute to the high technological society. For this purpose, the educational curriculum is designed to include the fundamental of mathematics and physics in the first stage, and applied technologies are programmed in the next stage. Furthermore, teamwork and cooperativeness, which are necessary in the social works, will be introduced in the various experiments and circuit design. Major parts of these subjects consist of the technologies of the embedded system.

#### **◇Fulltime Academic Staff**

Title	Name	Research F						
	HARAZONO, Masahiro	Acoustical Information Engineering Digital Signal Processing						
	HONDA, Michitaka	Imaging Technology, Medical Radiation Physics and Technology						
Prof.	SHIKAMA, Tomokazu	Semiconductor Physics Thin Films Engineering						
	SHIGETA, Kazuhiro	Information and Communication Engineering Educational Technology						
	TSUJI, Masatoshi	Electronic Circuit Microwave Engineering						
	URUSHIHARA, Shiro	Motion Control						
Associate Prof.	TARAO, Hiroo	Electromagnetic Compatibility Bioelectromagnetics						
	MURAKAMI, Yukikazu	Educational Technology						
Assistant Prof.	KAKIMOTO, Takeshi	Software Development Management						
Research Associate	HINAMOTO, Yoichi	Adaptive Signal Processing						
	YAMAMOTO, Masashi	Material Science						

#### ♦Curriculum

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		Credits	Classification	
	Engineering Mathematics I	2		Engineerin
	Engineering Mathematics I	2		Physics
	Fundamentals of Physics	2		Electroma
	Electric Fundamental-Mathematics	2		Electrical
	Electrical Fundamentals I	2		Electronic
	Electrical Fundamentals I	2		Introductio
	Electromagnetics I and Exercise	3		Algorithms
	Electrical Circuits I and Exercise	3		Study Gui
	Electrical Physics	1		Communic
	Fundamentals of Electronics	2		Control So
	Fundamentals of Measurement Engineering	2		Digital Ins
	Fundamentals of Computer Mathematics	1	Elective	Informatio
	Logic Circuits	1		Statistica
lsory	Fundamentals of Information Processing I	2		Signal Pro
	Fundamentals of Information Processing I	2		Electric ar
	Fundamentals of Information Processing II	2		Interface
	Operating Systems	2		Electronic
	Information and communication network	2		Multimedi
	Computer Hardware	2		Electronic
	Energy Engineering in Environment	2		Computer
	Practice of Elementary Creation I	2		Job Trainii
	Practice of Elementary Creation I	2		Special Le
	Experiments of Electronics and Computer Science I	3		Special Le
	Experiments of Electronics and Computer Science II	3		Introducti
	Applied Experiments on Electronics and Computer Science	3		
	Graduation Research	6		
	Special Practice	1		
	Design of Circuit	2		

#### **⊘Main Experiment Facilities**

Room	Main Equipment
asurement Control Lab.	SCR Inverter, Electric Machine Training System, He-Ne Laser, Optical Power
ectronics and Information Lab.	Curvetracer, Oscilloscope, Logic Analyzer, Microwave Measuring System, Print Board Fabrication System, Optical Communication/Optical Fiber Communication System
iterials Lab.	Lock-in Amplifier, Ultra High Resistance Meter, Liquid Nitrogen Cryostat, Thickness Meter, Green Laser
wer Electronics Lab.	Hopping Robot, Linear Motor Positioning System, Inverted Pendulum System, Image Processing System
ectromagnetic Compatibility Lab.	Uniform Magnetic Field Exposure System, Magnetic Field Measurement Device, Work Station
ectronics Lab.	Oscilloscope, Function Generator, DC Power supply, Q Meter, Digital Frequency Counter, Pulse Circuit Trainer
oustical Information Lab.	Anechoic Chamber, Acoustic Measuring System, Ultrasound Detector
mputer and Communication Engineering Lab.	Logical Circuit Experiment Apparatus, Semiconductor Element Experiment Apparatus, Arithmetic Circuit Trainer, AD/DA Converter Trainer, Logic Analyzer





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Subject	Credits
ing Mathematics II	2
	2
agnetics II and Exercise	3
I Circuits I and Exercise	3
ics Circuits I and Exercise	4
tion of Semiconductor Physics	
ns	2
uide for Technical English	2
ication Engineering	2
Science	2
strumentation and Control	2
ion and Coding Science	2
al Data Processing	2
rocessing	0
and Electronic Materials	2
9	2
ics Circuit I and Exercise	2
dia Engineering	0
ic Device	2
er Simulation	
ning	1
_ecture I	1
_ecture I	1
tion to Engineering Frontier	1







Remote Teaching over the Internet



Presentation of Circuit Design

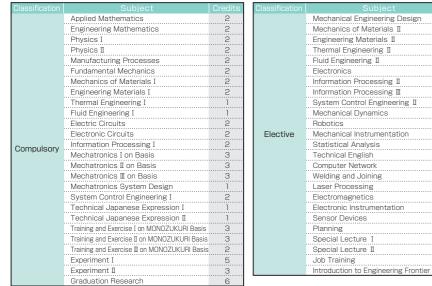
## Department of Electro-Mechanical Systems Engineering

The department has a curriculum to educate students standing on mechatronics which is a combined engineering field that consists of mechanics, electronics, control engineering and computer science. The students are expected to have the role of not only simple manufacturing but also design & development, quality management, maintenance & inspection and so on in the production process.

#### **◇Fulltime Academic Staff**

Title	Name	Research Field
	HIRAOKA, Nobuaki	Mechatronics
Prof.	SOGO, Hiroyuki	Kinematics Robotics
FIUI.	KURIHARA, Yoshitake	Signal Processing
	TOKUNAGA, Hidekazu	Conputational Learning Theory Web Mining
	YURA, Satoshi	Control Engineering Motion Control
Associate	SOUMA, Takeshi	Energy Engineering Energy Materials
Prof.	SHIMASAKI, Shin-ichi	Electromagnetic Processing of Materials
	HENMI, Tomohiro	Control Engineering
Assistant Prof.	SHOBAKO, Shinichiro	Welding & Joining Arc Plasma
Research	ISHII, Kohei	Biomedical Engineering
Associate	TSUMORI, Nobuhiro	Nanophotonics Near-field Optics

#### ♦Curriculum



Subject	Credits
Mechanical Engineering Design	2
Mechanics of Materials I	2
Engineering Materials I	1
Thermal Engineering I	1
Fluid Engineering II	1
Electronics	2
Information Processing I	2
Information Processing II	2
System Control Engineering I	2
Mechanical Dynamics	2
Robotics	2
Mechanical Instrumentation	1
Statistical Analysis	2
Technical English	2
Computer Network	2
Welding and Joining	2
Laser Processing	2
Electromagnetics	0
Electronic Instrumentation	2
Sensor Devices	0
Planning	2
Special Lecture I	1
Special Lecture I	1
Job Training	1

1

#### **OMain Experiment Facilities**

Room	
Engineer Material Lab.	Optical Microscope, Electric Furnace, Video Microscope, Vickers Brinell and Rockwell Hardness Tester, SPD Equipment
Mechanics of Material Lab.	300kN Universal Testing Machine, Torsion Tester Charpy Impact Testing Machine, Rotating Bending Fatigue Testing Machine
Thermal Engineering Lab.	High-frequency Induction Furnace, Electrometer, Laser Displacement Sensor, High-speed Camera, Heat Exchanger Testing Equipment
Electronics Lab./Electronic Control Lab	Oscilloscope. Digital Multi-Meter, Function Generator, Electronic Voltmeter, Universal Counter, LCR Meter, PCB-CAD/CAM
CAD Room	Video Projector, Personal Computer, 3D CAD
Exercise Room	Video Projector, Personal Computer, 3D CAD
Control Lab.	Temperature Control Testing System, Water Level Control Testing System
FA Training Factory	3D Modeling Machine, Vertical Milling Machine, Drilling Machine, Band Sawing Machine
Measuring Lab.	Air Micrometer, Micro-Indicator, Tool Micrometer Microscope
Training Factory	Engine Lathe, Drilling Machine, Universal Milling Machine Universal Band Sawing Machine, Machining Center, Welders









## - Department of Civil Engineering

The department of civil engineering is working on fostering engineers who can contribute to the construction of infrastructure supporting safe and comfortable lives of citizens and the maintenance of the natural environment which is also deeply related to the construction of infrastructure.

#### **◇Fulltime Academic Staff**

Title	Name	Research F
	DOI, Masanobu	Slope Stability Engineering Computational Mechanics
Dref	KOTAKE, Nozomu	Geotechnical Engineering Geoenvironmental Engineering
Prof.	MIZUKOSHI, Mutsumi	Materials Engineering Concrete Engineering
	MUKAITANI, Mitsuhiko	Geotechnical Engineering Irrigation Pond Science
	TSURUMOTO, Yoshihiro	Hydromechanics Engineering Coastal Engineering
Associate	MIYAZAKI, Kosuke	Infrastructure Planning Transportation Planning
Prof.	TAGAWA, Tadashi	Sanitary Engineering Environmental Engineering
	HAYASHI, Kazuhiko	Concrete Engineering Maintenance Engineering
Assistant Prof.	IMAOKA, Yoshiko	Urban Planning Welfare Engineering
	TAKAHASHI, Naoki	Hydraulic Engineering Ecological Engineering
Research Associate	SUZUKI, Mariko	Soilmechanics Agricultural Engineering
	MATSUBARA, Saburo	Surveying Materials Engineering

#### ♦Curriculum

		Credits			
	Physics I	2			Physics I
	Applied Mathematics I	2			Applied M
	Introduction to Civil Engineering	2			Introducti
	Basic Drawing	1			Structural
	Fundamental Mechanics I, II	4			Soil Mech
	Structural Mechanics I	3			Hydromed
	Structural Materials	2			Construct
	Structural Design	3			Hydrology
	Basis of Disaster Prevention Engineering	2			Coastal E
	Regional Disaster Prevention Engineering	1		Elective	Environme
	Elements of Environmental Engineering	1			Environme
mpulsory	Environmental Engineering I	2			Applied Co
	Regional Environmental Engineering	ngineering 1		Surveying	
	Foundamental Information Processing	2			Structural
	Advanced Computer Engineering	2			Geotechn
	Surveying I, I	2			Informatio
	Urban and Regional Planning	2			Structure
	Regional Urban and Regional Planning	1			Advanced
	Practices in Civil Engineering I, II, II	3			Job Traini
	Engineering Study with Creative Training	2			Special Le
	Experiment and Practice in Civil Engineering I, I	4			Special Le
	Civil Experiments and Exercises I, II, II	6			Introducti
	Civil Engineering Design and Draft I, I	4			
	Graduation Research	6			

#### **OMain Experiment Facilities**

Structural Engineering Lab.	Static and dynamic loading machine. Beam testing machines Multi-channel data recorder. Servo-type 1D&2D shaking table
Materials Engineering Lab.	Universal material testing machine (Cap. of 3000kN). Strain cor testing apparatuses for various concrete, Concrete curing water
Hydraulic Engineering Lab.	Three dimensional channel, Movable channels, Wave making cha
Geotechnical Engineering Lab.	Automatic consolidation testing apparatus, Universal compress Large-scaled universal direct shear apparatus, Falling head perm
Environmental Engineering Lab.	Total organic carbon analyzer, Ion chromatograph, Gas chromato
Environmental Engineering Lab.	Cyclic Triaxial test apparatus, Constant temperature ovens
Equipment room	Global Navigation Satellite Systems, Geographic Information Systems
	Electro-optical distance meters(4set), Plane table, Pranimeters,
Drafting room	Drafting table angle boards(45set), Plate girder model, Truss bri


Π	1
Mathematics I	2
tion to Electrical Engineering	1
al Mechanics II	2
hanics	2
echanics	0
ction Method	0
SV.	1
Engineering	1
nental Engineering II	2
nental Impact Assessment	2
Computer Engineering	2
g II	2
al Engineering	0
nical Engineering	2
ion Processing Engineering	2
es in Architecture	2
d Environmental Engineering	2
ning	1
_ecture I	1
_ecture I	1
tion to Engineering Frontier	1









es. Digital static strain meters. Dynamic strain meters. Universal counter. Jles, 2D soil tanks
ontrol universal testing machine, Revolving-blade concrete mixer, Center hole oil jacks and oil pumps, er bath, Data loggers, Digital displacement meters, Electronic balances(9seats)
hannels, Shape-created weir, Pipe line with a Venturi meter, Wave height indicators, Various recorders
ssion testing apparatus, Cyclic triaxial compression test apparatus, rmeability test apparatus, B-type viscometer, High speed camera, Various soil testing apparatus
tograph, CHN analyzer, Autoclaves, Centrifuge, Ultra pure water system, Acid rain collect,
system, Remote Sensing, Total station, Digital type theodolites(4set), Automatic levels,
s, Stereoscope
nridge model. Various drafting instruments

## - Department of Communication Network Engineering

Both modern industry and society rely heavily on telecommunication systems, which are also known as a "neural network" of society. The constituents of the systems are electric wires, optical fibers and electromagnetic waves, as well as a great deal of computers. The aim of the Department of Communication Network Engineering is to foster competent engineers in this promising field of telecommunications. The curriculum is organized so that students can qualify for various national licenses such as an On-the-Ground I-Category Special Radio Operator, or a First-Class Technical Radio Operator for On-the-Ground Services.

♦Curriculum

Applied Mathematics Probability and Statistics Applied Physics I Applied Physics I Electric Engineering

#### **◇Fulltime Academic Staff**

Title	Name	Research Field
	FUKUNAGA, Tetsuya	Information Theory Communication Theory
	SHIOZAWA, Takahiro	Optical Electronics Microwave Photonics
Prof.	SAWADA, Shiro	Theoretical Physics
1 101.	INOUE, Tadaaki	Communications Measurement
	ISSHIKI, Hiromi	Biomedical Engineering
	YOKOUCHI, Takashi	Applied Technology of Optical Fiber
	MANABE, Katsuya	Electromagnetic Theory Microwave Theory and Techniques
	TAKAJO, Hideyuki	Educational Technology Ubiquitous Computing
Associate Prof.	SHOHON, Toshiyuki	Coding Theory Communication Engineering
	ONO, Akira	Telecommunication Electronic Circuit
	KUMEKAWA, Kazuya	Computer Networks
	SHIRAISHI, Keiichi	Computer Algebra e-Learning
Assistant Prof.	KUSAMA, Yusuke	Microwave Engineering
	KAWAKUBO, Takashi	Field Emission Surface Physics
Research Associate	ARAI, Shintaro	Nonlinear Circuits and Systems Intelligent Transport Systems









#### **⊘**Main Experiment Facilities

Electromagnetic Ane EMI(Electromagnetic Interference)Receiver, CVCF(Constant-voltage Constant Sampling Oscilloscope, Spectrum Analyzer, Logic Scope Analog Circuit Lab. Digital Circuit Lab Pulse Pattern Generator, Error Rate Detector, Optical Spectrum Analyzer, Optical Amplifier, Optical Power Meter, Wavelength Variable Optical Attenuator nformation Network Exercise Room Training Equipments for LAN (Local Area Network) Integration (Routers, Switching Hubs, Wireless LAN Access Points, Personal Computers) Applied Electromagnetic Wave Lab. Radar, Satellite Compass, AIS (Automatic Identification System) Receiver, Radio Direction Measurement Equipment, Radio Transmitter, Radio Receiver, Microwave Fundamental Me

Fle

	Information Processing I	2
	Information Processing I	2
	Digital Circuits I	2
	Electric Circuits I	2
	Electric Circuits I	2
ulsorv	Electromagnetics I	2
uisoiy	Electromagnetics II	2
	Electronic Circuits I	2
	Electronic Circuits II	2
	Electric and Electronic Measurements I	2
	Electronics	2
	Seminar on Communication Engineering	4
	Creative Experiments and Practices	4
	Experiments and Practices	2
	Experiments in Communication Network Engineering	2
	Experiments in Communication Engineering I	3
	Experiments in Communication Engineering II	4
	Graduation Research	12
	Information Processing II	2
	Logic Circuit Design	2
	Electric and Electronic Measurements I	2 2
	Wireless Communication Engineering I	
	Wireless Communication Engineering I	2
	Antennas and Propagation	2
	Antenna Engineering	2
	Communication System A	2
	Communication System B	2
	Telecommunications Law I	1
	Telecommunications Law I	1
	Network Theory	2
	Computer Networks I	2
	Computer Networks I	2
	Information Theory	2
	Radiowave Engineering	1
tive	Seminar on Radio Engineering	2
	Data Communications	2
	Control Engineering	2
	Semiconductor Electronics	2
	Digital Image Processing	2
	Signal Processing	2
	Optoelectronics	2
	Mathematics for Information Science	2
	Information Security	2
	Network Programming	2
	Computer Science	2
	System Engineering	2
	Environment and Human Society	1
	Factory Training	1
	Special Lectures I	1
	Special Lectures I	]
	Introduction to Engineering Frontier	1

equency)Power Supply, BiLog Antenna, Artificial Mains Network, Absorbing Clamp, Turi

## - Department of Electronic Systems Engineering

In light of the advancements of mechatronics and Information technologies, there is a large demand for engineers in the development and integration of computer science, robotic systems and telecommunications. The program in our department is designed to offer students many options from various fields such as hardware, software, electronics and communication technologies. We combine theory and practical application in the same course which provides practical laboratory experience. Our goal is to cultivate ingenuity and innovation in our students and provide them with all skills necessary for a successful career in the electronics industry.

#### **◇**Fulltime Academic Staff

<b>T</b> 141 -	Nama	Desservels Field
Title	Name	Research Field
	MURAKAMI, Junichi	Instrument Engineering
Prof	MISAKI, Yukinori	Robot Engineering
FIOI.	NAGAOKA, Shiro	Integrated Circuits
	YAGI, Masakazu	Solid State Physics
	MIKAWA, Michio	Solid State Physics
Associate Prof.	JOHNSTON, Robert Weston	Computer Science
	TSUKIMOTO, Isao	Electronic Circuits
	TENZOU, Hideki	Energy Engineering
Assistant Prof.	MORIMUNE, Taichiro	Solid State Physics
	SHIMIZU, Tomo	Semiconductor Devices
Research Associate	FUJII, Hiroyuki	Robot Engineering







#### **⊘**Main Experiment Facilities

Comm Digital Compu Circuit Physic Optoe Electro

non Lab.	Liquid Crysta, Tunable Filters, Cooled CCD Camera, Multispect
Il Circuit Lab.	Equipment of Supply Current Test to Detect Lead Opens of (
uter Engineering Lab.	Oscilloscope, Radiation Detector, Analog Waveform Process
t Design Lab.	Laser Surface Processing System, Photoelectron Yield Spec
cal properties Lab.	Laser Displacement Sensor, Optical Element(polarizer, quart
electronics Lab.	Diffraction-grating monochromator(f=1m, 30cm, 20cm), He-
onics Lab.	Infrared Thermal Camera, 3D Printer, 3D Scanner, Tabletop M

#### ♦Curriculum

Classification	Subject	
	Applied Mathematics	2
	Probability and Statistics	2
	Applied Physics I	2
	Applied Physics I	2
	Electric Engineering	2
	Electric Circuits I	2
	Electric Circuits I	2
	Electromagnetics I	2
	Electromagnetics I	2
	Flootropico	2
	Electronic Circuits I	2
Compulsory	Semiconductor Electronics I	2
	D' di LO' di L	2
	Digital Circuits I	
	Digital Circuits I	2
	Information Processing I	
	Seminar in Electronic Systems Engineering I	4
	Seminar in Electronic Systems Engineering I	
	Creative Experiments and Practices	
	Experiments and Practicals	2
	Experiments in Information Engineering	
	Experiments in Electronic Engineering I	
	Experiments in Electronic Engineering I	
	Graduation Research	12
	Solidstate Physics	2
	Network Theory	2
	Electronic Circuits II	2
	Semiconductor Electronics II	2
	Electronic Measurements	2
	Physics of Semiconductors	2
	Electronic Device Engineering	2
	Optical Electronics	2
	Electrical and Electronic Materials	2
	Control Engineering I	2
	Control Engineering I	2
	Sequence Control	2
	Robot Engineering I	2
Elective	Robot Engineering I	2
	Sensor Electronics	2
	Information System I	2
	Communication System A	2
	Information Processing I	2
	Data Communications	2
		2
	Image Engineering Operations Research	2
	Maahapiaal Dupamiaa	2
	Machanical Dynamics	2
	System Engineering	2
	Environment and Human Society	
	Factory Training	
	Special Lectures I	1
	Special Lectures I	1
	Introduction to Engineering Frontier	1

Main Equipment
ctral Imaging System. Hyperspectral Camera
f CMOS ICs. Oscilloscope, Current Probe, QuartusII(synthesis tool), ModelSim (simulation tool)
sing System
ectroscopy, Interferometric Film Thickness Measurement System, Vacuum Evaporator
rter-wave plate)
e-Cd laser, Ar ion laser,Cryogenic refrigerator
Microscope, Non-Mydriatic Auto Fundus Camera, Pulse Oximeter

## - Department of Information Engineering

The department offers students an opportunity to acquire the theoretical fundamentals of computer science, and learn how to apply this practical knowledge to everyday problems. The department aims to educate the students to be able to perform tasks such as the following:

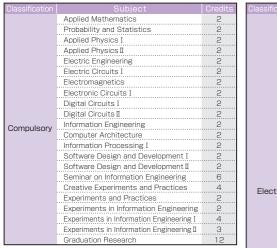
-Information system development

-Application development and integration, such as sound and image processing, computer networking.

#### **○**Fulltime Academic Staff

		Research Field
	MATSUSHITA, Hiroaki	Design and Analysis of Algorithms
MIYATAKE, Akiy	FUKUMA, Kazumi	Physics
	MIYATAKE, Akiyoshi	Educational System Engineering
Prof.	TOKUNAGA, Shuichi	Image Processing
	KAWATA, Susumu	Programming Instruction
	SAWARAME, Masashi	Information Systems
	KAWATA, Jun	Plasma Surface Interaction
Associate	KANAZAWA, Keizo	Image Processing
Prof.	KONDOH, Yuji	Computer Algebra
	OKUYAMA, Shingo	Algebraic Topology
	KAWAZOME, Hayato	Plasma Spectroscopy
Assistant Prof.	SASAYAMA, Manabu	Information Retrieval Machine Translation
	OKUMURA, Noriyuki	Natural Language Processing Intelligent Information Processing
Research Associate	SUZUKI, Hiroshi	Cooperative Conveyance Control

#### ♦Curriculum



ation	Subject	Credits
	Mathematics for Information Science	2
	Numerical Analysis	2
	Communication Theory	2
	Electric Circuits II	
	Semiconductor Electronics	
	Digital Signal Processing	
	System Engineering	2
	Automatic Control	2
	Automaton Theory	2
	Data Structures and Algorithms	2
	Programming Language	2
	Operations Research	2
	System Programming	2
	System Software	2
	Human Interface	1
	Compiler	2
	Information System I	2
ve	Information System I	2
	Knowledge Engineering I	2
	Knowledge Engineering I	2
	Digital Image Processing	2
	Database Management System	2
	Telecommunication System I	2
	Telecommunication System I	2
	Computer Networks I	2
	Computer Networks II	2
	Information Security	2
	Technical English	1
	Information Science I	1
	Information Science I	2
	Environment and Human Society	1
	Factory Training	1
	Special Lectures I	1
	Special Lectures I	1
	Introduction to Engineering Frontier	1

#### **⊘**Main Experiment Facilities

Room	Main Equipment	
Control Circuit Lab.	3D Input/Output Device(3D Scanner, 3D Milling machine) 3D CAD/CAM software	
Electric Lab.	Educational design and prototyping platform, LabVIEW, Electronic Circuit Simulator	
Network Lab.	Experiment equipments for network skill acquisition(Router,L2,L3 switch)	
NLP Lab.	The server for analyzing Big Data	
ICT Lac.	203.2cm diagonal screen size Integrated Touch Display	

# Faculty of Advanced Engineering(Bachelor's Degree Program)

The Faculty of Advanced Engineering at Kagawa KOSEN aims to develop analytical, problem-solving skills as well as research ability of students so that they become practical and creative engineers who will play important roles in various industries, and contribute to the regional economy and society through collaborative projects. To accomplish this goal, the Faculty of Advanced Engineering is comprised of the Courses in Industrial and Systems Engineering Program at the Takamatsu Campus, and the Course in Electronics, Information and Communication Engineering Program at the Takuma Campus.

#### Educational Objectives

The educational objectives of the Faculty of Advanced Engineering at Kagawa KOSEN are:

- ♦ Students will acquire highly specialist knowledge in their engineering fields and develop analytical skills by attending advanced lectures and proceeding their thesis research.
- ♦ Students will acquire broad knowledge and problem-solving skills from practical experience in other related fields to play leading roles in interdisciplinary areas.
- ♦ Students will learn ethical issues and responsibilities as engineers through collaborative researches with local educational organizations and companies.
- $\diamond$  Students will acquire global viewpoints and communication skills in Japanese and English, by participating in workshops and scientific conferences inside and outside of the college.

Course	Title	Name	,
	Prof.	OKADA, Kenji	Department of
Industrial and Systems	1101.	SHIGETA, Kazuhiro	Department of
Engineering	Associate Prof.	HENMI, Tomohiro	Department of
	Prof.	MUKAITANI, Mitsuhiko	Department of
Electronics,		INOUE, Tadaaki	Department of
Information and Communication	Prof.	MURAKAMI, Junichi	Department of
Engineering		MATSUSHITA, Hiroaki	Department of













Additional Post
of Mechanical Engineering
of Electrical and Computer Engineering
f Electro-Mechanical Systems Engineering
of Civil Engineering
of Communication Network Engineering
of Electronic Systems Engineering
of Information Engineering

### Advanced Course in Industrial and Systems Engineering (Takamatsu Campus)

This course has four sub-courses to educate students to be practical engineers with problem-solving skills and the creativity to develop technologies.

#### Mechanical Engineering Course

This course is for future mechanical engineers with problem-solving skills and original creativity.

#### Electrical and Computer Engineering Course

This course is for future electrical engineers, electronic engineers, computer engineers and researchers.

#### Electro-Mechanical Systems Engineering Course

This course is for future mechatronics engineers with well-founded skills who contribute to the human happiness and welfare.

#### **Civil Engineering Course**

This course is for future civil engineers with knowledge of anti-seismic, disaster prevention recycling, and environmental preservation techniques.

Eng. S of EC

#### ◇Curriculum

Cla	assification	Subject	Credits
-iberal Arts	Compulsory	Management Theory TOEIC Preparation	0
Libera	Elective	Jurisprudence Reading of Literary works	2
	Compulsory	Engineer Ethics Topics in Mathematics I	0
Engineering Basic	Elective	Modern Physics Intellectual Property Rights English for Technical Purpose Topics in Mathematics II Physical Chemistry Analytic Chemistry Applied Physics Introduction to Civil Engineering Overseas English Program	2 2 2 2 2 2 2 2 2 2 2 2 1
Subjects	Compulsory	Experiments and Practicals I Experiments and Practicals I Thesis Research I Thesis Research I	6
Core Eng. Subj	Elective	Seminar I Seminar I Special Lectures Internship I Internship II Internship II Internship II	2 2 1



sis using Motion Capture



Atmospheric Pressure Cold Plasma Generator

		Greans
Elective	Internal Combustion Engines Computational Mechanics Elasticity and Plasticity	2 2 2
2.000.00	Advanced Strength and Fracture of Materials	2
	Matrix Vibration Analysis	2
	Reliability Engineering	2
	Electromagnetic Compatibility	2
	Modern Control Theory	2
	Energy Conversion Engineering	2
	Project Management Theory	2
	Solid State Electronics	2
	Integrated Circuits	2
	Optical Electronics	2
Elective	Semiconductor Physics	2
	Digital Technologies	2
	Telecommunication System Engineering	2
	Information and Communication Engineering	2
	Microwave Engineering	2
	Digital Signal Processing	2
	Acoustical Information Engineering	2
	Image Processing Engineering	2
	Advanced Heat Transfer	2
	Advanced Dynamics	2
	Optimization Theory	2
	Advanced Computer Processing	2
Elective	Advanced Joining Technologies	2
	Advanced Energy Engineering	2
	Advanced Control Engineering I	2
	Advanced Control Engineering I	2
	Mechatronics	2
	Structural Design I in Civil Engineering	2
	Structural Design II in Civil Engineering	2
	Prevention of Natural Disasters I	2
	Environmental Disaster Prevention Engineering I	2
	Advanced Hydromechanics	2
	Environmental Surveying	2
Elective	Environmental Ethics and Management	2
LIECTIVE	Continum Mechanics	2
	Advanced Structural Materials	2
	Computational Analysis in Civil Engineering	2
	Civil Mathematical Planning	2
	Information Technology and Systems	2
	Introduction to Civil Engineering	2
	Seminars on Civil Engineering	2
		_

ME Course…Mechanical Engineering Course EC Course…Electrical and Computer Engineering Course MS Course…Electro-Mechanical Systems Engineering Course CV Course…Civil Engineering Course

### - Advanced Course in Electronics, Information and Communication Engineering (Takuma Campus)

This course has two sub-courses to educate students to be practical, highly sophisticated engineers with knowledge of originality in electronics, information and communication engineering.

#### Electronics and Information Engineering Course

This course is an educational program of engineers who follow the standards of JABEE (Japan Accreditation Board for Engineering Education).

### Electronics, Information and Communication Engineering Vocational Course

This is the course in which students can be intent on the achievement of technology and expertise.

#### ♦Curriculum

CI	assification	Subject	Credits	Classific	cation	Subject	Credits
Liberal Arts	Compulsory	Communicative English I	2			Thesis Research I	6
bera	Flootius	Communicative English I	2	Cor	Compulsory	Thesis Research I	4
	Elective	Advanced Japanese Literature	2			Experiments and Exercise I	4
sic	Compulsory	Engineer Ethics				Experiments and Exercise I	ь
ä		Advanced Physical Science	2			Quantum Mechanics	2
Engineering Basic		Topics Applied Mathematics	2	tts		Introduction to Information Technology	2
lee	Elective	Intellectual Property	2	Subjects		Digital Signal Processing	2
ngi		English for Engineers	2	qn		Applied Electromagnetics	2
Ē		Engineering Mathematics	2			Graph Theory	2
				Special		Information Networks	2
				be		Specialized Electronic Circuits	2
					Industrial Instrument Engineering	2	
						System Control Engineering	2
				E		Algorithms and Data Structures	2
				8		Multi-Media Engineering	2
						Image Processing	2
						Internship I	1
						Internship II	2
						Internship II	4
						Internship IV	6
						Communication Engineering	2
			1	Elective		Radio and Light Wave Engineering	2
			ů		ective	Optical Communications	2
				00		Specialized Radio Engineering	2
				ts		Applied Solid State Physics	2
				Subjects of ES	ective	Integrated Electronics	2
				Sul		Digital Control Engineering	2
				ts		Object Oriented Programming	2
			20.00	Subjects of IT	ective	Applied Network Programming	2
			ŭ	Set.		Database Design	2





tive Research Experiments

Patents Awarded to Students

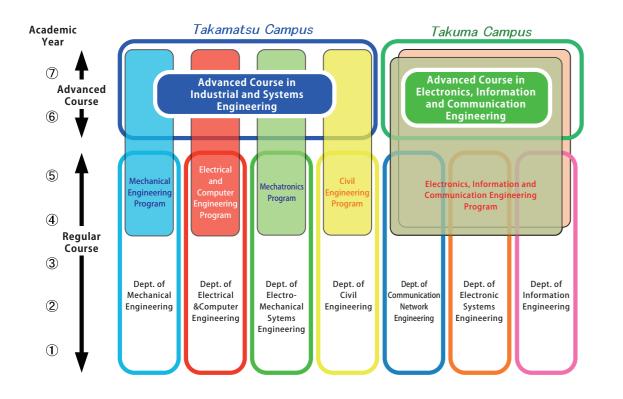
CN…Communication Network

ES…Electronic Systems

IT…Information

# **Engineering Education Programs**

The Advanced Course in Kagawa KOSEN is based on five education programs, which consist of Mechanical Engineering, Electrical and Computer Engineering, Mechatronics, Civil Engineering, Electronics, Information and Communication Engineering<sup>1</sup>) programs to improve the qualification and quality of engineering education. Programs are designed as the steps for students to get the gualification of Professional Engineer (P.E.). Those who have finished the advanced course and education program and passed the primary examination of P.E. are gualified to become engineers that work on domestic or international stages.



#### Evaluation and Accreditation

The education programs of Takamatsu Campus and Takuma Campus in Kagawa KOSEN have been accredited as appropriate education systems and programs for college of technology by NIAD-UE<sup>2</sup>) (National Institution for Academic Degrees and University Evaluation) since 2007. And four programs of Takamatsu Campus have been accredited by JABEE<sup>3)</sup>(Japan Accreditation Board for Engineering Education) since 2005 and 2006.

- 1) Electronics, Information and Communications Engineering program has two courses, and one is an educational program of engineers who follow the standards of JABEE, and other one is the course in which students can be intent on the achievement of technology and expertise.
- 2) The organization to accredit and evaluate the university, junior college and college of technology education programs and to assure the quality of education and research as Japanese higher education system.
- 3) An accreditation system as third party that can evaluate whether engineering education programs conducted by Japanese institutes of higher education such as university reach the expected levels.

## International Affairs

### **Academic Exchange Agreement with Overseas Institutions**

University / Faculty	Country / Region	Since
Dongyang Mirae University (DMU)	South Korea	Aug. 2005
Danang University of Technology (DUT)	Vietnam	Jun. 2009
Cheng Shiu University (CSU)	Taiwan (R.O.C.)	Dec. 2009
College of Engineering, Seoul National University (SNU)	South Korea	Jun. 2010
Universiti Teknologi MARA (UiTM)	Malaysia	Aug. 2010
Christchurch Polytechnic Institute of Technology (CPIT)	New Zealand	Jun. 2012
University of Caen Basse-Normandie	France	Jul. 2013
Rajamangala University of Technology Thanyaburi (RMUTT)	Thailand	Aug. 2014
Thai-Nichi Institute of Technology (TNI)	Thailand	Mar. 2015

### ◇Organization of International Symposiums/Seminar (2011-2014)

- May 2014.
- Japan, Jul. 2011and Oct. 2013.
- ◇"Malaysia-Japan Civil and Environmental Engineering Symposium 2013," Shah Alam, Malaysia, Mar. 2013.
- Alam, Malaysia, Mar. 2014 and Feb. 2015.

### International Exchange and Academic Activities (2011-2014)

- ♦ Exhibition by NITKC students at the Korea Electronics Show with DMU, Oct. 2010, Oct. 2012 and Oct. 2014.
- ♦ International internship at local offices of Japanese firms; in Thailand (2009), Philippines (2010, 2012), China (2011 and 2013), Indonesia (2012), Hong Kong (2013), Singapore (2013), Taiwan (2013) and U.S. (2013).
- ◇ "Engineering Class in English" by Visiting Professors from overseas; at Dept. of Civil Eng. (Oct. 2010), Dept. of (Oct. 2013).
- ♦ Student exchange to Advanced Course of NITKC, from UiTM (Jul. to Oct. 2011) and from CSU (Jul. to Aug. 2014).

### ◇International Students at NITKC

# Number of International Students Entering Mid-course/Advanced course of NITKC in Each School Year

Country School Year	Bangladesh	Brazil	Cambodia	China	Colombia	India	Indonesia	Kenya	Korea	Lao PDR	Malaysia	Mongolia	Philippines	Sri Lanka	Thailand	Uganda	Viet Nam	Pakistan	Total
2015									(2)	1		1						1	5
2014							2				2								4
2013											1					1			2
2012											2				1				З
2011			1				1				З								5
1985~2010	7	1	З	5	1	1	10	1	2	8	64	6	9	7	9	1	11		146
Total	7	1	4	5	1	1	13	1	4	9	72	7	9	7	10	2	11	1	165

◇ "International Conference on Nanoscience, Nanotechnology and Nanoengineering (IC-NET)," Shah

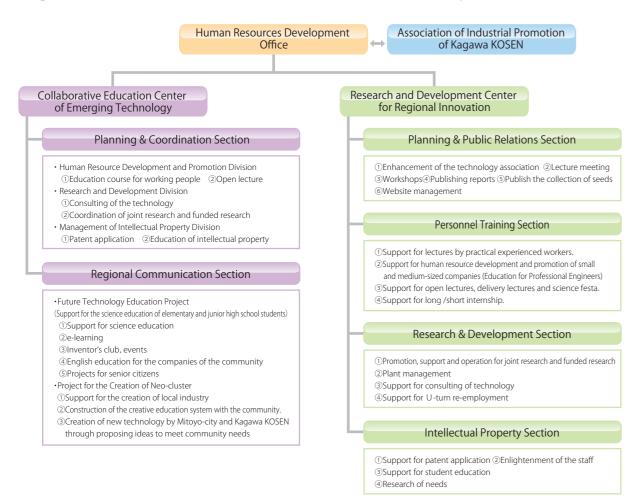
Mechanical Eng. (Jan. 2011), Dept. of Electrical and Computer Eng. (Sep. 2011), Dept. of Communication and Network Eng. (Jan. 2013), Dept. of Civil Eng. (Jun. 2013), Dept. of Civil Eng. (Oct. 2013) and all Departments

 $\diamond$  Research exchange with CSU and UiTM, Mar. 2011, Mar. 2012, Mar. 2013, Mar. 2014, Sep. 2014 and Mar. 2015.

():Advanced course

## Human Resources Development Office

### **Organization Chart of Human Resources Development Office**



### ♦ Activities of Academic-industrial Alliance

#### Association of Industrial Promotion of Kagawa KOSEN

#### Established on 28 August, 2009.

Purpose:

We utilize our knowledge, materials and human resources. We would like to develop the local industries and enhance the partnership with them, through the many operations such as exchanging technologies and information. We would like to contribute to the promotion of the education and research in Kagawa KOSEN

Description of business

Promotion of technology development by the academic-industrial alliance. Development of local industries. Lecture meeting about technologies, lecture class, Workshop, Publish the information report, Consulting on technologies, Exchange information, Support for education of company workers, Promotion support projects of cooperative research, Internship, Recruiting fairs, Collaborative education, Promotion of education and research of Kagawa KOSEN etc.

#### Shikoku KOSEN Center for Innovative Technologies

#### Purpose:

Anan, Kagawa, Niihama, Yuge and Kouchi KOSENs utilize the potentials of the colleges and aspects of the Shikoku-area, and spread out the activities of the academic-industrial alliance to contribute to the stimulation and promotion of the local area. Business outline

1. Department of the creation of innovation

Matching between the needs and the technology seeds of KOSENs in Shikoku-area. Consulting the technologies. Activities of academic-industrial alliance such as joint research.

2. Department of the Intellectual Property

- Management and education of Intellectual Property in coalition for KOSENs in Shikoku-area. 3. Department of coalition for KOSENs in Shikoku-area.
- Other activities to achieve the purpose of the center.

## Research

### **♦** Grants-in-Aid for Scientific Reserch

Abelian quotient vs Non-Abelian quotient

Study on Visualization of Electromagnetic Waves and Its Real Time Three Dimensiona The development of learning simulator of classic Japanese literature

LED Visible Light Communication System Using Portable Illumination Apparatus for L Studies of fluoroscopic image processing and assessment for skin-dose reduction in x Digitalize the implicit knowledge of skilled baseball player by three demension motio An experimental study of corporate female human development designing long-tern Development of Electric Injection Molding Machine using High-speed Estimated Injection Aseismic reinforcement and erosion control method for soil structures using materials Study on Measurement Method and Analysis Method of the Skill Work Solar Assist Battery

Development of methods for quality evaluation of actual concrete structures by surfa Fabrication of mono-sized silicon sphere and controlling silicon crystallization by simu An educational tool to visualize biological effects after irradiation on a human body b Study on higher dimensional dual hyperovals and related functions on finite fields Training program development for RF design engineers

A "Product Design" Theme Based Approach to Teaching English for Engineers

Relaxation analysis of Electrode Material for Secondary Lithium ion Batteries Washout mechanisms of bridges by great tsunami and validation methodology of co Quality attainment management system of concrete structures in revival road Development of an AR Chart Tool for Understanding Invisible Physical Phenomena Development of innovative ability with re-cycle energy teaching materials for eleme

Number of Researches 22, Total Funds 40,884,000Yen

### **Commissioned Reseach**

Development of FBG Sensor Device Kagawa KOSEN Collaborations with Mitovo-city Number of Researches 2, Total Funds 1,200,000Yen

### **Cooperative Research with the Private Sector**

Study on Next Generation Imaging Technologies Motivational Homework Management System Studies of new detection and real-time processing methods on x-ray diagnostic syste Promotion of production area of vegetables by Visualization of cultivation technology Research of agricultural remote sensing by hyperspectral camera Development of input assistant interface for severely disabled people Study on effect of ELF magnetic fields on humans Development of a Waste Treatment Plant for Scrap of Covered Wire A theoretical approach of the optimized process on X-ray photon-counting detection Study on the event "Niocho machizukuri " Development Research on Communication Network Techniques for Wireless Distribu Development of semiconductor devices for Energy conversion Seminar on local transport plan for cross-regional vision Solution of High Temperature Deformation Properties for Flameproof Magnesium Allo A study on performance tuning technique of Open Source Software Study on service level of public transport using transport and socio-economic indicate Analysis and Detection of LED Light Affected by Channel in Visible Light Communicat Research on utilization of Aji Stone waste as geomaterial for liquefaction countermeat

Development of Teaching Materials for Fundamental Electrical and Electronics Experi Study on Spining Process Simulation

Study of Disaster Mitigate Technology for Overhead Traveling Crane 6 another researches

Number of Researches 27, Total Funds 7,238,920Yen

### Other Competitive Funds and Grants

Innovation of Sewage Treatment Technology for Agricultural Reuse in Arid Region Soils recovered from disaster debris - Characterization, standardization, and strategic Spread to the whole country field of low-cost sensor system with the information inp by building a common database and information sharing system National college cooperation universe human resource development projects toward Study on mileage improvement of the eco-car Study on the utilization of the manganese slag as fineaggregate for concrete Improvement of the migration environment on weir with the portable fishway Development of non-destructive evaluation technique of covercrete quality on unde Seismic Characteristics of Dry Masonry PCa Concrete Block Structures Improving again Development of durability diagnostic method focusing on water absorption of concre

Construction of material design guideline for aluminum alloy excellent in hot workab Study on transgranular deformation controlled superplastic-like behavior in intermet 2 another researches

Number of Researches 14, Total Funds 20,987,885Yen

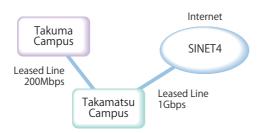
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inst Small and Middle Scale Pond's Dikes
rete slab subjected to fatigue loading
pility
tallic compounds

### **Over Service Center**

### Network Infrastructure

A dedicated line with 200Mbps is connected between the two campuses. The campuses have a dedicated connection with 1Gbps to the scientific information network (SINET).



Network Between Two Campuses

#### Computing Service

### **OTakamatsu Campus**

Automatically-recoverable computers are installed in the facilities and are used for education on computer literacy and academic research. 47 client computers for the first training room; 50 client computers for the second training room; 18 client computers for the third training room; and 54 client computers for the multimedia room.



Automatically-recoverable computers are installed in two Seminar Rooms, Cyber Lab, Advanced Information Lab, and the Information Media Lab, and are used for education on computer literacy and academic research. All of the students can take advantage of the internet using e-mail and WWW.

### **⊘**Human Resources Development Office

This office consists of the Collaborative Education Center of Emerging Technology and the Cooperative Research & Development Center. Each center has many laboratories and a lot of equipment. These are used for students' experiment programs, the experiments for the graduation thesis of the associate degree, the cooperative research, and the commissioned research. The equipment is as follows: RF magnetron sputtering system; Plasma CVD; Vacuum evaporation system; Electron beam lithography system; X-ray diffraction system for thin-film crystalline analysis; Scanning electron microscope; Surface profiler; General-purpose FEM analyzer; X-ray fluorescence spectrometer; X-ray diffractometer; Scanning probe microscope; Ellipsometer; Absorption spectrophotometer; Scratching tester.



Takamatsu Campus Second Training Room



Takuma Campus First Seminar Roon



Scanning Electron Microscope



General-purpose FEM Analyzer

## Students

#### Number of Students

#### **⊘Department**

	Classification	Admission			Totol				
		Capacity	1st	2nd	Зrd	4th	5th	Total	
	Department of Mechanical Engineering	40	46(1)	39(1)	41(3)[1]	43(2)[2]	39	208(7)[3]	
	Department of Electrical and Computer Engineering	40	44(7)	44(6)	42(7)[1]	43(7)[1]	38(4)[1]	211(31)[3]	
	Department of Electro-Mechanical Systems Engineering	40	43(4)	41(2)	43(7)	45(2)[1]	30(3)	202(18)[1]	
lent	Department of Civil Engineering	40	44(8)	40(8)	47(8)	38(7)	28(6)	197(37)	
	Department of Communication Network Engineering	40	41(11)	40(4)	36(7)[1]	46(7)[1]	24(7)[1]	187(36)[3]	
rtñ	Department of Electronic Systems Engineering	40	42(5)	44(3)	41(6)	45(3)	41(4)	213(21)	
eba	Department of Information Engineering	40	40(7)	43(7)	40(9)	38(10)	40(7)	201(40)	
ă	Department of Mechanical Engineering	-					1	1	
	Department of Electrical and Computer Engineering	-					1	1	
	Department of Civil Engineering	-					2	2	
	Department of Control Engineering	-					1	1	
	Total	280	300(43)	291(31)	290(47)[3]	298(38)[5]	245(31)[2]	1,424(190)[10]	

#### **◇**Faculty of Advanced Engineering

	Classification	Admission	Enrolln	Total	
	GIASSINGALION	Capacity		2nd	TULAI
e S	Advanced Course in Industrial and Systems Engineering	24	38(2)[1]	27(2)	65(4)[1]
our	Advanced Course in Electronics, Information and Communication Engineering	18	23(3)[1]	18(2)	41(5)[1]
ö	Total	42	61(5)[2]	45(4)	106(9)[2]

### Clubs and Associations of People Sharing Common Interests

Baseball Club	Tennis Club	Pho
Track & Field Club	Soccer Club	Bra
Table Tennis Club	Softball Tennis Club	Eng
Judo Club	Badminton Club	Lig
Kendo Club	Handball Club	Сог
Yacht Club	Karate Club	Pai
Volleyball Club	Trekking Club	Me
Basketball Club	Shorinji-Kenpo Club	Scie
Swimming Club		Fut
Societies		
Drama Society	Literature Society	
Calligraphy Society	Painting Society	

Dialita Society	Literature society
Calligraphy Society	Painting Society
Cheerleaders Society	Photograph Society
Microcomputer Society	SPOT Society
Miniature Model Society	Space Development Research Club

) Female,

] Overseas Students

As of May. 1, 2015

#### ultural Clubs

tography Club s Band Club lish Club it Music Club nputer Club ting Club ihanical System Club nce Club ure Car Club Chorus Club Sado & Kado Club Radiotelegraphy Club Rakugo Club Shogi Club Original Comics Club S.J.R.C Club Go & Shogi Club

#### Seiun-ryo (Takamatsu Campus)

Takamatsu Campus has accommodations for students called Seiun-ryo, which consists of three buildings: South Dormitory, North Dormitory and West Dormitory. Male boarders stay at North and South Dormitory and female boarders use West Dormitory

South Dormitory 4-story building 57 private rooms(9m<sup>2</sup>), 2 private rooms(13.5m<sup>2</sup>), 1 shared room with 2 beds etc(24m<sup>2</sup>)

North Dormitory 3-story building 29 private rooms(11m²), 1 private rooms(15m²), 24 shared room with 2 beds etc(15m²)

West Dormitory 3-story building 24 private rooms(10m<sup>2</sup>), 8 shared room with 2 beds etc(15m<sup>2</sup>)

Common rooms a-study room, a computer room, a seminar room to study Japanese, a drawing room, lounges with a kitchenette, laundry room, bath room and a cafeteria

#### **Our Students**

School Year	lst	2nd	Зrd	4th	5th	Faculty of Advanced Engineering	total
No. of Dorm studs	45(2)	32(0)	36(4) (2)	41 (7) (4)	23(5)(1)	0	177 (18) (7)
() · Number of Female Students within Total < > Number of Overseas Students within Total As of May 1, 2015							



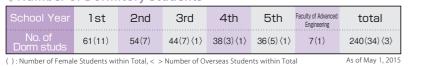
(): Number of Female Students within Total, < > Number of Overseas Students within Total

### Shippo-ryo • Shiun-ryo (Takuma Campus)

Takuma Campus has two block sets of dormitory buildings, one of which is "Shippo-ryo" and the other is "Shiun-ryo". The dormitory accommodations consist of three buildings, which are called Second, Third and Fourth Block. Presently, male students stay at Second and Third Block in Shippo-ryo, while female students use Fourth Block in Shiun-ryo.

Shippo-ryo (Takuma Campus) Two houses 4-story building 26 shared room with 2 beds etc(13.5m<sup>2</sup>) Three houses 5-story building 46 private rooms(9m<sup>2</sup>), 69 shared room with 2 beds etc(18m<sup>2</sup>) Shiun-ryo (Takuma Campus) Four houses 5-story building 12 private rooms(9m<sup>2</sup>), 38 shared room with 2 beds etc(18m<sup>2</sup>) Common rooms Study hall, a computer room, Lounge, lounges with a kitchenette, laundry room, bath room and a cafeteria

#### **Number of Dormitory Students**





Shinno-rvo & Shiun-rvo Cafeteria

# **After Graduation**

### Employment or Academic Situation

As of Aplil. 1, 2015

<u></u>						
	Department		Number of the Students who Further their Education			
ц.	Department of Mechanical Engineering	32	11	20	1	. 755
nen	Department of Electrical and Computer Engineering	29	17	12	0	
epartn	Electro-Mechanical Systems Engineering	6	0	6	0	
	Department of Electro-Mechanical Systems Engineering	37	22	15	0	
	Department of Civil Engineering	35	12	23	0	
	Total	139	62	76	1	
Course	Advanced Course in Industrial and Systems Engineering	26	10	16	0	

#### **⊘Takuma Campus**

**⊘Takamatsu Campus** 

	Department	Number of Graduates	Number of the Students who Further their Education	Number of Employed	Number of the Other	Job Offered Companies
ent	Department of Communication Network Engineering	38	18	20	0	
artm	Department of Electronic Systems Engineering	41	21	20	0	
Depai	Department of Information Engineering	34	22	9	3	442
	Total	113	61	49	3	
Course	Advanced Course in Electronics, Information and Communication Engineering	19	3	15	1	

## **Campus Map**

### - Takamatsu Campus



### - Takuma Campus



## Accounting

### **♦** Revenue and Expenditure (2014)

**Revenue** (a monetary unit: 1,000yen)

Grant for working Expenditure	270,972
Facilities Improvement Expenses	19,282
Self-Revenue	
Tuition and Entrance Examination Fee	378,308
Miscellaneous Revenue	11,687
Industry-University Cooperation Research Revenue and Donation	33,733
Other Subsidy	6,535
Total	720,517

- 1 Department of Executive and Department of General Education
- epartment of General Education
- 3 Department of Mechanical Engineering
- Department of Electrical and Computer Engineering
- Department of Electro-Mechanical Systems Engineering
- Department of Civil Engineering and Lecture Rooms
- Networking and Computing Service Center
   Besearch and Development Center for Reg
- esearch and Development Center for Regional Innovation Symnasium 1
- ymnasium2
- Budo-jyo(Gymnasium for Martial Arts)
- Fraining Room for Sports
- 16 Meeting Place for the Staff
  - Clubrooms()
  - 18 Clubrooms@ 19 Wind Tunnel Laboratory
  - 20 Jikyo-kaikan(Welfare Facilities)
     21 Wakei-kan(Site of a Training Camp)

  - Seiun-ryo(North Dormitory)
  - 23 Seiun-rvo (South Dormitory) eiun-ryo(West Dormitory)
  - Seiun-ryo(Dining Hall of Dormitory)
     Swimming Pool

  - 2 Athletic Field
  - 28 Handball Court
  - 💩 Tennis Court
  - Baseball Ground
  - ennis Courts 32 Tennis Court



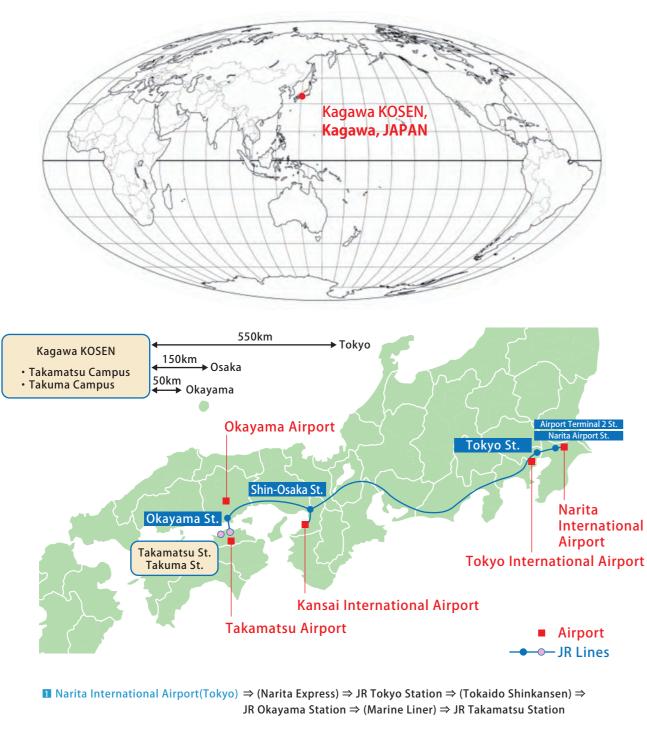
Primary Lecture Halls 8 Secondary Lecture Halls Uibrary Department of Executive for Dormitory Shippo-ryo@(Dormitory) 2 Shippo-ryo3(Dormitory) Bhiun-ryo(Dormitory) 14 East Dormitory 15 West Dormitory 6 Boiler Room of Dormitory Warehouse for Dormitory Bathhouse for Dormitory (19) Gymnasium 1
 (20) Gymnasium 2 Budo-jyo(Gymnasium for Martial Arts)
 Site of a Training Camp Warehouse for Physical Education
 Building for the Swimming Pool Fukuri Center(Welfare Facilities)
 Meeting Place for the Staff 2 Shippo Memorial Hall Buard's Room
 Garage 30 Housing for the Staff Swimming Pool 32 Baseball Field 3 Athletic Field Tennis Courts

#### **Expenditure** (a monetary unit: 1,000yen)

Educatioal Research Expenses	451,016
General Administrative Expenses	217,014
· ·	
Facilities Improvement Expenses	19,282
Industry-University Cooperation Research and Donation Project Expenses	25,936
Other Subsidy	6,535
Total	719,783

## **Access from International Airports to Kagawa KOSEN**

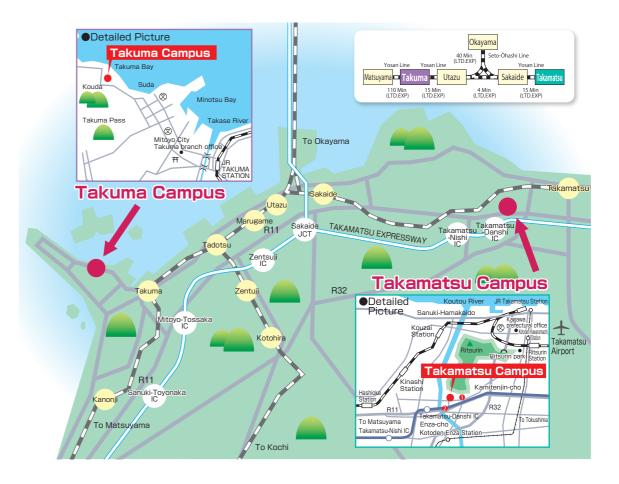
# Access Map



Z Tokyo International Airport(Tokyo) ⇒ (All Nippon Airways , Japan Airlines) ⇒ Takamatsu Airport ⇒ (Limousine Bus) ⇒ JR Takamatsu Station

**B** Kansai International Airport(Osaka) ⇒ (Limousine Bus) ⇒ JR Takamatsu Station

Direct access from Takamatsu Airport or JR Takamatsu Station to NITKC is only 20 minutes by car.



#### Takuma Campus

#### From JR Takuma Station (Yosan Line)

20 minutes by car Mitoyo City Community Bus for Nabuto on Takuma line /for Ohama on Takuma-Mino line  $\rightarrow$  1 minute walk from Kagawa KOSEN mae bus stop

From Takamatsu Expressway IC 20 minutes by car from Mitoyo-Tossaka IC 30 minutes by car from Sanuki-Toyonaka IC

From Takamatsu Airport 60 minutes by car

Address —

551 Kohda, Takuma-cho, Mitoyo, Kagawa 769-1192 Japan +81-875-83-8506

#### **Takamatsu Campus**

#### From JR Takamatsu Station

30 minutes by car Kotoden Bus(No.5 bus stop) for Mimaya-Prefecture Swimming Pool → 6 minutes walk from Nishi-Tanaka bus stop<sup>2</sup> 25 minutes by car

Kotoden Bus(No.5 bus stop) for Yusa-Iwasaki, Yusa-Ikenishi or Ikenishi-Konanrakuyu→ 10 minutes walk from Koyama bus stop

#### From Takamatsu Expressway IC

7 minutes by car from Takamatsu-Nishi IC

5 minutes by car from Takamatsu-Danshi IC

#### From Takamatsu Airport

20 minutes by car

#### Address

355 Chokushi-cho, Takamatsu, Kagawa 761-8058 Japan +81-87-869-3811