

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 specialized 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.
- ◇ Students will develop global perspectives and communication skills in Japanese and English, by participating in workshops and scientific conferences inside and outside of the college.



Advanced Course(Takamatsu Campus)



Advanced Course(Takuma Campus)

■ 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 innovative thinking.

■ 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 human well-being and welfare.

■ Civil Engineering Course

This course is for future civil engineers with knowledge of design, planning, disaster prevention and environmental preservation techniques.

◇ Curriculum

Classification	Subject	Credits
Liberal Arts	Compulsory	Management Theory
		TOEIC Preparation
		Jurisprudence
	Elective	Reading of Literary works
Engineering Basic	Compulsory	Engineer Ethics
		Topics in Mathematics I
		Modern Physics
		Intellectual Property Rights
		English for Technical Purpose
	Elective	Physical Chemistry
		Analytical Chemistry
		Applied Physics
		Overseas English Program
		Experiments and Practicals I
Core Eng. Subjects	Compulsory	Experiments and Practicals II
		Thesis Research I
		Thesis Research II
		Seminar I
		Seminar II
		Special Lectures
	Elective	Internship I
		Internship II
		Internship III
		Internship IV



Motion Capture Analysis



Internal Combustion Engine



Water Quality Analysis

Classification	Subject	Credits
Eng. Subjects of ME Course	Elective	Internal Combustion Engines
		Computational Mechanics
		Elasticity and Plasticity
		Advanced Strength and Fracture of Materials
		Matrix Vibration Analysis
		Reliability Engineering
Eng. Subjects of EC Course	Elective	Electromagnetic Compatibility
		Modern Control Theory
		Project Management Theory
		Solid State Electronics
		Integrated Circuits
		Semiconductor Physics
		Power Electronics
		Information and Communication Engineering
		Microwave Engineering
		Digital Signal Processing
Eng. Subjects of MS Course	Elective	Knowledge Computing
		Image Processing Engineering
		Advanced Heat Transfer
		Advanced Dynamics
		Optimization Theory
		Advanced Computer Processing
		Advanced Joining Technologies
		Advanced Energy Engineering
		Advanced Control Engineering I
		Advanced Control Engineering II
Eng. Subjects of CV Course	Elective	Mechatronics
		Seismic Design
		Maintenance Engineering
		Structural Analysis in Civil Engineering
		Transport Planning
		Urban Design
		Prevention of Natural Disasters I
		Environmental Disaster Prevention Engineering II
		Advanced Fluid Dynamics
		Civil Mathematical Planning
		Infrastructure Planning
		Information Technology and Systems
		Introduction to Civil Engineering
		Environmental Ethics and Management

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)

We provide a consistent curriculum from the associate degree course into the bachelor's degree course. The curriculum subjects consist of " liberal Arts ", " Engineering Basics " and " Field Specialized ".

Courses to enhance specialization in the fields of electronics, information, and communications are aligned to make it possible for studies to continue from the corresponding associate degree course. The course covers all fields of electrical and electronics engineering such as electrical and electronic information communication for the purpose of broadening students expertise.

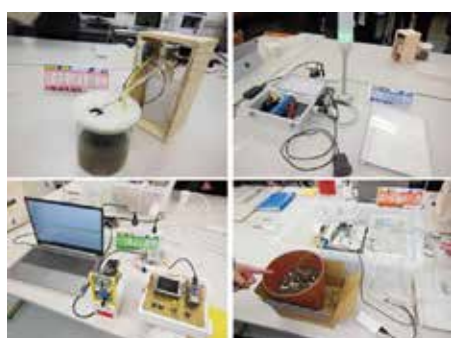
Thesis research, special research, experiments and exercises are paramount for the program. In thesis research, the chance to research with supervisors collaborating with faculty at university is established. Joint research with local industry to contribute to regional industrial development are also prepared for students. In special research and experiments, students form groups to collaborate with students from the different fields and utilize the specialized knowledge and skills acquired by each individual to develop systems.

We cultivate practical and creative engineers who have a wide range of perspectives that can acquire complex knowledge and advanced skills in specialized fields with multidisciplinary capacity. Furthermore, our students also acquire advanced communication skills, self-sufficiency, high trouble shooting and problem solving capabilities throughout these studies.

◇ Curriculum

Classification	Subject	Credits
Liberal Arts	Compulsory	Communicative English I
		Communicative English II
	Elective	Advanced Japanese Literature
Engineering Basic	Compulsory	Engineer Ethics
		Advanced Physical Science
		Topics Applied Mathematics
	Elective	Intellectual Property
		English for Engineers
		Engineering Mathematics

Classification	Subject	Credits
Compulsory	Thesis Research I	6
	Thesis Research II	4
	Experiments and Exercise I	4
	Experiments and Exercise II	6
Common Special Subjects	Quantum Mechanics	2
	Introduction to Information Technology	2
	Digital Signal Processing	2
	Applied Electromagnetics	2
	Graph Theory	2
	Information Networks	2
	Specialized Electronic Circuits	2
	Industrial Instrument Engineering	2
	System Control Engineering	2
	Algorithms and Data Structures	2
	Multi-Media Engineering	2
	Image Processing	2
	Special Lectures	2
	Communication Engineering	2
	Radio and Light Wave Engineering	2
	Advanced Communication Engineering	2
	Applied Electronic Materials Science and Engineering	2
	Machine Learning	2
	Digital Control Engineering	2
	Object Oriented Programming	2
	Applied Network Programming	2
	Database Design	2
	Internship I	1
	Internship II	2
	Internship III	4
	Internship IV	6



Special Experiments and Exercises II (Design Education)



Special Research Presentations



Fundamental and Specialized Engineering Courses



Liberal Arts Courses