

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.

◆ Fulltime Academic Staff in Department of General Education

[Takamatsu Campus]

Title	Name	Research Field
Prof.	OKANO, Hiroshi	Inorganic Materials Chemistry Thin Film Engineering
	TAGUCHI, Jun	History of Educational Thought
	NAKASE, Mikio	Sports Methodology Coach Methodology
	HASHIMOTO, Norifumi	Synthetic Organic Chemistry Catalytic Chemistry
	YOSHIZAWA, Kosei	Theory of Sports Training
	SATO, Fumitoshi	Algebraic Geometry
Associate Prof.	KOSHO, Kiyohiro	Pedagogy English Education
	YODA, Jun	European History
	SHIBASAKI, Kumiko	Chinese Literature
	NODA, Kazuto	Condensed Matter Theory
	UETOKO, Takahiro	Particle Physics
Senior Lecturer	TOKUNAGA, Shintaro	TESOL, East Asian History
	TACHIKAWA, Naoki	Electrochemistry Lithium Battery
	SAINTÉ Julien P	CLIL(Content and Language Integrated Learning)
	MORISHITA, Jiro	American Studies
	KOMEIJI, Tatsuki	Japanese Woodblock-printed Book(Ukiyo-e, E-hon)
	KUWATA, Ken	Mathematical Physics
Assistant Prof.	JIAO, Ran	Education and Career Differentiation TESOL
	SHIRAISHI, Densuke	Number Theory, Arithmetic Geometry
	OISHI, Kenta	Partial differential equation



Learning English by a Native Speaker



Department of General Education



A Lesson in the Multimedia Room

[Takuma Campus]

Title	Name	Research Field
Prof.	UCHIDA, Yuriko	Japanese History Women's Studies
	ARIMA, Hirotoshi	Methodology of Coaching
	FUJIHARA, Nobuhiro	Japanese Literature
	HASHIMOTO, Ryuta	Number Theory Continued Fraction
	UEHARA, Shigenori	Geometric Topology General Topology
	MORI, Kazunori	English Teaching, CALL
Associate Prof.	YOKOYAMA, Manabu	Methodology of Sports Training Health Education
	TAKENAKA, Kazuhiro	Synthetic Organic Chemistry, Organometallic Chemistry
	SHIMIZU, Ikko	Astrophysics
	MORIOKA, Takaaki	Teaching English to Speakers of Other Languages
	TAMURA, Masaki	Indian Philosophy Buddhist Studies
Assistant Prof.	KAGAWA, Ryusuke	Plasmonics Nanotechnology
	TAKAGI, Ren	Differential Geometry Submanifold Theory
	KOKUBU, Kaito	Partial differential equation theory
	TERAO, Honoka	Japanese Literature



Physics laboratory

◇Curriculum [Takamatsu Campus]

Compulsory Subject	Credits
Japanese I - III	6
Japanese as a Second Language	2
Society I - II	4
Mathematics I A	3
Mathematics I B	3
Mathematics II A	3
Mathematics II B	3
Mathematics III A	4
Mathematics III B	2
Mathematical Exercise	1
Integrated Science	1
Physics I - II	4
Chemistry I - II	4
Health and Physical Education I - III	6
English I A	2
English I B	2
English II A	2
English II B	2
English III A	2
English III B	2
Communication & Expression I - II	4
Art	2

[Takuma Campus]

Compulsory Subject	Credits
Japanese I - III	6
Society I - II	4
Mathematics I A	2
Mathematics I B	2
Mathematics I C	2
Mathematics I D	2
Mathematics II A	2
Mathematics II B	2
Mathematics II C	2
Mathematics II D	2
Mathematics III A	2
Mathematics III B	2
Physics I - II	4
Chemistry I - II	4
Health and Physical Education I - III	6
English I A	2
English I B	2
English II A	2
English II B	2
English III A	2
English III B	2
Communication & Expression I - II	4
Art	2
Japanese Studies	2

Elective Subject	Credits
Advanced Literature	2
Human Science	2
Social Science	2
General Chemistry I - II	4
Physical Education I - II	2
English IV A	2
English IV B	2
English V A	2
English V B	2
Language Seminar I - II	4
Overseas English Program	1

Elective Subject	Credits
Human Science I - IV	8
Social Science I - IV	8
Topics in Natural Science	2
Physical Education I - II	4
English for Specific Purposes I - II	4
Chinese I - II	4
Overseas English Program	1
Teaching Support Activity	1



Department of General Education in Spring



Collaborative Learning

◇Main Experiment Facilities

	Room	Main Equipment
Takamatsu Campus	Physics Laboratory	High Vacuum Pump, Spectroscope, Induction Coil
	Chemical Laboratory	Sputtering System, PH Meter, Draft Chamber with Scrubber
	Language Laboratory	46 booths, 46 Computers, e-learning
Takuma Campus	Physics Laboratory	Audio-visual Equipment, Measurement Device of Specific Charge
	Chemistry Laboratory	Ultra Pure Water Production System, Draft Chamber with Scrubber, Drying Oven
	Multimedia Learning Laboratory	48 booths (BYOD), e-learning

Industrial and Systems Engineering Division (Takamatsu Campus)

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.	KOJIMA, Takafumi	Thermodynamics Heat Transfer Engineering
	YOSHINAGA, Shinichi	Control Engineering
	JODAI, Yoshifumi	Fluids Engineering
Associate Prof.	TOKUDA, Taro	Strength of Materials Fracture Mechanics
	TAKAHASHI, Yoichi	Precision Machining Forming Processes
	MAEDA, Yusaku	Sensor Engineering
Senior Lecturer	KIMURA, Yuto	Computational Mechanics
	TAKATANI, Hideaki	Robotics State Estimation
Assistant Prof.	FUJIOKA, Genko	Composite material, Sensor engineering



Bending Test of Metallic Materials



Graduation Research

◆ Curriculum

Classification	Subject	Credits	Classification	Subject	Credits
Compulsory	Engineering Literacy	2	Elective	Applied Mathematics III	2
	Applied Mathematics I	2		Engineering Mechanics II	2
	Applied Mathematics II	2		Strength of Materials III	2
	History of Science and Technology	1		Theory of Elasticity	2
	Intellectual Property	1		Heat Transfer Engineering	2
	Exercise of Mechanical Engineering I	1		Fluids Dynamics I	2
	Exercise of Mechanical Engineering II	1		Electronics	2
	Engineering Mechanics I	2		Computer Engineering	2
	Strength of Materials I	2		Computer Aided Design and Drafting II	2
	Strength of Materials II	2		Technical English	2
	Thermodynamics	2		Heat Engines	2
	Hydraulics	2		Control Engineering II	2
	Mechanical Vibrations	2		Fluids Dynamics II	2
	Working Technology	2		Job Training	1
	Machine Element Design I	1		Special Lecture I	1
	Machine Element Design II	2		Special Lecture II	1
	Material Science and Engineering	2		Special Lecture III	1
	Electrical Engineering	1		Special Lecture IV	1
	Control Engineering I	1		Overseas Engineering Training	1
	Fundamental Programming	2		Pre-research Activity I	1
	Numerical Methods	2		Pre-research Activity II	1
	Mechanical Design and Drafting I	2		Pre-research Activity III	1
	Mechanical Design and Drafting II	2		Advanced Programming Training I	4
	Computer Aided Design and Drafting I	3		Advanced Programming Training II	4
	Fundamental of Working Exercise I	3		Advanced Programming Training III	4
	Fundamental of Working Exercise II	3		Advanced Technology I	1
	Fundamental of Working Exercise III	2		Advanced Technology II	1
	Mechanical Experiment I	3			
	Mechanical Experiment II	3			
	Career Design	1			
	Graduation Research	8			



Computer Aided Design & Drafting



Solar Car and Eco Car

◆ Main Experiment Facilities

Room	Main Equipment
Workshop Lab.	Ultra-Precision Machine, Wire-Cut EDM Systems, Hobbing Machine, Precision Lathe
Mechanical Measurement Lab.	Non-Contact 3D Measuring Machine, Surface Finishing Indicator, Micro Hardness Tester
Material Testing Lab.	Universal Materials Testing Machine, Fatigue Testing Machine, Torsion Tester, Charpy Impact Tester
Material Lab.	Optical Microscope, Electric Furnace, Hardness Tester, SPD Equipment
Research Space Lab.	Hydraulic Servo-Mechanical Fatigue Testing Machine
Vibration Engineering Lab.	Vibration System, Vibration Meter
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, Oscilloscope
Electronics Lab.	Oscilloscope, Digital Multi-Meter, Function Generator, DC Power-Supply Unit
Machine Shop	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, 3D Printer

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 Field
Prof.	SHIGETA, Kazuhiro	Information and Communication Engineering Educational Technology
	TUJI, Masatoshi	Electronic Circuit Microwave Engineering
	URUSHIHARA, Shiro	Motion Control Control Engineering
	TARAO, Hiroo	Electromagnetic Compatibility, Bioelectromagnetics
	NAKAMURA, Atsunobu	Electric Materials
Associate Prof.	MURAKAMI, Yukikazu	Educational Technology
	KAKIMOTO, Takeshi	Software Development Management
	YAMAMOTO, Masashi	Material Science
	KITAMURA, Daichi	Statistical Signal Processing, Machine Learning
Senior Lecturer	YOSHIOKA, Takashi	Motion Control Motor Drive
Assistant Prof.	HINAMOTO, Yoichi	Digital Signal Processing



Lecture (logic circuits)



Experiment of Electronics

◆ Curriculum

Classification	Subject	Credits	Classification	Subject	Credits
Compulsory	Engineering Literacy	2	Elective	Introduction of Semiconductor Physics	2
	Applied Mathematics I	2		Electromagnetics II	2
	Applied Mathematics II	4		Electrical Circuits I	4
	History of Science and Technology	1		Instrumentation Engineer	2
	Intellectual Property	1		Electronic Circuits II	2
	Fundamentals of Electrical and Computer Science I	4		Energy Conversion Engineering	2
	Fundamentals of Electrical and Computer Science II	4		Control Engineering	2
	Fundamentals of Electricity	4		Electronic Devices	2
	Electromagnetics I	4		Information and Communication Network	2
	Electrical Circuits I	4		Computer Architecture	2
	Logic Circuits	4		Operating System	2
	Fundamentals of Information Processing	4		Signal Processing	2
	Electronic Circuits I	2		Information and coding theory	2
	Information Mathematics	2		Intelligence Information Processing	2
	Algorithms	2		Numerical Simulation	2
	Creative Engineering Experiment Training I	2		Statistical Data Processing	2
	Creative Engineering Experiment Training II	4		Job Training	1
	Experiments on Electrical and Computer Science I	4		Special Lecture I	1
	Experiments on Electrical and Computer Science II	4		Special Lecture II	1
	Applied Experiments on Electrical and Computer Science	2		Special Lecture III	1
	Graduation Research	8		Special Lecture IV	1
	Embedded AI Systems Development	4		Overseas Engineering Training	1
	Career Design	1		Pre-research Activity I	1
				Pre-research Activity II	1
				Pre-research Activity III	1
				Advanced Programming Training I	4
				Advanced Programming Training II	4
				Advanced Programming Training III	4
				Advanced Technology I	1
				Advanced Technology II	1



Practice of Information Processing



Presentation of Circuit Design

◆ Main Experiment Facilities

Room	Main Equipment
Measurement Control Lab.	SCR Inverter, Electric Machine Training System, He-Ne Laser, Optical Power
Electronics and Information Lab.	Curve tracer, Oscilloscope, Logic Analyzer, Microwave Measuring System, Print Board Fabrication System, Optical Communication/Optical Fiber Communication System
Materials Lab.	Lock-in Amplifier, Ultra High Resistance Meter, Liquid Nitrogen Cryostat, Thickness Meter, Green Laser
Power Electronics Lab.	Ball screw mechanical system with AC servo motor, Induction motor control system
Electromagnetic Compatibility Lab.	Uniform Magnetic Field Exposure System, Magnetic Field Measurement Device, Work Station
Electronics Lab.	Oscilloscope, Function Generator, DC Power supply, Q Meter, Digital Frequency Counter, Pulse Circuit Trainer
Acoustical Information Lab.	Anechoic Chamber, Acoustic Measuring System, Ultrasound Detector
Computer and Communication Engineering Lab.	Logical Circuit Experiment Apparatus, Semiconductor Element Experiment Apparatus, Arithmetic Circuit Trainer, AD/DA Converter Trainer, Logic Analyzer

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
Prof.	TOKUNAGA, Hidekazu	Computational Learning Theory Web Mining
	SOMA, Takeshi	Energy Engineering Energy Materials
	SHIMASAKI, Shin'ichi	Electromagnetic Processing of Materials
	SHOBAKO, Shinichiro	Welding & Joining Arc Plasma
Associate Prof.	YURA, Satoshi	Control Engineering Motion Control
	ISHII, Kohei	Biomedical Engineering
	TSUMORI, Nobuhiro	Nanophotonics Near-field Optics
	YAMASHITA, Tomohiko	High Voltage Engineering, Pulsed Power
Senior Lecturer	KAWAKAMI, Yusuke	Kansei Engineering, Signal Processing



Checking Robots



An Autonomous Robot



Working with Lathe Machine



Checking Electronic Components

Curriculum

Classification	Subject	Credits	Classification	Subject	Credits
Compulsory	Engineering Literacy	2	Elective	Mechanics of Materials II	2
	Applied Mathematics I	2		Engineering Materials II	2
	Applied Mathematics II	2		Thermal Engineering II	2
	History of Science and Technology	1		Fluid Engineering II	2
	Intellectual Property	1		Electric and Electronic Circuits II	2
	Electromagnetics I	2		Information Processing A	2
	Manufacturing Processes	2		Information Processing B	2
	Fundamental Mechanics	2		System Control Engineering II	2
	Engineering Materials I	2		Robotics	2
	Mechanical Engineering Design	2		Mechanical Instrumentation	2
	Mechanics of Materials I	2		Statistical Analysis	2
	Thermal Engineering I	1		Technical English	2
	Fluid Engineering I	1		Semiconductor Engineering on Basis	2
	Electric and Electronic Circuits I	2		Electronic Instrumentation	2
	Information Processing on Basis	2		Sensor Devices	2
	Mechanical Dynamics	1		Job Training	1
	Electromagnetics II	1		Special Lecture I	1
	Mechatronics I on Basis	3		Special Lecture II	1
	Mechatronics II on Basis	3		Special Lecture III	1
	Mechatronics III on Basis	2		Special Lecture IV	1
	Mechatronics System Design	4		Overseas Engineering Training	1
	System Control Engineering I	2		Pre-research Activity I	1
	Career Design	1		Pre-research Activity II	1
	Technical Japanese Rhetoric	1		Pre-research Activity III	1
	Training and Exercise I on MONOZUKURI Basis	3		Advanced Programming Training I	4
	Training and Exercise II on MONOZUKURI Basis	3		Advanced Programming Training II	4
	Training and Exercise III on MONOZUKURI Basis	3		Advanced Programming Training III	4
	Experiment I	4		Advanced Technology I	1
	Experiment II	4		Advanced Technology II	1
	Graduation Research	8			

Main Experiment Facilities

Room	Main Equipment
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, DC Power-Supply Unit, PCB-CAD/CAM
CAD Room	Video Projector, Personal Computer, 3D CAD, 3D Printer
Exercise Room	Video Projector, Personal Computer, 3D CAD, 3D Printer
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 Field
Prof.	MUKAITANI, Mitsuhiro	Geotechnical Engineering Geoenvironmental Engineering
	ARAMAKI, Noritaka	Geotechnical Engineering Resource Development Engineering
	MIYAZAKI, Kosuke	Infrastructure Planning Transportation Planning
	TAGAWA, Tadashi	Sanitary Engineering Environmental Engineering
	YANAGAWA, Ryoichi	Coastal Disaster Management Engineering Coastal Ecosystem Engineering
	HAYASHI, Kazuhiko	Concrete Engineering Maintenance Engineering
Associate Prof.	TAKAHASHI, Naoki	Hydraulic Engineering Ecological Engineering
	HASEGAWA, Yuki	Concrete Engineering Agricultural Engineering
Senior Lecturer	IMAOKA, Yoshiko	Urban Planning Welfare Engineering
Assistant Prof.	MATSUMOTO, Masayuki	Earthquake engineering Seismic engineering



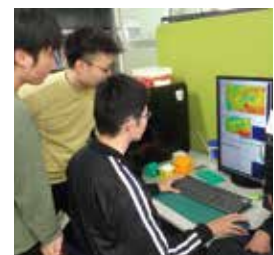
Loading of steel structure



Surveying



Hydraulic Experiment



Numerical Model Analysis

◆ Curriculum

Classification	Subject	Credits	Classification	Subject	Credits
Compulsory	Engineering Literacy	2	Elective	Structural Design II	2
	Applied Mathematics I	2		Geotechnical Engineering	2
	Applied Mathematics II	1		River and Coastal Engineering II	2
	History of Science and Technology	1		Applied Mechanics	2
	Intellectual Property	1		Environmental Engineering III	2
	Structural Mechanics I	2		Environmental Impact Assessment	2
	Structural Mechanics II	2		Information Processing III	2
	Structural Mechanics III	1		Surveying II	2
	Structural Design I	2		Disaster Prevention Engineering	2
	Construction Materials	2		Applied Mathematics III	2
	Soil Mechanics I	1		Technical English	2
	Soil Mechanics II	1		Job Training	1
	Soil Mechanics III	1		Special Lecture I	1
	Construction Management	1		Special Lecture II	1
	Hydraulics I	1		Special Lecture III	1
	Hydraulics II	1		Special Lecture IV	1
	River and Coastal Engineering I	1		Pre-research Activity I	1
	Environmental Engineering I	2		Pre-research Activity II	1
	Environmental Engineering II	1		Pre-research Activity III	1
	Information Processing I	2		Advanced Programming Training I	4
	Information Processing II	2		Advanced Programming Training II	4
	Surveying I	1		Advanced Programming Training III	4
	Planning I	1		Advanced Technology I	1
	Planning II	1		Advanced Technology II	1
	Career Design	1			
	Design and Drawing I	2			
	Design and Drawing II	2			
	Civil Experiments and Exercises I	4			
	Civil Experiments and Exercises II	4			
	Civil Experiments and Exercises III	4			
	Civil Experiments and Exercises IV	2			
	Civil Experiments and Exercises V	2			
	Civil Experiments and Exercises VI	3			
	Introduction of Civil Engineering	2			
	Current Topics on Civil Engineering	1			
	Engineering Study with Creative Training	2			
	Graduation Research	8			

◆ Main Experiment Facilities

Room	Main Equipment
Structural Engineering Lab.	Static and dynamic loading machine, Beam testing machines, Servo-type 1D&2D shaking tables, 2D soil tanks
Materials Engineering Lab.	Automatic compression testing machine (Cap. of 300kN), Universal testing machine (Cap. of 1000kN), Concrete mixer, Oil jacks and oil pumps, Concrete cylinder end grinder, Freezing and thawing machine, Testing apparatuses for various concrete, Concrete curing water bath
Hydraulic Engineering Lab.	Three dimensional channel, Movable channels, Wave making channels, Shape-created weir, Pipe line with a Venturi meter, Wave height indicators, Various recorders
Geotechnical Engineering Lab.	Automatic consolidation testing apparatus, Universal compression testing apparatus, Cyclic triaxial compression test apparatus, Large-scaled universal direct shear apparatus, Falling head permeability test apparatus, B-type viscometer, High speed camera, Various soil testing apparatus
Environmental Engineering Lab.	Total organic carbon analyzer, Ion chromatograph, Gas chromatograph, Autoclaves, Centrifuge, Ultra pure water system, Electronic scale, Constant temperature ovens
Equipment room	Global Navigation Satellite Systems, Geographic Information System, Remote Sensing, Total station, Automatic levels, Plane table, Pranimeters, Stereoscope

Electronics, Information and Communication Engineering Division (Takuma Campus)

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.

◆ Fulltime Academic Staff

Title	Name	Research Field
Prof.	ISSHIKI, Hiromi	Biomedical Engineering
	ONO, Akira	Telecommunication Electronic Circuit
	SHIRAISHI, Keiichi	Computer Algebra e-Learning
Associate Prof.	MANABE, Katsuya	Electromagnetic Theory Microwave Theory and Techniques
	TAKAJO, Hideyuki	Educational Technology Ubiquitous Computing
	SHOHON, Toshiyuki	Coding Theory Communication Engineering
	KUMEKAWA, Kazuya	Computer Networks
	KAWAKUBO, Takashi	Field Emission Surface Physics
Assistant Prof.	URAKAMI, Taisei	Wireless Communication Antennas and Propagation

◆ Curriculum

Classification	Subject	Credits
Compulsory	Applied Mathematics	2
	Probability and Statistics	2
	Applied Physics I	2
	Electric Engineering	2
	Programming I	2
	Programming II	2
	Fundamentals of Computer Science	2
	Digital Circuits	2
	Electric Circuits I	2
	Electric Circuits II	2
	Electric Circuits A	2
	Electromagnetics I	2
	Electromagnetics II	2
	Electronic Circuits I	2
	Electronic Circuits II	2
	Electric and Electronic Measurements I	2
	Electronics	2
	Seminar on Communication Engineering	4
	Fundamental Engineering Exercises	2
	Creative Experiments and Practices	2
	Experiments and Practices	2
	Experiments in Communication Network Engineering	2
	Experiments in Communication Engineering I	4
	Experiments in Communication Engineering II	4
	Graduation Research	2
	Applied Physics II	2
	Programming III	2
	Electric and Electronic Measurements II	2
	Wireless Communication Engineering I	2
	Wireless Communication Engineering II	2
	Antennas and Propagation I	2
	Antennas and Propagation II	2
	Communication System	2
	Electric Circuits III	2
	Telecommunications Law	2
Elective	Computer Networks I	2
	Computer Networks II	2
	Seminar on Radio Engineering	2
	Data Communications	2
	Advanced Programming	2
	Information Security	2
	Internship	1
	Special Lectures I	1
	Special Lectures II	1
	Research Fundamentals I	1
	Research Fundamentals II	1
	Research Fundamentals III	1
	Advanced Technology I	1
	Advanced Technology II	1
	Overseas Engineering Training	1



Wireless Communication Experiment



Optical Fiber Communication



Radar Detection



Computer Network Experiment

◆ Main Experiment Facilities

Room	Main Equipment
Electromagnetic Anechoic Chamber	EMI(Electromagnetic Interference)Receiver, CVCF(Constant-voltage Constant-Frequency)Power Supply, BLog Antenna, Artificial Mains Network, Absorbing Clamp, Turn Table, Vector Network Analyzer
Applied Electromagnetic Wave Lab.	Radar, Satellite Compass, AIS(Automatic Identification System)Receiver, Radio Direction Measurement Equipment, Radio Transmitter, Radio Receiver
Photonics Lab.	Sampling Oscilloscope, Spectrum Analyzer, EO Converter, OE Converter, OTDR(Optical Time Domain Reflectometer)
3rd Fundamental Communication Eng. Lab.	Pulse Pattern Generator, Error Rate Detector, Optical Spectrum Analyzer
Information Network Exercise Room	Training Equipments for LAN(Local Area Network)Integration(Routers, Switching Hubs, Wireless LAN Access Points, Personal Computers), Microcomputer Development and Training System

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

Title	Name	Research Field
Prof.	MISAKI, Yukinori	Robot Engineering
	YAGI, Masakazu	Solid State Physics
Associate Prof.	TSUKIMOTO, Isao	Electronic Circuits
	MIKAWA, Michio	Solid State Physics
	JOHNSTON, Robert Weston	Embedded Systems
	SHIMIZU, Tomo	Semiconductor Devices
	MORIMUNE, Taichiro	Solid State Physics
	IWAMOTO, Naoya	Semiconductor Devices
Senior Lecturer	ONISHI, Akinari	Assistive Technology
	YOSHIOKA, Genta	Human Robot Interaction



Robot Manufacture Experiment using MINDSTORMS



Fundamental Electronic Circuit Experiments in English



Digital Circuit Manufacture Experiment using VHDL (in 5th Grade)



Graduation Work with Region Cooperation (in 5th Grade)

◆ Curriculum

Classification	Subject	Credits
Compulsory	Applied Mathematics	2
	Probability and Statistics	2
	Applied Physics I	2
	Electric Engineering	2
	Electric Circuits I	2
	Electric Circuits II	2
	Fundamental Electric Circuits	4
	Electromagnetics I	2
	Electromagnetics II	2
	Electronics	2
	Electronic Circuits I	2
	Electronic Circuits II	2
	Semiconductor Electronics	2
	Computer and Data Communications	2
Elective	Digital Circuits I	2
	Digital Circuits II	2
	Electronic Measurements	2
	Control Engineering I	2
	Programming I	2
	Programming II	2
	Electronic Systems Engineering Seminar	4
	Fundamental Engineering Exercises	2
	Creative Experiments and Practices	2
	Experiments and Practices	2
Elective	Experiments in Electronic Engineering	4
	Experiments in Electronic Engineering I	4
	Experiments in Electronic Engineering II	4
	Graduation Research	10
	Applied Physics II	2
	Electric Circuits III	2
	Semiconductor Devices and Integrated Circuits	2
	Control Engineering II	2
	Robot Engineering	2
	Sensor Electronics	2
	Programming III	2
	Special Lecture in Electronic Systems EngineeringA	2
	Special Lecture in Electronic Systems EngineeringB	2
	Communication System	2
	Image Processing Technology	2
	System Engineering	2
	Internship	1
	Special Lectures I	1
	Special Lectures II	1
	Research Fundamentals I	1
	Research Fundamentals II	1
	Research Fundamentals III	1
	Advanced Technology I	1
	Advanced Technology II	1
	Overseas Engineering Training	1

◆ Main Experiment Facilities

Room	Main Equipment
Common Lab.	Liquid Crystal, Tunable Filters, Cooled CCD Camera, Multispectral Imaging System, Hyperspectral Camera
Measurement Engineering Lab.	Equipment of Supply Current Test to Detect Lead Opens of CMOS ICs, Oscilloscope, Current Probe
Computer Engineering Lab.	Oscilloscope, Radiation Detector, Analog Waveform Processing System
Circuit Design Lab.	Photoelectron Yield Spectroscopy, UV-VIS NIR Spectrophotometer, Organic Thin Film Deposition Apparatus, Spectroscopic Reflectometer, Laser Micro-machining Apparatus, Atomic Force Microscope
Optoelectronics Lab.	Fluorometer, Quantum efficiency measurement system, Diffraction-grating monochromator, He-Cd laser, Ar ion laser, Cryogenic refrigerator
Electronics Lab.	Infrared Thermal Camera, 3D Printer, 3D Scanner, Tabletop Microscope, Non-Mydriatic Auto Fundus Camera, Pulse Oximeter
Materials Engineering Lab.	Pulsed Laser Deposition System, Sputtering Apparatus, Hall Effect Measurement System, X-ray Diffraction Equipment
Plasma Sintering Lab.	Spark Plasma Sintering System

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

Title	Name	Research Field
Prof.	MIYATAKE, Akiyoshi	Educational System Engineering
	TOKUNAGA, Shuichi	Image Processing
	KAWATA, Jun	Plasma Surface Interaction
	KANAZAWA, Keizo	Image Processing
	KAWAZOME, Hayato	Plasma Spectroscopy
	SASAYAMA, Manabu	Information Retrieval Machine Translation
Associate Prof.	KONDOH, Yuji	Computer Algebra
	OKUYAMA, Shingo	Algebraic Topology
	TIN HTAY HLAING	Formal Language Theory, Finite State Language Processing
Senior Lecturer	MIYAZAKI, Takahiro	Remote Sensing
Assistant Prof.	YOKOYAMA, Hinata	Information Storage System

Curriculum

Classification	Subject	Credits
Compulsory	Applied Mathematics	2
	Probability and Statistics	2
	Applied Physics I	2
	Electric Engineering	2
	Electric Circuits	2
	Electronic Circuits	2
	Digital Circuits	2
	Information Engineering	2
	Computer Architecture	2
	Information Processing I	2
	Information Processing II	2
	Software Design and Development	4
	Information Theory	2
	Data Structures and Algorithms	2
	Numerical Analysis	2
	Seminar on Information Engineering	6
	Fundamental Engineering Exercises	2
	Information Engineering Exercises	2
	Engineering Exercise I	2
	Creative Experiments and Practices	2
	Experiments and Practices	2
	Experiments in Information Engineering	2
	Experiments in Information Engineering I	4
	Experiments in Information Engineering II	4
Elective	Graduation Research	10
	Applied Physics II	2
	Mathematics for Information Science	2
	Compiler	2
	Electromagnetics	2
	Data Science	2
	Engineering Exercise II	2
	System Programming	2
	System Software	2
	Information System	2
	Artificial Intelligence I	2
	Artificial Intelligence II	2
	Digital Image Processing	2
	Database Management System	2
	Computer Networks	2
	Information Security	2
	Internship	1
	Special Lectures I	1
	Special Lectures II	1
	Research Fundamentals I	1
	Research Fundamentals II	1
	Research Fundamentals III	1
	Advanced Technology I	1
	Advanced Technology II	1
	Overseas Engineering Training	1



Digital Circuit Experiment



Network System Integration



3D Content Creation for Virtual Reality



Programming Contest

Main Experiment Facilities

Room	Main Equipment
Network Lab.	Experiment equipments for network skill acquisition(Router,L2,L3 switch)
ICT Lab.	203.2cm diagonal screen size Integrated Touch Display
Information Security Lab	AI learning server
Joint Use Lab.	3D content creation system