Course Roadmap

Common Course

기반
Seminar in Information Technology
Writing of IT Technical Papers in English and Research Ethics
Safety Education

창의융합
Technological Innovation and Business Management
Understanding of Intellectual Property Rights
Project Management

사회문제해결
Advanced Convergence Capstone Design
Internship Program I
Internship Program II
Team Research Project I
Team Research Project II

연구
Master’s Research Problem I
Master’s Research Problem II
Doctor’s Research Problem I
Doctor’s Research Problem II
Doctor’s Research Problem III

Core Course

Advanced Course

Extra-Curricular
Bachelor/Master Course
Other Departments Course
Course Roadmap

Smart Energy

Core Course

Linear Systems

- Optimization Methods
- Estimation Theory
- Computer Control of Electric Machines
- Advanced Theory in Electric Power System Engineering
- Electromagnetic Energy Conversion

Advanced Course

- Multivariable Control
- Digital Control
- Robotics
- Robot Vision
- Nonlinear Systems Control Theory
- Advanced System Engineering
- System Identification
- Networked Control System
- Intelligent Robots
- Intelligent Control
- Optimal Control Design
- Fuzzy Systems
- Accelerator Engineering
- Advanced Power Electronics Engineering
- High Performance Electric Machine Control
- Semiconductor Power Circuits and Design
- Switching Power Supply Design
- Biomedical Electrical Engineering
- Design Principles of Electric Machine
- Electric Energy System Engineering
- Power System IT Engineering
- Simulation Engineering of Electric Power Systems
- Power System Computer Relaying
- Computer Control of Electric Power System
- Power System Analysis
- Automation and Design of Electric Power System
- Power Electronics System Analysis
- Optimal Design of Electromagnetic Systems
- Numerical Analysis of Electromagnetic Field
- DC Power Distribution Engineering

Corner Stone Course
Control Systems Group Course
Energy Systems Group Course

Bachelor/Master Course
Course Roadmap

Intelligent Semiconductor

Core Course

- Solid State Physics for Electrical Engineers
- Nano Device
- Digital Integrated Circuits
- Semiconductor Process Technology
- SOC Architectures
- Semiconductor Devices
- Analog IC Design

Advanced Course

- OLED Device and Manufacturing
- Advanced Display Engineering
- Advanced Topics in Semiconductor Devices and Circuits
- Introduction to Solid State Physics
- Nanophotonics
- Display Backplane Technology
- Display Optics
- Display Industry–University Projects
- Display Evaluation Technology and Practical Training
- Microelectronic Device Applications
- Thin Film Technology Applications
- Semiconductor Device Characterization
- Semiconductor Device Simulation and Practice
- Quantum Optics
- Flexible Display Engineering
- Introduction to Flexible Electronics
- Topics on Properties of Electronic Engineering Materials
- Introduction to Intelligent Bioelectronic Devices
- Solar Cell Characterization
- Analog/Mixed-Signal Design
- IoT System IC Design
- RF System Engineering
- RF Integrated Circuits
- SOC Design and Practice
- Algorithms in SoC CAD
- Advanced System IC Design 1
- Advanced System IC Design 2
- Neurorphic Integrated Circuits and Systems
- Digital Circuit Testing
- Memory Semiconductor Design
- Linear Power Amplifier Design
- Analog Filter Design
- Embedded Software
- Embedded System Design
- Lower Power VLSI Design
- Power Delivery Network Modeling and Design in Low Power Electronic Systems
- Computer Architecture Design and Applications

Nano/Semiconductor Group Course

VLSI Design Group Course
Course Roadmap

Hyperconnected Communication

Core Course

- Wireless Networks Cornerstone
- Advanced Digital Communications
- Advanced Computer Networks
- Error-Correction Coding Theory
- Advanced Signal Processing
- Advanced Probability and Random Processes

Advanced Course

- Advanced Network Design
- Advanced Information Theory
- Advanced Data Communications
- Topics in Mobile System Design
- Media Communication
- Mobile Communications
- Introduction to Mobile Communications
- High-speed and Broadband Networks
- Queueing Network
- Quality-of-Service Networks
- EMI/EMC
- Advanced Antenna Engineering
- Optical Signal Processing
- Optical Fiber Communication Systems
- Optical Phenomena and Applications
- HighPower RF System & Control
- Radar Systems
- Signal integrity analysis and design
- Power Distribution Network Design in Electronic Circuit
- Circuits and Systems for 6G Communication
- Quantum-Meta Optics