Institute of Electronics
Course List by Group of Major

2025/2/7

	1st Semester	2nd Semester
	Course Title	**Course Title**
Solid State Electronics Group	Advanced Electromagnetics (I)	Advanced Electromagnetics (II)
	Solid State Physics	Solid State Theory
	Semiconductor Physics and Devices (I)	Quantum Mechanics
	Silicon Nanometer Devices and Physics	Advanced Quantum Mechanics
	Nanometer Scale Electronic Devices	Semiconductor Physics and Devices (II)
	Optical Electronics	Introduction to Semiconductor Spintronics
	Electronic Materials	Intro. to Physics of Semiconductor Nanostructures
	Semiconductor Memories and Their Fabrication Technology	Compound Semiconductor Physics and Devices
	Flash Memory Devices and Technology	Semiconductor Optoelectrontic Devices and Physics
	Solar Cell: Physics and Technology	Oxide Electronics
	Integrated Circuit Technology (I)	Special Topics on Device and Circuit Simulation
	Process Integration	Low-dimension Nanodevice Transport Theory and Computational Tools
	Low Power Si CMOS Electronics and Device Technology	Reliability on Semiconductor Device and Process Technology
	Special Topics of CMOS Devices, Reliability, and Applications	Special Topics on Advanced VLSI Devices and Technology
	3D Semiconductor Device Technology	Integrated Circuit Technology (II)
	Semiconductor Laboratory	Component Technology of MEMS
	Device and Circuit Characterization Laboratory	Nanometer RF Engineering
	Design and Process of High-Power Light Emitting Devices	3D Integrated Circuits
	Power Semiconductor Devices - Physics and Technology	Thin Film Technology and Analysis
	Simulation of Electronic Noise in Devices	Material Analysis
	Introduction to 2D Semiconductors	Thin Film Technology
	Nano-plasmonics & Metamaterials	Semiconductor Laser
	SiC Process Technology	Introduction to Emerging Devices from Nanoelectronics and Spintronics
	SiC Process Laboratory	Atomistic Quantum Electronic Transport
	Power Semiconductor Device Physics	Silicon photonics
	Reliability and Failure Physics of Semiconductor Devices	High-Speed and Advanced Semiconductor Devices
		Electrical Characterization Technology and Laboratory of Power Devices
		Nanoscale CMOS Manufacturing

Common Courses	Seminar on Solid State Electronics	Seminar on Solid State Electronics
	Seminar on Circuits and Systems	Seminar on Circuits and Systems
	Other Seminar on Electronics by the Institute	Other Seminar on Electronics by the Institute
	Analog Integrated Circuits	Digital Integrated Circuits
	Memory Circuit Design	Special Topics on ESD Protection Design in CMOS ICs
	Radio-Frequency Integrated Circuits	Layout of Mixed-Signal CMOS Integrated Circuits

	Bio-Medical Circuits and Systems	Sensing and Actuating Integrated Circuits
	Introduction to Biomedical Electronics Circuits and Systems	Introductiion of Medical Engineering
	Single-Photon Devices and Systems	Introduction to Sensors for Autonomous Driving
	Introductiion of Medical Engineering	Introduction to Sensors for Autonomous Driving
	Power Management Integrated Circuit Design and Implementation	Introduction to Biomedical Sensors
Circuits and Systems Group	Integrated Circuit Design Laboratory	Computer Architecture
	Special Topics in Computer Aided Design	Integrated Circuit Design Laboratory
	Memory Systems	Intelligent Electronic System Design
	Digital Communication Integrated Circuits	VLSI Testing and Design for Testability
	Physical Design Automation	VLSI Signal Processing
	VLSI Design for Manufacturability	Digital Communication Integrated Circuits
	Introduction to Smart Sensing System Design	Embedded Memory Design
	Biomedical VLSI Signal Processing	Physical Design Automation
	Clinical Application of Medical Electronic Devices	Advanced Algorithms
	Special Topics on Low Power Design	Introduction to CMOS MEMS
	Phase Locked Loop Design and Applications	Special Issue on Biomedical Image Processing
	Power Integrated Circuits	Data Conversion Integrated Circuits
	Stochastic Processes	Analog Filter Design
	Digital Communication	High-Frequency Circuits & Design Laboratory
	Channel Coding	Radio-Frequency VLSI Design
	Source Coding	Microwave Circuits
	Digital Image Processing	Millimeter-wave Circuits and Systems
	Intelligent Fog Computing Systems and Designs	Wireless Power Transmission System
	Information Theory	Advanced Digital Signal Processing（Digital Signal Processing）
	Mathematical Methods and Algorithms for Signal Processing - I	Adaptive Signal Processing
	Deep Learning for Autonomous Driving	Mobile Communication
	Deep Learning	Multimedia Communication
	Applied Computer Vision	Optimization Theory and Applications
	Hardware Security for Vehicle to Vehicle Communications	Detection and Estimation
	Commercialize Idea and Startup Business	Machine Learning
	SOC Design	Artificial Intelligence
		Mobile App Design

	Medical Imaging System
	Application Acceleration with High-Level-Synthesis
	Machine Learning Intelligent Chip Design
	Advanced SOC Design
	Digital, AI and Emerging Computing Architecture