

School of Electrical and Computer Engineering Projected Schedule of Graduate Courses

The following table lists the ECE graduate courses currently projected to be offered at the Atlanta campus and through the video/internet distance education program. Classes taught at GT-Lorraine, GT-Shenzhen, or as part of study abroad programs are not listed.

The projected schedule of classes is normally updated each year during summer semester. The projected schedule for the coming year (2018-19) is fairly certain; changes will be reflected in the registration schedule for each term. The projected schedule for 2019-20 is preliminary and is likely to be modified significantly in summer 2019.

Additionally, summer schedules are subject to changes in student enrollment, budgets, and/or faculty availability. Summer graduate electives will be offered as faculty and resources are available, but there is no guarantee that any graduate electives will be offered in future summer terms. There are no current plans to offer graduate electives in Atlanta during future summer terms.

X = course scheduled to be offered

? = course may be offered in this term, based on prior years' schedules

ST = special topic course (offered as ECE 88xx)

video = course offered via video/internet in addition to on-campus section

altvid = course normally offered via video/internet in alternate years; not offered via video/internet this year

NOTE: Cross-listed courses (for satisfying MS and PhD domain requirements) are listed under multiple Technical Interest Areas.

Bioengineering	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6200 - Biomedical Applications of MEMS	3-0-3		X			X
ECE 6780 - Medical Image Processing (cross-listed in Digital Signal Processing) (Cross-listed with BMED/CS 6780)	3-0-3					
ECE 6786 - Medical Imaging Systems (cross-listed in Digital Signal Processing) (Cross-listed with BMED 6786)	3-0-3		X			
ECE 6787 - Quantitative Electrophysiology (Cross-listed with BMED/PHYS 6787)	3-0-3					
ECE 6790 - Information Processing Models in Neural Systems (Cross-listed with BMED 6790)	3-0-3		X			
ECE 8803 - Implantable Microelectronic Devices (Cross-listed with ECE 4803)	3-0-3					
ECE 8833 - Biomedical Sensing Systems (Cross-listed with ECE/BMED/ME 4781)	3-0-3	ST			ST	
Computer Systems and Software (previously part of Computer Engineering)						
Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020	
ECE 6100 - Advanced Computer Architecture	3-0-3	video	video		X	X
ECE 6102 - Dependable Distributed Systems	3-0-3		X			X
ECE 6110 - CAD for Computer Communication Netw	2-3-3					
ECE 6122 - Advanced Programming Techniques for Engineering Applications (Cross-listed with ECE 4122)	2-3-3	video			X	
ECE 6612 Computer Network Security (Cross-listed in Telecom)	3-0-3		X			X
ECE 7103 - Advanced Topics in Memory Systems	3-0-3					X
8813 - Advanced Computer Security (Cross-listed CS 8803)	3-0-3					
Introduction to Cyber-Physical Systems Security (8813A)	3-0-3	ST			ST	
ECE 8823 - GPU Architectures	3-0-3		ST			ST
ECE 8803 - Advanced Topics in Malware Analysis (Cross-listed with CS 8803)	3-0-3	ST			ST	
ECE 8823 - Interconnection Networks	3-0-3		ST			ST

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Digital Signal Processing	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6250 - Advanced Digital Signal Processing	3-0-3	X			X	
ECE 6254 - Statistical Machine Learning	3-0-3		video			X
ECE 6255 - Digital Processing of Speech Signals	3-0-3		X			
ECE 6258 - Digital Image Processing	3-0-3	video			altvid	
ECE 6260 - Data Compression and Modeling	3-0-3		X			
ECE 6271 - Adaptive Filtering	3-0-3					
ECE 6272 - Fund of Radar Signal Processing	3-0-3	video				
ECE 6273 - Methods Pattern Recog w/ Appl to Voice	3-0-3					X
ECE 6274 - Statistical Language Processing	3-0-3					X
ECE 6276 - DSP Hardware Systems Design (cross-listed in VLSI Systems & Digital Design)	2-3-3	X			X	
ECE 6279 - Spatial Array Processing	3-0-3		video			
ECE 6280 - Cryptography and Security	3-0-3					
ECE 6282 - Radar Imaging	3-0-3				X	
ECE 6500 - Fourier Techniques and Signal Analysis (cross-listed in *Systems and Controls and *Optics)	3-0-3		altvid		video	
ECE 6780 - Medical Image Processing (cross-listed in Bioengineering) (Cross-listed with BMED/CS 6780)	3-0-3					
ECE 6786 - Medical Imaging Systems (cross-listed in Bioengineering) (Cross-listed with BMED 6786)	3-0-3		X			
ECE 7251 - Signal Detection and Estimation	3-0-3					
ECE 7252 - Advanced Signal Processing Theory	3-0-3					
ECE 8803 Probabilistic Graphical Models in Machine Learning	3-0-3		ST			ST
ECE 8823 Convex Optimization for SP	3-0-3		ST			ST
ECE 8843 - Mathematical Foundations of Machine Learning (cross-listed with ISYE/CS/BMED)	3-0-3	ST			ST	

Electrical Energy	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6320 - Power Systems Control and Operation	3-0-3	video			video	
ECE 6321 - Power System Stability	3-0-3					X
ECE 6323 - Power System Protection	2-2-3					video
ECE 6331 - Power Electronic Circuits	3-0-3	video			X	
ECE 6335 - Electric Machinery Analysis	3-0-3		X			
ECE 6336 - Dynamics & Ctrl Electric Machine Drives	3-0-3				X	
ECE 8803 - Power Systems Economics	3-0-3					ST
Introduction to Cyber-Physical Energy Systems	3-0-3	ST			ST	
High Voltage Engineering	2-3-3		ST			ST
Principles of Smart Electricity Grids	3-0-3		ST			

Electromagnetics	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6350 - Applied Electromagnetics	3-0-3	X			X	
ECE 6360 - Microwave Design	3-0-3		X			X
ECE 6370 - Electromagnetic Radiation and Antennas	3-0-3		X			X
ECE 6380 - Intro to Computational Electromagnetics	3-0-3	X				
ECE 6390 - Satellite Comm and Navigation Systems (cross-listed in Telecommunications)	3-0-3					X
ECE 8833 - Advanced Topics in Analytical Electromagnetics	3-0-3				ST	
8823 - Radio Wave Propagation in Earth & Space Environments	3-0-3		ST			

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Electronic Design & Applications	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6412 - Analog Integrated Circuit Design	3-0-3		X			X
ECE 6414 - Analog Integrated System Design	3-0-3		X			X
ECE 6420 - Wireless IC Design	3-0-3	X			X	
ECE 6422 - Interface IC Design for MEMS and Sensors	3-0-3	X			X	
ECE 6435 - Neuromorphic Analog VLSI Circuits	3-0-3					X
ECE 6444 - Silicon-Based Heterostructure Devices and Ckts (cross-listed in Nanotechnology)	3-0-3	X				
Nanotechnology	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6229 - Introduction to MEMS (Cross-listed with CHBE/ME 6229)	3-0-3	X			X	
ECE 6444 - Silicon-Based Heterostructure Devices and Ckts (cross-listed in Electronic Design & Applications)	3-0-3	X				
ECE 6450 - Intro to Microelectronics Technology	3-0-3	altvid			video	
ECE 6451 - Intro to the Theory of Microelectronics	3-0-3	video			video	
ECE 6453 - Theory of Electronic Devices	3-0-3		video			video
ECE 6455 - Semiconductor Process Control	3-0-3					
ECE 6456 - Solar Cells	3-0-3	X			X	
ECE 6458 - Gigascale Integration	3-0-3					X
ECE 6460 - Microelectromechanical Devices (Cross-listed with CHBE/ME 6460)	3-0-3		X			
ECE 6542 - Optoelectronics: Dev, Integr, Pkg, Sys (cross-listed in Optics and Photonics)	3-0-3					
ECE 6771 - Optoelectronics: Matls, Processes, Dev (cross-listed in Optics and Photonics) (Cross-listed with PHYS 6771)	3-0-3		X			X
ECE 6776 - Microelectronic Systems Packaging Technologies (Cross-listed with ME/MSE 6776)	3-0-3	X			X	
ECE 6779 - Thermal Engineering for Packaging of Micro and Nano Systems (Cross-listed with ME 6779)	3-0-3					
8823 Memory Device Technologies and Applications	3-0-3	ST				
Optics and Photonics	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6500 - Fourier Techniques and Signal Analysis (cross-listed in *Systems & Controls and *DSP)	3-0-3		altvid		video	
ECE 6501 - Fourier Optics and Holography	3-0-3		X			
ECE 6510 - Electro-Optics	3-0-3	altvid			video	
ECE 6520 - Integrated Optics	3-0-3	video			altvid	
ECE 6522 - Nonlinear Optics	3-0-3		X			
ECE 6530 - Modulation, Diffractive & Crystal Optics	3-0-3	X			X	
ECE 6540 - Organic Optoelectronics	3-0-3					X
ECE 6542 - Optoelectronics: Dev, Integr, Pkg, Sys (cross-listed in Nanotechnology)	3-0-3					X
ECE 6543 - Fiber Optic Networks	3-0-3					
ECE 6771 - Optoelectronics: Matls, Processes, Dev (cross-listed in Nanotechnology) (Cross-listed with PHYS 6771)	3-0-3		X			X

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Systems and Controls	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6500 - Fourier Techniques and Signal Analysis (cross-listed in *Optics and *DSP)	3-0-3		altvid		video	
ECE 6550 - Linear Systems and Controls	3-0-3	video		video	video	
ECE 6551 - Digital Control	3-0-3				video	
ECE 6552 - Nonlinear Systems and Control	3-0-3		video			video
ECE 6553 - Optimal Control and Optimization	3-0-3		video			video
ECE 6554 - Adaptive Control	3-0-3		video			video
ECE 6555 - Optimal Estimation	3-0-3					
ECE 6558 - Stochastic Systems	3-0-3	video				
ECE 6560 - PDEs in Image Proc and Comp Vision	3-0-3		X			X
ECE 6561 - Computing for Control Systems	3-0-3					
ECE 6562 - Autonomous Control of Robotic Systems	3-0-3					
ECE 6563 - Networked Control Systems	3-0-3	video				
ECE 8750/1 - Robotics Research Fnd I/II	0-9-3		X			

Telecommunications	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6390 - Satellite Comm and Navigation Systems (cross-listed in Electromagnetics)	3-0-3		video			
ECE 6601 - Random Processes	3-0-3	video		video	altvid	
ECE 6602 - Digital Communications	3-0-3		video			X
ECE 6603 - Advanced Digital Communications	3-0-3					
ECE 6604 - Personal and Mobile Communications	3-0-3	X			X	
ECE 6605 - Information Theory	3-0-3	video			altvid	
ECE 6606 - Coding Theory and Applications	3-0-3		video			X
ECE 6607 - Computer Communication Networks	3-0-3	altvid			video	
ECE 6610 - Wireless Networks	3-0-3		video			video
ECE 6612 - Computer Network Security (cross-listed in Computer Systems and Software)	3-0-3		X			X
ECE 6613 - Broadband Access Networks	3-0-3	X				
ECE 6615 - Sensor Networks	3-0-3		video			video

VLSI Systems and Digital Design (previously part of Computer Engineering)	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6130 - Advanced VLSI Systems	3-0-3	X			X	
ECE 6132 - Computer-Aided System Design	3-0-3					
ECE 6133 - Physical Design Automation VLSI Sys	3-0-3		X			X
ECE 6140 - Digital Systems Test	3-0-3	video			X	
ECE 6276 - DSP Hardware Systems Design (cross-listed in Digital Signal Processing)	2-3-3					
ECE 7141 - Advanced Digital Systems Test	2-3-3					
ECE 8893 - Digital Systems at Nanometer Nodes	2-3-3	ST				ST
ECE 8803 - Computational Aspects of Cyber-Physical Systems	3-0-3		ST			
ECE 8893 - Digital Design with Modern VLSI Devices	2-3-3					
8813A Advanced Digital Design with Verilog	3-0-3		ST			
ECE 8873 Advanced Hardware Oriented Security and Trust	3-0-3	ST				ST

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Courses not in ECE MS/PhD domains	Credits	Fall 2018	Spring 2019	Summer 2019	Fall 2019	Spring 2020
ECE 6730 - Modeling & Simulation: Foundations and Implementation (Cross-listed with CSE 6730)	3-0-3		video			X
ECE 6792 - Manufacturing Seminar (Cross-listed with ISYE/ME 6792)	1-0-1	X	X		X	X
ECE 7785 - Intro Robotics Research (Cross-listed with AE/BMED/CS/ME 7785)	3-0-3	X			X	
ECE 8001 - ECE Seminar	1-0-1	X			X	
ECE 8002 - ECE Seminar	1-0-1		X			X
ECE 8022 - Professional Communication Seminar	1-0-1	X	X		X	X
ECE 8750 - Robotics Research Foundation I (Cross-listed with AE/BMED/CS/ME 8750)	0-9-3		X		X	X
ECE 8751 - Robotics Research Foundation II (Cross-listed with AE/BMED/CS/ME 8751)	0-9-3		X		X	X
GETL 8000 - GTA Preparation	1-0-1	X			X	
8801 A - Are You Thinking of Becoming an Academic?	1-0-1	ST			ST	
Tech Ventures: Teaming, innovation and Entrepreneurship (8803)	3-0-3	ST			ST	
ECE 8863 - Ethics of Biotechnology and Bioengineering Research (Cross-listed with PHIL 6710/APPH 6710)		ST				
ECE 8893 - Future Faculty Practicum	2-3-3		X			X