

## School of Electrical and Computer Engineering Projected Schedule of Undergraduate Courses

The following table lists the ECE undergraduate 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 (2016-17) is fairly certain; changes will be reflected in the registration schedule for each term. The projected schedule for 2017-18 is preliminary and is likely to be modified significantly in summer 2017.

Additionally, summer schedules are subject to changes in student enrollment, budgets, and/or faculty availability. Based on previous years' schedules, the School is likely to offer most core courses and, possibly, some senior electives. Note that the required culminating design course, ECE 4012, is not offered in 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 38xx or ECE 48xx)

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

Core Courses	Credits	Summer 2016	Fall 2016	Spring 2017	Summer 2017	Fall 2017	Spring 2018
ECE 2020 - Fund of Digital System Design	3-0-3	X	X	X	X	X	X
ECE 2026 - Intro to Signal Processing	2-3-3	X	X	X	X	X	X
ECE 2031 - Digital Design Lab	1-3-2	X	X	X	X	X	X
ECE 2035 - Programming for HW/SW Sys	3-3-4	X	X	X	X	X	X
ECE 2036 - Engineering Software Design	3-3-4	X	X	X	X	X	X
ECE 2040 - Circuit Analysis	3-0-3	X	X	X	X	X	X
ECE 3005 - Prof & Tech Commun for ECE	1-0-1	X	X	X	X	X	X
ECE 3006 - Co-curricular Prof Commun for ECE	0-0-0	X	X	X	X	X	X
ECE 3020 - Mathematical Foundations of Computer Engineering	3-0-3	X	X	X	X	X	X
ECE 3025 - Electromagnetics	3-0-3	X	X	X	X	X	X
ECE 3030 - Physical Foundations of Computer Engineering	3-0-3	X	X	X	X	X	X
ECE 3040 - Microelectronic Circuits	4-0-4	X	X	X	X	X	X
ECE 3043 - Measur, Circuits, & Microelec Lab	1-3-2	X	X	X	X	X	X
ECE 3056 - Architecture, Concurr, Energy in Comput	3-0-3	X	X	X	X	X	X
ECE 3072 - Energy Systems	2-3-3	X	X	X	X	X	X
ECE 3077 - Probability & Statistics for ECE	3-0-3	X	X	X	X	X	X
ECE 3084 - Signals and Systems	3-0-3	X	X	X	X	X	X
ECE 4043 - Senior Analog Electronics Lab	1-3-2	X	X	X	X	X	X

Major Design Courses	Credits	Summer 2016	Fall 2016	Spring 2017	Summer 2017	Fall 2017	Spring 2018
ECE 4011 - ECE Culminating Design Proj I	2-0-2	X	X	X	X	X	X
ECE 4012 - ECE Culminating Design Proj II	1-6-3		X	X		X	X

### UNDERGRADUATE ELECTIVES

**NOTE: Electives approved as breadth courses for EE majors graduating under the 2011-12 and earlier curricula.**

Bioengineering	Credits	Summer 2016	Fall 2016	Spring 2017	Summer 2017	Fall 2017	Spring 2018
ECE 1750 - Intro to Bioengineering (Cross-listed with BMED/CHBE/ME/MSE 1750)	3-0-3						
ECE 4781 - Biomedical Instrumentation (Cross-listed with CHBE/ME 4781)	3-0-3		X			X	
ECE 4782 - Biosystems Analysis (Cross-listed with CHBE/ME 4782)	3-0-3			X			X
ECE 4783 - Intro. Medical Imaging Processing (Cross-listed with BMED 4783)	3-0-3						
ECE 4784 - Engineering Electrophysiology (Cross-listed with BMED 4784)	3-0-3		X			X	

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<b>Computer Systems and Software (previously part of Computer Engineering)</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 4100 - Advanced Computer Architecture	3-0-3		X	X		X	X
ECE 4110 - Internetwork Programming	3-3-4			X			X
ECE 4112 - Internetwork Security	2-3-3						
ECE 4122 - Advanced Programming Techniques for Engineering Applications (Cross-listed with ECE 6122)	2-3-3		X	X		X	
ECE 4180 - Embedded Systems Design	3-3-4		X	X		X	X
Multicore and GPU Programming for Video Games (Jointly taught with CS)	2-3-3	ST					
Introduction to Parallel Computing	2-3-3						
Introduction to Computer Security	3-3-4		ST	ST		ST	ST
Cloud Computing	3-0-3						
<b>Digital Signal Processing</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 4260 - Random Signals and Applications	3-0-3			X			X
ECE 4270 - Fundamentals of Digital Signal Proc	3-0-3		video	X		altvid	X
ECE 4271 - Applications of Digital Signal Processing	3-3-4			X			
ECE 4273 - Design Synth of Appl-Spec Signal Proc	2-3-3						
Analog Circuits for Music Synthesis	2-3-3						ST
<b>Electrical Energy</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 3300 - Energy Conversion	3-0-3		X	X		X	X
ECE 4320 - Power System Analysis & Control	3-0-3		altvid			video	
ECE 4321 - Power System Engineering	3-0-3			video			altvid
ECE 4325 - Electric Power Quality (converted from 6340)	3-0-3						
ECE 4330 - Power Electronics	2-2-3			X			X
ECE 4335 - Electric Machinery Analysis	3-0-3			X			
<b>Electromagnetics</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 4350 - Electromagnetic & Microwave Appl	3-0-3		X	X		X	X
ECE 4351 - EM Applications Lab	0-3-1						
ECE 4360 - RF-Microwave Measurement Lab	1-3-2						
ECE 4370 - Antenna Engineering	3-0-3		X			X	
ECE 4371 - Antenna Engineering Lab	0-3-1		X			X	
ECE 4390 - Intro to Radar & Electromagnetic Sensing	3-0-3			X			X
ECE 4391 - Electromagnetic Compatibility	3-0-3	X			X		
RFIDs: Fundamentals and Applications	3-0-3						
<b>Electronic Design &amp; Applications</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 3400 - Analog Electronics	3-0-3	X	X	X		X	X
ECE 3431 - Analog Electronics Lab	1-3-2						
ECE 4360 - RF-Microwave Measurement Lab	1-3-2						
ECE 4410 - Analog Filters	3-0-3						
ECE 4415 - RF Engineering I	3-0-3			X			X
ECE 4418 - RF Engineering II	3-0-3						X
ECE 4420 - Digital Integrated Circuits	3-0-3		X			X	
ECE 4430 - Analog Integrated Circuits	3-0-3		X			X	
ECE 4435 - Operational Amplifier Design	2-3-3			X			X
ECE 4445 - Audio Engineering	3-0-3		X	X		X	X
ECE 4446 - Audio Engineering Laboratory	0-3-1		X	X		X	X
Guitar Amplification and Effects	2-3-3			ST			
<b>Microsystems</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 3450 - Semiconductor Devices	3-0-3	X	X	X	X	X	X
ECE 4451 - Semicon Dev for Wireless & Fiber Com	3-0-3						
ECE 4452 - Integrated Circuit Fabricaton (Formerly ECE 4752)	2-3-3	X	X	X	X	X	X

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ECE 4460 - Intro to Electronic Systems Packaging	3-0-3				X			X
ECE 4754 - Electronics Packaging Assembly, Reliability, Thermal Management, and Test (Cross-listed with ME/MSE 4754)	1-6-3				X			X
ECE 4755 - Package Substrate Fabrication (Cross-listed with CHBE/MSE 4755)	1-6-3		X				X	
Devices for Renewable Energy	3-0-3				ST		ST	
Semiconductor Device and Materials Characterization	3-0-3							
<b>Optics and Photonics</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>	
ECE 4500 - Optical Engineering	3-0-3		X	X		X	X	
ECE 4502 - Optical Fiber Communications (Formerly ECE 4501)	3-3-4		X			X		
ECE 4751 - Laser Theory and Applications	3-0-3	X			X			
<b>Systems and Controls</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>	
ECE 3550 - Feedback Control Systems	3-0-3		X	X	X	X	X	
ECE 4550 - Control System Design	3-3-4	X	X		X	X	X	
ECE 4551 - System and Controls I	3-3-4							
ECE 4555 - Embedded and Hybrid Control Systems	3-0-3							
ECE 4560 - Intro to Automation and Robotics	3-3-4		X					
ECE 4562 - Neural Netw & Fuzzy Logic in Control	2-3-3							
Game Theory and Multiagent Systems	3-0-3							
ECE 4570 - System Theory for Commun & Control	3-3-4			X				
ECE 4580 - Computational Computer Vision	3-0-3			X				
ECE 4761 - Industrial Controls and Manufacturing (Cross-listed with PTFE 4761)	2-3-3		X			X		
Numerical Meth for Optimization & Optimal Cntrl	3-0-3			ST				
<b>Telecommunications</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>	
ECE 3600 - Computer Communications	3-0-3	X	X	X	?	X	X	
ECE 4601 - Communication Systems	3-0-3		X			X		
ECE 4604 - Network Design and Simulation	3-3-4							
ECE 4605 - Advanced Internetworking	3-3-4		X			X		
ECE 4606 - Wireless Communications	3-0-3			X			X	
ECE 4607 - Mobile and Wireless Networks	3-0-3			X			X	
ECE 4612 - Telecom Systems Lab (formerly ECE 4602)	0-3-1			X			X	
Mobile Video Networking	3-0-3							
<b>VLSI Systems and Digital Design (previously part of Computer Engineering)</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>	
ECE 3150 - VLSI & Adv Digital Design	3-3-4			X			X	
ECE 4130 - Advanced VLSI Systems	3-3-4		X	X		X	X	
ECE 4170 - Intro to HDLs w/ Appl to Digital Sys Des	2-3-3							
ECE 4181 - Embedded Computing Systems	3-3-4		X			X		
Computer Aided Design Tools	3-3-4							
<b>School-Wide Electives</b>	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>	
ECE 1010 - Introduction to ECE Design	1-3-2		X			X		
ECE 2001 - ECE Seminar	1-0-1		X			X		
ECE 2002 - ECE Seminar	1-0-1			X			X	
ECE 2003 - ECE Seminar	1-0-1							
COE 3002 - Intro Microelec & Nanotech Revolution	3-0-3		restricted section			restricted section		
GT 1000 - GT Freshman Seminar	1-0-1		X			X		
Transition Skills for Transfer Students	1-0-1		ST			ST		
Practical Skills and Design	0-3-1		ST	ST		ST	ST	
How Does SIRI Know? Audio & Video Processing (Honors Program Seminar)	3-0-3							
Changing the World, One Digital Design Project at a Time	2-3-3							

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Vertically Integrated Projects Program	varies		X	X		X	X
<b>Service Courses (non-ECE majors)</b>							
	<b>Credits</b>	<b>Summer 2016</b>	<b>Fall 2016</b>	<b>Spring 2017</b>	<b>Summer 2017</b>	<b>Fall 2017</b>	<b>Spring 2018</b>
ECE 3710 - Circuits & Electronics	2-0-2	X	X	X	X	X	X
ECE 3741 - Instrumentation & Electronics Lab	0-3-1	X	X	X	X	X	X