

College of Engineering and Computer Science

Electrical Engineering

Fall 2016

Name _____

SUID _____

pr= prerequisite, co=corequisite

Track: _____

Minor: _____

MATHEMATICS (19)

MAT295	Calculus 1	(4)_____	4							
MAT296	Calculus 2 (pr: MAT 295 min C-)	(4)_____		4						
MAT397	Calculus 3 (pr: MAT 296 min C-)	(4)_____			4					
MAT485	Diff Eqn & Matrix Algebra for Engrs (pr: MAT 397)	(3)_____				3				
CIS321	Probability and Statistics (pr: MAT 295)	(4)_____					4			

SCIENCES (15)

CHE106	General Chemistry I	(3)_____	3							
CHE107	General Chemistry I Lab (co: CHE 106)	(1)_____	1							
PHY211	General Physics 1 (co: PHY 221, MAT 295)	(3)_____		3						
PHY221	General Physics Lab 1 (co: PHY 211)	(1)_____		1						
PHY212	General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3)_____			3					
PHY222	General Physics Lab 2 (co: PHY 212)	(1)_____		1						
Science/Math Elective _____		(3)_____							3	

WRITING SKILLS (12)

WRT105	Studio 1: Practices of Academic Writing	(3)_____	3							
WRT205	Studio 2: Critical Research and Writing (pr: WRT 105)	(3)_____			3					
WRT307	Adv. Writing Studio: Professional Writing (pr:WRT 205)	(3)_____				3				
WRT401	Adv. Wrkshp Tech Com: Desgn Mthd (pr:WRT 105, 205)	(2)_____						2		
WRT402	Adv. Wrkshp Tech Com: Proto. & Constr. (pr: WRT 105, 205, 401)	(1)_____						1		

SOC. SCIENCE/HUMANITIES/GEN. ED. (18)

SSH Elective _____	(3)_____	3								
SSH Elective _____	(3)_____		3							
SSH Elective _____	(3)_____			3						
ECS392	Ethical Aspects of ECS	(3)_____						3		
Non-Tech Elective _____	(3)_____		3							
Non-Tech Elective _____	(3)_____								3	

ENGINEERING (10)

ECS101	Intro. to Engr. & Comp. Sci.	(3)_____	3							
ECS102	Intro. to Computing	(3)_____		3						
ECS 204	Mathematical Programming for Engineers	(1)_____			1					
CSE261	Digital Logic Design	(3)_____				3				

ELECTRICAL ENGINEERING (36)

ELE231	Electrical Engr. Fundamentals I (pr: MAT 295)	(3)_____		3						
ELE232	Electrical Engr. Fundamentals II (pr: ELE 231)	(3)_____			3					
ELE291	Electrical Engr. Lab. I (co: ELE 231)	(1)_____		1						
ELE292	Electrical Engr. Lab. II (pr: 291, co: ELE 232)	(1)_____			1					
ELE314	Intro to Power Engineering (pr: ELE 231)	(3)_____					3			
ELE324	Electromagnetics I (pr: MAT 397, PHY 212)	(3)_____				3				
ELE331	Digital Circuits & Systems (pr: ELE 232)	(3)_____				3				
ELE333	Analog Circuits (pr: ELE 231, 232)	(3)_____					3			
ELE346	Semiconductor Devices* (pr: PHY 212)	(3)_____			3					
ELE351	System and Signal Analysis (pr: ELE 232, MAT 296)	(3)_____				3				
ELE391	Digital Circuits Laboratory (pr: ELE 292, co: ELE 331)	(3)_____				3				
ELE392	Analog Circuits Laboratory (pr: ELE 292, co: 333)	(3)_____					3			
ELE491	Senior Design Project 1	(1)_____						1		
ELE492	Senior Design Project 2 (pr: ELE 491)	(3)_____							3	

TECHNICAL ELECTIVES (18)

Select Two of the Following 3 Courses:		()_____						3		
ELE312	Control Systems* (3) (pr: ELE 351)	()_____						3		
ELE325	Electromagnetics II* (3) (pr: ELE 324 or PHY 424)	_____								
ELE352	Digital Signal Processing (3) (pr: ELE 351)	_____								
And Another 4 Technical Electives:		(3)_____							3	
Tech Elective _____	(3)_____								3	
Tech Elective _____	(3)_____									3
Tech Elective _____	(3)_____									3

FREE ELECTIVES (4)

Free Elective _____	(3)_____							3		
Free Elective _____	(1)_____									1

TOTAL CREDITS	132	17	17	16	16	19	18	13	16	
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ELECTRICAL ENGINEERING

Curriculum Notes

2016-2017

- Electrical Engineering (EE) students must complete 18 credit hours in social sciences/humanities/Non-Technical electives using any one of the following options:

Option 1: Students may use their electives to complete a non-technical minor. Students pursuing this option must plan early in their degree program.

Option 2: Complete the divisional perspective requirements of humanities division and take the remaining electives from the social sciences division.

Option 3: Complete the divisional perspective requirements of social sciences division and take the remaining electives from the humanities division.

- In the EE program, tracks of specialization (described in the *2016-2017 Syracuse University online Undergraduate Course Catalog: <http://coursecatalog.syr.edu>*) and minors are used to regulate technical electives. A student must complete four technical elective courses in Electrical Engineering or Computer Engineering. At a minimum, two of these courses must complete one EE track. Students need to complete only one EE track (two EE elective courses). If a student chooses to complete two tracks, there are 12 credits of technical electives. If a student chooses to complete one EE track and a technical ECS minor, the technical electives are increased to 21 credits. Courses that are not required for students who complete a technical minor are ELE 346, 325 and 312.
- First year courses in Physics, Mathematics and computer programming may not be used as unspecified electives.

Footnotes to the Curriculum Table:

- * Students who choose to complete a technical ECS minor may replace these courses with technical electives.

Tracks (Technical Electives)

Tracks are intended to provide a cohesive set of technical electives for electrical engineering students. A track usually consists of a group of four courses (12 credits). In the Department of Electrical Engineering and Computer Science there are three tracks in electrical engineering.

Communications Track:

ELE 351	System and Signal Analysis	3	
ELE 352	Digital Signal Processing		3

And two of the following:

ELE 551	Communication Systems	3	
ELE 458	Data Networks: Basic Principles	3	
ELE 591	Special Topics in Communications	3	
ELE 452	Digital Audio Signal Processing	3	

Electromagnetics Track:

ELE 324	Electromagnetics I		3
ELE 325	Electromagnetics II*		3

And two of the following:

ELE 424	Fundamentals of RF & Microwaves		3
ELE 425	Microwave Engineering		3
ELE 525	Electromagnetics Compatibility		3
ELE 524	Intro to Applied Optics		3

Power Track:

ELE 324	Electromagnetics I		3
ELE 333	Analog Circuits		3

And two of the following:

ELE 416	Electromechanical Devices		3
ELE 514	Electric Power Systems		3
ELE 417	Power Electronics		3
ELE 418	Sensors and Measurements		3
ELE 591	Distributed Source & Integration in Smart Grid		3

* Students who choose to complete a technical ECS minor may replace these courses (ELE346, ELE325, and ELE312) with technical electives.