

# College of Engineering and Computer Science

Electrical Engineering

Fall 2017

Name \_\_\_\_\_

SUID \_\_\_\_\_

pr= prerequisite, co=corequisite

Track: \_\_\_\_\_

Minor: \_\_\_\_\_

	CREDIT GRADE	FIRST-YEAR		SOPHOMORE		JUNIOR		SENIOR		VAR +/-
		F	S	F	S	F	S	F	S	
<b>MATHEMATICS (18)</b>										
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					
MAT521 Probability and Statistics (pr: MAT 295)	(3)_____					3				
<b>SCIENCES (15)</b>										
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	
<b>WRITING SKILLS (12)</b>										
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	
<b>SOC. SCIENCE/HUMANITIES/GEN. ED. (18)</b>										
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	
<b>ENGINEERING (10)</b>										
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					
<b>ELECTRICAL ENGINEERING (36)</b>										
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	
<b>TECHNICAL ELECTIVES (18)</b>										
<b>Select Two of the Following 3 Courses:</b>										
ELE312 Control Systems* (3) (pr: ELE 351)	( ) _____						3			
ELE352 Digital Signal Processing (3) (pr: ELE 351)	( ) _____						3			
ELE424 Fundtls of Radio Freq. & Microwaves (3) (pr: ELE 232)	_____									
<b>And Another 4 Technical Electives:</b>										
Tech Elective _____	(3)_____							3		
Tech Elective _____	(3)_____							3		
Tech Elective _____	(3)_____								3	
Tech Elective _____	(3)_____								3	
<b>FREE ELECTIVES (5)</b>										
Free Elective _____	(2)_____						2			
Free Elective _____	(3)_____							3		
<b>TOTAL CREDITS</b>		<b>132</b>	<b>17</b>	<b>17</b>	<b>16</b>	<b>16</b>	<b>18</b>	<b>17</b>	<b>15</b>	<b>16</b>

# ELECTRICAL ENGINEERING

## Curriculum Notes

2017-2018

1. 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.

2. In the EE program, tracks of specialization (described in the *2017-2018 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. 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.
3. 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	Electromagnetic Compatibility	3
ELE 524	Intro to Applied Optics	3

#### Power Track:

ELE 324	Electromagnetics I	3
ELE 314	Introduction to Power Engineering**	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	Special topics in Power	3

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

\*\*To be approved by EECS faculty