ELECTRICAL ENGINEERING - Catalog Year 2024

Total Credits = | 122 -125

Freshman Year *Fall* Semester

Course Code	Description	Cr	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
ECN 201	Principles of Microeconomics (A2)	3	
EGR 105	Foundations of Engineering I (A4)	1	
MTH 141 +	Calculus I (A1, B3)	4	
	General Education Outcome(s)*	3	
		15	

Freshman Year *Spring* Semester

Course Code	Description	Cr	
CSC 200	Computer Problem Solving	4	
EGR 106	Foundations of Engineering II (A4)	2	
ELE 101	Intro to Electrical Engineering	1	
MTH 142 +	Calculus II (A1, B3)	4	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	
		15	

Sophomore Year *Fall* Semester

Course Code	Description	Cr	
ELE 201	Digital Circuit Design	3	
ELE 202	Digital Circuit Design Lab	1	
MTH 244	Differential Equations	3	
PHY 204	Elementary Physics II (A1)	3	
PHY 274	Elementary Physics Lab II (A1)	1	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		17	

Sophomore Year *Spring* Semester

Course Code	Description	Cr	
ELE 205	Microprocessors	2	
ELE 206	Microprocessor Lab	1	
ELE 212 +	Linear Circuit Theory	4	
ELE 215	Linear Circuits Lab	1	
MTH 243 +	Calculus for Functions of Several Vars (A1, B3)	3	
PHY 205	Elementary Physics III Lec (A1, B3)	3	
PHY 275	Elementary Physics III Lab (A1, B3)	1	
		15	

Admission to the COE required for enrollment in "300" level and higher COE courses. Admission requires at least a 2.0 cumulative GPA and a C- or higher in each of the following; EGR 105 & 106, CHM 101/102, MTH 141 & 142, PHY 203/273, and either PHY 204/274 *or* CHM 112/114

Junior Year *Fall* Semester

Course Code	Description	Cr	
ELE 313 +	Linear Systems	3	
ELE 338 +	Electronics I	3	
ELE 339	Electronics I Lab	1	
MTH 215 +	Linear Algebra	3	
MTH 451 *or* ISE 311	Intro to Probability and Statistics *or* Probability and Statistics for Engineers	3	
	General Education Outcome(s)*	3	
		16	

Junior Year *Spring* Semester

Course Code	Description	Cr	
ELE 301	Digital Design with FPGAs	3	
ELE 302	Digital Design with FPGAs Lab	1	
ELE 314	Linear Systems and Signals	3	
ELE 322	Electromagnetic Fields I	4	
ELE 343	Electronics II	3	
ELE 344	Electronics II Lab	1	
		15	

Senior Year *Fall* Semester

Course Code	Description	Cr	
ELE 400	Intro to Professional Practice	1	
ELE 480 +	Capstone Design I (D1)	3	
	Professional Elective**	4	
	Professional Elective**	3-4	
	Technical Elective***	3-4	
		14 -16	

Senior Year *Spring* Semester

Course Code	Description	Cr	
ELE 481 +	Capstone Design II	3	
	Professional Elective**	3-4	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
		15 -16	

*General Education Outcomes: if all Outcomes are satisfied in fewer spaces than provided, you must complete additional coursework of your choice (Free Elective) to ensure you have earned at least 120 credits as required to earn a BS degree. See the "General Education Outcomes" section at the bottom of page two for more information on satisfying these requirements.

**Professional Elective: Three (3) courses from: ELE 423/424, 425, 435/436, 446, 447/448, 456, 457, 458/459, of which at least one (1) must include a lab component (423/424, 435/436, 447/448, 458/459).

***Technical Elective: Either an additional course from the list of Professional Electives = above; ELE 405/406, 408/409, 437, 438, 470; or with prior approval of the ECBE Department chairperson, any other 300-, or 400-level College of Engineering course not required by the ELE major.

+Course prerequisites include grade requirements in previous coursework, see catalog or eCampus course description for details

Name_____ ID # _____

ELECTRICAL ENGINEERING - Catalog Year 2024

122-125 Credits

SPECIFIED MATH, SCIENCE, AND ENGINEERING COURSES											
INTRODUCTORY ENGINEERING						**ENGINEERING SCIENCE AND DESIGN**					
Sem	Course	Cr	Grade	QP	Note	Sem	Course	Cr	Grade	QP	Note
	EGR 105 (A4)	1					ELE 101	1			
	EGR 106 (A4)	2					ELE 201	3			
		3					ELE 202	1			
MATHEMATICS							ELE 205	2			
	MTH 141 (A1 & B3)	4					ELE 206	1			
	MTH 142 (A1 & B3)	4					ELE 212	4			
	MTH 215	3					ELE 215	1			
	MTH 243 (A1 & B3)	3					ELE 301	3			
	MTH 244	3					ELE 302	1			
	MTH 451 *or* ISE 311	3					ELE 313	3			
		20					ELE 314	3			
NATURAL SCIENCES							ELE 322	4			
	CHM 101 (A1)	3					ELE 338	3			
	CHM 102	1					ELE 339	1			
	PHY 203 (A1)	3					ELE 343	3			
	PHY 273 (A1)	1					ELE 344	1			
	PHY 204 (A1)	3					ELE 400	1			
	PHY 274 (A1)	1					ELE 480 [capstone] (D1)	3			
	PHY 205 (A1 & B3)	3					ELE 481 [capstone]	3			
	PHY 275 (A1 & B3)	1									
		16						**42**			
COMPUTER SCIENCE						****PROFESSIONAL ELECTIVES**					
	CSC 200	4						4			
		4						3-4			
**TECHNICAL ELECTIVE								3-4			
		3-4						**10-13**			
		3-4									

*GENERAL EDUCATION OUTCOMES											
Sem	Course	Cr	Grade	QP	Note	Sem	Course	Cr	Grade	QP	Note
Science, Technology, Engineering, and Math (STEM) (A1)						**Civic Knowledge & Responsibilities (C1)**					
---	CHM & PHY (see above)	15	---	---	---						
Social and Behaviorial Sciences (A2)						**Global Responsibilities (C2)**					
	ECN 201	3									
Humanities (A3)						**Diversity & Inclusion (C3)**					
Arts & Design (A4)						**Ability to Synthesize (D1)**					
---	EGR 105 & 106 (see above)	3	---	---	---	---	ELE 480 (see above)	3	---		---
Write Effectively (B1)						**Grand Challenge (at least one course must be coded with a "G")**					
Communicate Effectively (B2)						**Free Elective**					
							If you fulfill all Outcomes in fewer spaces than indicated on page one, you can use those				
Mathematical, Statistical, or Computational Strategies (B3)						*additional spaces to take a course(s) of your choice to ensure you reach at least 120 earned credits*					
---	MTH (see above)	11	---	---	---						
Information Literacy (B4)											

*General Education Outcomes: at least 40 credits must be completed. (A1-D1) must be met by at least three credits. A single course may satisfy one or two outcomes, and at least one course must be a "Grand Challenge". No more than twelve credits can be from the same course code except HPR. General education courses may also be used to meet requirements of your major(s) or minor(s) when appropriate.

**Professional Elective: Three (3) courses from: ELE 423/424, 425, 435/436, 446, 447/448, 456, 457, 458/459, of which at least one (1) must include a lab component (423/424, 435/436, 447/448, 458/459).

***Technical Elective: Either an additional course from the list of Professional Electives = above; ELE 405/406, 408/409, 437, 438, 470; or with prior approval of the ECBE Department chairperson, any other 300-, or 400-level College of Engineering course not required by the ELE major.