

B.S. in Electrical Engineering

Program Learning Outcomes

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- An ability to communicate effectively with a range of audiences.
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Freshman Year	Credits	
	Fall	Spring
University Seminar	3	
M 171Q - Calculus I	4	
PHSX 220 - Physics I with Calculus	4	
EELE 101 - Introduction to Electrical Fundamentals	3	
WRIT 101W - College Writing I		3
PHSX 222 - Physics II with Calculus	4	
M 172 - Calculus II	4	
EELE 261 - Intro To Logic Circuits	4	
Year Total:	14	15
Sophomore Year	Credits	
	Fall	Spring
M 274 - Introduction to Differential Equation	4	
Select two of the following (M221, PHSX224, or CHMY 141&142)	7-8	
M 221 - Introduction to Linear Algebra		
PHSX 224 - Physics III		
CHMY 141 - College Chemistry I		
CHMY 142 - College Chemistry I Lab		
EELE 201 - Circuits I for Engineering	4	
University Core Elective		3
EGEN 350 - Applied Engineering Data Analysis		2
M 273 - Multivariable Calculus		4
EELE 203 - Circuits II for Engineering		4
CSCI 109 - C for Engineers and Scientists		3
Year Total:	15	16
Junior Year	Credits	
	Fall	Spring
University Core Elective*	3	
EELE 308 - Signals and Systems Analysis	4	
EELE 317 - Electronics	4	

EELE 371 - Microprocess HW and SW Systems	4	
EELE 334 - Electromagnetic Theory I	3	
EELE 321 - Introduction To Feedback Controls		3
EELE 355 - Energy Conversion Devices		4
Two EE Professional Electives*		6
Non-EE Professional Elective		3
Year Total:	18	16
Senior Year	Credits	
	Fall	Spring
University Core Elective	3	
EELE 488R - Electrical Engineering Design I	3	
Two EE Professional Electives*	6	
Non-EE Professional Elective*	3	
University Core Elective*		3
EELE 489R - Electrical Engr Design II		3
EELE 487 - Prof, Ethics & Engr Practices		1
EGEN 488 - Fundamentals of Engineering Exam		0
EE or Non-EE Professional Elective*		3
Two EE Professional Elective*		6
Year Total:	15	16
Total Program Credits:	125	

* Elective requirements include 18 credits of University Core electives designated University Seminar, Writing, Humanities, Social science, Diversity, and Arts classes, 27 credits of professional electives with a minimum of 18 credits in Electrical Engineering and a minimum of 6 credits outside of Electrical Engineering all from the professional electives list below. There must be a minimum of 11 credits at the 300 level or above in the student's professional electives package.

Professional Electives

ACTG 201	Principles of Financial Accounting	3
ACTG 202	Principles of Managerial Accounting	3
ASTR 371	Solar System Astronomy	4
ASTR 373	Extragalactic Astronomy	3
BCH 380	Biochemistry	5
& BCH 381	and Biochemistry Lab	
BIOB 105CS	Introduction to Biotechnology	3
BIOB 160	Principles of Living Systems	4
BIOB 170IN	Principles of Biological Diversity	4
BIOH 185	Integrated Physiology I	4
BIOH 201	Human Anatomy and Physiology I	4
BIOH 211	Human Anatomy and Physiology II	4
BIOM 103IN	Unseen Universe: Microbes	3
BMKT 325	Principles of Marketing	3
CHMY 143	College Chemistry II	4
& CHMY 144	and College Chemistry II Lab	
CHMY 211	Elements of Organic Chemistry	5
& CHMY 212	and Elements of Organic Chemistry Lab	
CHMY 321	Organic Chemistry I	4
& CHMY 322	and Organic Chemistry I Lab	
CHMY 323	Organic Chemistry II	4
& CHMY 324	and Organic Chemistry II Lab	
CSCI 132	Basic Data Structures and Algorithms	4
CSCI 232	Data Structures and Algorithms	4
CSCI 246	Discrete Structures	3

CSCI 300 & 400 level courses, no more than 1 cr CSCI 494

EBME 410	Fundamentals of Bioelectronics for Bioinstrumentation	4
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ECNS 309	Managerial Economics	3
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EELE 300 & 400 level courses, excluding EELE 354

EGEN 200, 300, & 400 level courses

EIND 300 & 400 level courses

EMEC 300 & 400 level courses

ERTH 101IN	Earth System Sciences	4
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ESOF 300 & 400 level courses

GPHY 121D	Human Geography	3
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GPHY 141D	Geography of World Regions	3
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GPHY 284	Intro to GIS Science & Cartog	3
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M 242	Methods of Proof	3
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M 300 & 400 level courses, excluding M 330

PHSX 300 & 400 level courses (no more than 1 cr PHSX 494),
and excluding PHSX 305RN and PHSX 499R

WRIT 221	Intermediate Tech Writing	3
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WRIT 429	Professional Writing	3
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