

THE UNIVERSITY OF SCRANTON  
COLLEGE OF ARTS & SCIENCES  
ELECTRICAL ENGINEERING

## About the Program

Electrical engineering is the application of physics and mathematics to the study of photonics and semiconductor devices, sensors, analog and digital electronic circuit design, power generation and delivery, telecommunications, image and signal processing, computer interfacing and robotics. Our curriculum at Scranton emphasizes design and analysis, using a project-based course structure.



[admissions.scranton.edu/electricalengineering](https://admissions.scranton.edu/electricalengineering)

## Outcomes & Opportunities

- Nearly all upper-class students obtain paid engineering internships during the summer. Examples of internship sites include NASA, Honda, Fairchild Semiconductor, Tobyhanna Army Depot, Hershey Corporation and Lockheed Martin.
- Engineering majors at Scranton are well prepared to excel in their chosen profession in the private, public and government sectors.
- Leading employers of recent graduates include BAE Systems, Lockheed Martin, Excelis and PSE&G.
- Some examples of jobs include electrical engineer, facility engineer, nuclear engineer, product marketing engineer and systems engineer.
- Many of our electrical engineering majors go on to graduate school while others enter the industry right after graduation.
- Examples of graduate schools that have admitted recent graduates include Drexel University, Lehigh University, Penn State University, SUNY Binghamton, University of Miami, University of Rochester and Yale University.

Scranton engineering students achieve top finishes in prestigious regional and national engineering competitions.



**SUCCESS AHEAD**

# ELECTRICAL ENGINEERING CURRICULUM

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
<b>FIRST YEAR</b>			
COGNATE	CHEM 112 - (E) General & Analytical Chemistry – PHYS 140/PHYS 140L - (E) Elements of Physics I	3	4
COGNATE	MATH 114 - (Q) Calculus I – MATH 221 - Calculus II <sup>1</sup>	4	4
GE WRTG	WRTG 107 - (FYW) Composition	3	
GE EP - COGNATE	ENGR 150 - (FYOC, FYDT) Foundations of Physics & Engineering – CMPS 134 - Computer Science I/ CMPS 134L - Computer Science I Lab	3	4
GE PHIL -	PHIL 120 - Introduction to Philosophy –		
GE T/RS	T/RS 121 - Theology I: Introduction to the Bible	3	3
GE FSEM	First Year Seminar <sup>2</sup>		
		<b>16</b>	<b>15</b>
<b>SECOND YEAR</b>			
MAJOR	E/CE 240 - Introduction to Computer Engineering/ EE 240L - Introduction to Computer Engineering Lab – EE 241/EE 241L - (EPW) Circuit Analysis	4	4
MAJOR	EE 250/EE250L - Computational Tools for Physics & Engineering	4	
COGNATE	ENGR 252 - Solid State Devices & Power Electronics		3
COGNATE	PHYS 141/PHYS 141L - (E) Elements of Physics II	4	
COGNATE	MATH 222 - Calculus III – MATH 341 - Differential Equations	4	4
GE PHIL	PHIL 210 - Ethics		3
GE HUMN	HUMN ELECT - Humanities Elective		3
		<b>16</b>	<b>17</b>
<b>THIRD YEAR</b>			
MAJOR	EE 343/EE 343L - Electronic Circuits I – EE 344/EE 344L - Electronic Circuits II	4	4
MAJOR	EE 346 - Digital Signal Processing – E/CE 340 - Digital Systems	3	3
COGNATE	PHYS 270/PHYS 270L - (W,EPW: Lab only) Elements of Modern Physics	4	
COGNATE	ENGR 350 - Applied & Engineering Mathematics	3	
COGNATE	COGNATE ELECT - Cognate Elective <sup>3</sup>		3
GE T/RS	T/RS 122 - Theology II: Introduction to Christian Theology		3
GE HUMN	HUMN ELECT - Humanities Electives	3	3
		<b>17</b>	<b>16</b>

	Department & Number - Descriptive Title of Course	Fall Cr.	Spr. Cr.
<b>FOURTH YEAR</b>			
MAJOR	EE 449/EE 449L - (EPW lab only) Embedded Systems	3	
MAJOR	EE 450 - Control Systems	3	
MAJOR	EE 451 - Communication Systems		3
MAJOR	EE 454 - Robotics Design Project & Professional Practice		3
MAJOR	EE 447 - Electromagnetics I – EE 448 - Electromagnetics II/EE 448L - Electromagnetics Design Laboratory	3	4
GE HUMN	HUMN ELECT - Humanities Electives	3	
GE S/BH	S/BH ELECT - Social/Behavioral Electives <sup>4</sup>	3	3
GE PHIL or T/RS	PHIL ELECT - Philosophy Elective or T/RS - Theology Elective		3
		<b>15</b>	<b>16</b>

**Total: 128 Credits**

**Accredited by the Engineering Accreditation Commission of ABET, [abet.org](http://abet.org)**

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## CONTACT INFORMATION

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**1.888.SCRANTON** or visit [admissions.scranton.edu](http://admissions.scranton.edu)

<sup>1</sup> ECO 153-154 is recommended by the department

<sup>2</sup> The selection of a First Year Seminar is likely to fulfill requirements both for the First Year Seminar and a General Education Requirement. Thus, the First Year Seminar will not add to the total credits for the semester. Talk with your advisor if you have any questions.

<sup>3</sup> An advanced technical elective approved by the department. Electrical Engineering majors starting with MATH 109 due to placement test results will have MATH 109 count as their cognate elective.

<sup>4</sup> ECO 153 - ECO 154 is recommended by the department.