

# BACHELOR OF SCIENCE IN ELECTRICAL POWER ENGINEERING TECHNOLOGY

## WHAT IS ELECTRICAL POWER ENGINEERING TECHNOLOGY?

Electrical Power Engineering Technology (EPET) is a field that encompasses the design, installation, maintenance, and operation of electrical power systems and equipment. It combines elements of electrical engineering and electronics with practical skills related to power generation, transmission, and distribution. This field is essential in ensuring the generation, distribution, conditioning, and utilization of electrical energy in a safe, efficient, and reliable manner. Electrical power engineering technologists specialize in planning and implementing electrical systems, including modifications to existing electrical systems that generate and use large amounts of electricity required for distribution networks. They play a pivotal role in maintaining the infrastructure necessary for daily life.

## CAREERS IN ELECTRICAL POWER ENGINEERING TECHNOLOGY

Students in the EPET program at the University of Houston (UH) Cullen College of Engineering's Technology Division are prepared for career paths within industrial settings as well as further education in graduate school, including power utilities, oil and gas, electrical equipment manufacturing, renewable generation, energy efficiency, energy data analytics and energy trading, and transportation electrification. The Cullen College of Engineering also has a dedicated Engineering Career Center which connects hundreds of students each year to internships and full-time positions.

## WHY EARN YOUR ELECTRICAL POWER ENGINEERING TECHNOLOGY DEGREE AT THE UNIVERSITY OF HOUSTON?

### ACADEMICS

At the Cullen College of Engineering's Technology Division, undergraduate students in EPET experience a top-tier, application-focused ABET-accredited education that integrates cutting-edge technology relevant to the electrical industry. Our curriculum remains ever evolving to keep pace with the latest industrial advancements.

The EPET undergraduate students build a solid foundation in measurement systems, analog and digital signal conditioning, microprocessor hardware and software, industrial electronics, rotating machinery, renewable energy systems, and smart grid. Students have the flexibility to tailor their curriculum to match their interests and career aspirations by choosing specialized coursework in power electronics, power system operations and planning or a blend of both.

The EPET curriculum encompasses various subjects, including electrical and poly-phase circuits, digital circuits and systems, microprocessor architecture, programmable logic controllers, motor control systems,

electrical power systems industry practices, electrical machines, power system protection, power electronics, power quality issues, alternate/renewable energy systems, project management, electrical system design, and smart grid. A strong foundation in mathematics and physics underpins the mastery of electrical power course materials.

Learn more at <https://dot.egr.uh.edu/programs/undergraduate/electrical-power-engineering-technology>

### RESEARCH

EPET faculty research focuses on the following key topics:

- Power Electronics applications in grid integration of renewable energy sources, electric vehicle charging infrastructure, wireless power transfer in subsea environment, and fast frequency regulation (FFR) in renewable energy dominated grid.
- Power system operations and planning, electricity market operations and design with advanced optimization and control theories, high performance computing techniques.
- Multi-energy based smart grid, equitable and community-energy transition, decarbonization of power and energy systems.

### SCHOLARSHIPS

Merit-based scholarships are awarded by the Cullen College of Engineering's Technology Division. Scholarships are also offered by the UH Office of Scholarships and Financial Aid. Additionally, the university's co-op program offers students the opportunity to receive career training while financing their education. [Learn more at https://dot.egr.uh.edu/advising/financial-aid/scholarships.](https://dot.egr.uh.edu/advising/financial-aid/scholarships)

### STUDENT ORGANIZATIONS

Students are encouraged to join academic and professional organizations to build leadership, communication, and networking skills. Members of student organizations receive career guidance from industry professionals and participate in activities that promote their field of study.

The Institute of Electrical and Electronics Engineers (IEEE) student chapter at the Cullen College of Engineering's Technology Division is a student organization that caters to students aspiring to enter the field of computer and electrical power engineering technology. Members have opportunities to network with industry professionals, faculty, and all levels of undergraduate students.

### ET/EPET FAST FACTS

**850/80** Total Undergraduate Students

**29/10** Total Faculty

**\$50,000 – \$100,000** Average Salary

**26:1** Student-to-Faculty Ratio Across the University



Technology Division  
Cullen College of Engineering

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## FOUR-YEAR ACADEMIC MAP 2023-2024

### YEAR 1

SEMESTER 1		SEMESTER 2		Total	
ELET 1400	Circuit Theory I & Lab	4	ELET 1401	Circuit Theory II & Lab	4
MATH 2413	Calculus I	4	MATH 2414	Calculus II	4
ENGL 1301	First Year Writing I	3	ENGL 1302	First Year Writing II	3
PHYS 1301/1101	College Physics I & Lab	4	PHYS 1302/1102	College Physics II & Lab	4
<b>Semester Hours 15</b>		<b>Semester Hours 15</b>		<b>30</b>	

### YEAR 2

SEMESTER 1		SEMESTER 2		Total	
ELET 2301/2101	Poly-Phase Circuits & Transformers/Lab	4	ELET 2305/2105	Semiconductor Dev & Circuits/Lab	4
ELET 3307/3107	Electrical Machines & Lab	4	ELET 2303/2103	Digital Systems & Lab	4
ELET 3300 or MATH 3321	Applied Math for ET or Engineering Mathematics	3	ELET 2300	Introduction to C++ Programming	3
HIST 1301	U. S. to 1877	3	HIST 1302	U.S. since 1877	3
CORE	Language, Philosophy & Culture	3	CORE	Creative Arts	3
<b>Semester Hours 17</b>		<b>Semester Hours 17</b>		<b>34</b>	

### YEAR 3

SEMESTER 1		SEMESTER 2		Total	
ELET 3301	Linear Systems Analysis	3	ELET 4303/4103	Power Distribution & Transportation/Lab	4
ELET 3405	Microprocessor Architecture	4	ELET 3312/3112	PLCs & Motor Control/Lab	4
TLIM 3363	Technical Communication	3	TLIM 3340	Org Leadership & Supervision	3
MECT 1365	Elements of Materials & Processes	3	MECT Elective	See advisor	3
CORE	Social & Behavioral Sciences	3	ELET Elective		3
<b>Semester Hours 16</b>		<b>Semester Hours 17</b>		<b>33</b>	

### YEAR 4

SEMESTER 1		SEMESTER 2		Total	
ELET 4317	Elect. Systems Safety & Protect	3	ELET 4319	Elect. Power Sys & Industry Prac	3
ELET 4305	Senior Design in Electrical Power Engineering Technology	3	ELET 4105	Senior Design in Electrical Power Engineering Technology Lab	1
ELET 4326/4126	Power Converter Circuits & Lab	4	ELET Elective		3
GOVT 2306	US & Texas Constitution & Politics	3	GOVT 2305	Federal Government	3
MECT 4188	Ethics in Engineering	1	Free Elective		3
<b>Semester Hours 14</b>		<b>Semester Hours 13</b>		<b>27</b>	
				<b>TOTAL SEMESTER HOURS 124</b>	

## FOR MORE INFORMATION

\*Students should meet with their academic advisor to formulate their own plan. Course offerings are subject to change.

UH Cullen College of Engineering Technology Division: <https://dot.egr.uh.edu/>  
 Electrical Power Engineering Technology Undergraduate Program: <https://dot.egr.uh.edu/programs/undergraduate/electrical-power-engineering-technology> | Email: [asc@uh.edu](mailto:asc@uh.edu)

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