

# BACHELOR OF SCIENCE IN APPLIED SCIENCE IN ELECTRICAL ENGINEERING TECHNOLOGY

## Bachelor of Science in Applied Science Degree

The electrical engineering technology program is based on the "two-plus-two" educational system which provides the student with the flexibility of earning an associate degree and a bachelor's degree according to his or her needs. After completing the requirements of the associate degree, the student may elect to either enter industry or, through an added two years of full-time study (averaging 17 hours per semester) or equivalent part-time study, earn the Bachelor of Science in Applied Science (BSAS).

The bachelor's degree program in electrical engineering technology prepares students for employment as engineering technologists or engineering designers. The students focus on analog and digital electronics communication systems, smart grid and power distribution, and computer networking systems. Co-op programs with various local companies enable EET students to gain experience and income during their junior and senior years. Many students work full or part-time while completing the BSAS degree taking evening classes. Students are encouraged to take the Fundamentals of Engineering (FE) exam as the first step toward professional registration.

### Program Educational Objectives

Educational objectives for the electrical engineering technology programs have been developed by faculty and the program industrial advisory committee to support the university, college, and School of Engineering Technology missions. Graduates of the EET bachelor degree are prepared to assist in the design and testing of electrical systems and may function independently in some areas.

During their first few years after earning the electrical engineering technology degree at YSU, graduates will have demonstrated the ability to:

- Secure employment in a technical career related to their Electrical Engineering Technology degree.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition consistent with their educational achievements.

### Accreditation and Registration

The electrical engineering technology bachelor program is accredited by the ETAC Accreditation Commission of ABET, <http://www.abet.org>. In most states, including Ohio, West Virginia and Pennsylvania, bachelor's degree graduates are qualified to take the Fundamentals of Engineering (FE) exam, and, with sufficient work experience, the Professional Engineers (PE) exam. Graduates are also qualified to apply to the National Institute for Certification in Engineering Technologies (NICET) for certification procedures in various specialty areas, depending on academic major and employment area.

Date of last campus visit: October, 2017

Accredited through: 2024

Next campus visit: 2023

Link to accrediting body: ABET (<http://www.abet.org>)

COURSE	TITLE	S.H.
<b>General Education Courses:</b>		
MATH 2670	Applied Calculus 2	5
ENGL 3743	Professional and Technical Writing	3
GER SPA		3
GER SPA		3
GER SS		3
GER AH		3
<b>Total GER Credit Hours: 20 s.h.</b>		
<b>Courses in the major:</b>		
EET 3745 & 3745L	Microprocessor Systems 2 and Microprocessor Systems 2 Lab	3
EET 3730 & 3730L	Logic Systems Design and Logic Systems Design Lab	3
EET 3700	Methods in Circuit Analysis	3
EET 3701	Transform Circuit Analysis	3
EET 3760 & 3760L	Variable Speed Drives and Variable Speed Drives Lab	3
EET 3712 & 3712L	Programmable Logic Controllers and PLC Laboratory	4
<b>EET or Technical Elective:</b>		3
<b>EET Electives:</b>		
EET 4820	Power System Protection and Control	
EET 4845	Microprocessor Systems 3	
EET 4850 & 4850L	Integrated Circuit Applications and Integrated Circuit Applications Lab	
EET 4890	Special Topics in EET	
<b>Technical Electives:</b>		
ISEN 3710	Engineering Statistics	
ISEN 3724	Engineering Economy	
CSIS 2610	Programming and Problem-Solving	
MET 3705	Thermodynamics	
MET 4860	Robotics Technology	
MET 4860L	Robotics Technology Laboratory	
EET 3780	Communication Systems	3
EET 4810	Electrical System Design	3
<b>EET Elective 48XX</b>		6
EET 4820	Power System Protection and Control	
EET 4845	Microprocessor Systems 3	
EET 4850 & 4850L	Integrated Circuit Applications and Integrated Circuit Applications Lab	
EET 48XX		
CCET 3705	Computing for Technologists	3
EET 4870	Process Control Technology	4
<b>Total Major Credit Hours: 41 s.h.</b>		
<b>Year 1</b>		
<b>Fall</b>		<b>S.H.</b>
ENTC 1501	Introduction to Engineering Technology	2
ENTC 1505	Engineering Technology Concepts	4
EET 1501 & 1501L	Circuit Theory 1 and Circuit Theory 1 Lab	4
MATH 1513	Algebra and Transcendental Function	5
CCET 1503	CAD Technology	2
CCET 1504	Drafting and Plan Reading	2
Semester Hours		19

<b>Spring</b>			<b>Spring</b>		
EET 1502 & 1502L	Circuit Theory 2 and Circuit Theory 2 Lab	4	EET 4870	Process Control Technology	4
MATH 1570	Applied Calculus 1	4	EET Elective <sup>2</sup>		3
ENGL 1550	Writing 1	3	Arts & Humanities GER <sup>1</sup>		3
PHIL 2626	Engineering Ethics (Arts and Humanities GER)	3	Social & Personal Awareness GER <sup>1</sup>		3
	Semester Hours	14	Semester Hours		13
<b>Year 2</b>			<b>Total Semester Hours</b>		
<b>Fall</b>			129		
EET 2605 & 2605L	Electronics 1 and Electronics 1 Laboratory	4	1 General Education Requirement: SPA = Social & Personal Awareness (2 required for BSAS) SS = Social Science (2 required for BSAS) AH = Arts & Humanities (2 required for BSAS)		
EET 2620 & 2620L	Digital Electronics and Digital Electronics Lab	3	2 EET Electives: 4820, 4845, 4850/L, 48XX (Special Topics) Technical Electives: ISEN 3720, ISEN 3724, MET 3705, MET 4860/L, CSIS 2620, EET 2653/L		
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory	4			
ENGL 1551	Writing 2	3			
ECON 2610	Principles 1: Microeconomics	3			
	Semester Hours	17			
<b>Spring</b>					
EET 3706 & 3706L	Electronics 2 and Electronics 2 Laboratory	4			
EET 3710 & 3710L	Electrical Machines and Electrical Machines Lab	4			
EET 3735 & 3735L	Microprocessor Architecture and Programming and Microprocessor Architecture and Programming Laboratory	3			
PHYS 1501	Fundamentals of Physics 1	4			
CMST 1545	Communication Foundations	3			
	Semester Hours	18			
<b>Year 3</b>					
<b>Fall</b>					
MATH 2670	Applied Calculus 2	5			
EET 3730 & 3730L	Logic Systems Design and Logic Systems Design Lab	3			
EET 3745 & 3745L	Microprocessor Systems 2 and Microprocessor Systems 2 Lab	3			
EET 3700	Methods in Circuit Analysis	3			
ENGL 3743	Professional and Technical Writing	3			
	Semester Hours	17			
<b>Spring</b>					
EET 3701	Transform Circuit Analysis	3			
EET 3760 & 3760L	Variable Speed Drives and Variable Speed Drives Lab	3			
EET 3712 & 3712L	Programmable Logic Controllers and PLC Laboratory	4			
EET or Technical Elective <sup>2</sup>		3			
Social Science GER <sup>1</sup>		3			
	Semester Hours	16			
<b>Year 4</b>					
<b>Fall</b>					
EET 3780 & 3780L	Communication Systems and Communication Systems Lab	3			
EET 4810	Electrical System Design	3			
EET Elective <sup>2</sup>		3			
CCET 3705	Computing for Technologists	3			
Social & Personal Awareness GER <sup>1</sup>		3			
	Semester Hours	15			

### program outcomes

#### BACHELOR OF SCIENCE IN APPLIED SCIENCE in Electrical engineering technology

Graduates of the Bachelor's Degree in Electrical Engineering Technology will possess the following competencies upon graduation:

- **Learning Outcome 1:** be able to apply principles of mathematics and applied science, to perform technical calculations and solve technical problems of the types commonly encountered in electrical engineering technology careers
- **Learning Outcome 2:** demonstrate the ability to identify, formulate, and present creative solutions to technical problems in a variety of specialty areas within the broad fields of electrical engineering technology.
- **Learning Outcome 3:** be able to function competently in a laboratory setting, making measurements, operating technical equipment, critically examining experimental results, and properly reporting on experimental results, including their potential for improvement
- **Learning Outcome 4:** be able to use modern computational tools for technical problem solving, including scientific calculators, computers, and appropriate software.
- **Learning Outcome 5:** demonstrate a broad education and knowledge of contemporary issues in a global and societal context, as necessary to develop professional and ethical responsibility, including responsibility to employers and to society at large.
- **Learning Outcome 6:** recognize the need for life-long learning and possess the skills to maintain and improve technical and non-technical abilities
- **Learning Outcome 7:** demonstrate an ability to communicate and function effectively with members of multi-disciplinary teams from a variety of backgrounds
- **Learning Outcome 8:** the ability to identify, formulate, and solve engineering problems in the following major electrical engineering technology disciplines: analog and digital electronics, communication systems, power, aerospace and computer systems.
- **Learning Outcome 9:** the knowledge of professional practice issues, with an understanding of social responsibilities and a respect for diversity