COLLEGE OF SCIENCE, TECHNOLOGY AND AGRICULTURE

Engineering Technology: Electrical & Control Option

SOUTHEAST MISSOURI STATE UNIVERSITY · 1873

Bachelor of Science (BS)

Electrical and Control Option

Engineering technology emphasizes the application of scientific and engineering techniques to a variety of real-world problems. Application is the key word in this definition, in that engineering technology emphasizes practical applications as well as theory. Engineering technologists work in the job spectrum between the engineer and the skilled technician with responsibilities closest to those of the engineer.

ABET Engineering Technology Accreditation Commission

Students in the electrical and control option focus on the electrical power and control systems. Within the area of power, students study motors, generators, complex power, three-phase systems, and transmission concepts. Within the area of controls, students examine many different control technologies, including microprocessors, FPGAs, PLCs, industrial robots, and other industrial controllers.

Engineering technology: electrical & control students will...

- Gain technical proficiency in the engineering technology practice and engage in life-long learning.
- Effectively use technology for problem solving, decision making, implementation, management, and optimization of systems and processes.
- Work effectively in a team environment.
- Maintain the highest ethical and professional standards with commitment to protect the public interest, safety, and the environment.
- Gain theory and laboratory practice in areas of digital and electronic systems; industrial instrumentation; electromechanical/mechanical/optical sensors; actuation systems; AC and DC drives; electrical machines and control; power electronics; energy management; microprocessors/embedded controls; automatic process control systems; and industrial automation and robotics.
- Be educated in the advanced techniques of system design and installation using innovative state-of-the-art technologies reinforced throughout the program by integrated laboratory experiences.

Career Planning

Career preparation is part of the mission of Southeast. 100% of programs offer our students an internship, study-abroad program, clinical opportunity, student teaching or research internship.

The Office of Career Services in Academic Hall 057 can provide students with professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

Demonstrated Career Proficiency is a Requirement of all Southeast Students		
CL001	First Semester	Students connect academic career planning by completing an online career assessment
CL002	Second Semester	Students learn more about resources available to enhance academic and career planning
CL003	Junior Year	Students learn about continued career planning, job search strategies, and networking
CL004	Senior Year	Students learn about resume development, professional communication, interviewing, and transitioning to the first job from college

Career Opportunities

- Industrial electrician
- PLC Programmer
- Electrical Technician
- Process Control Engineer
- Product Test Engineer
- Electronics Technician
- Instrumentation Engineer
- Engineering Technician
- Automation Systems Integrator
- Energy Manager
- Electrical Apprentice

Professional and Student Organizations

The Electric Vehicle Club offers members a chance to be involved in all aspects of designing and building electric vehicles, including both the electrical and mechanical systems. With sufficient interest, the club would like to enter vehicles into competitions and/or construct practical vehicles for commercial use. Open to all students, regardless of background or major.

To learn more
Office of Admissions
(573) 651-2590
admissions@semo.edu
www.semo.edu

To explore the College of Science, Technology and Agriculture online, visit
www.semo.edu/costa

For advising
Center for Academic Advising - North
(573) 651-5090
www.semo.edu/advising
advisingnorth@semo.edu

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Degree Map 2017-2018

This is a guide based on the 2017-2018 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use DegreeWorks to monitor their individual progress.

CURRICULUM CHECKLIST

Engineering Technology: Electrical & Control Option – 100 Hours Required

___ CH181 Basic Principles of Chemistry (5)
___ ET160 Basic Electricity/Electronics (3)
___ ET164 AC Principles & Circuits (3)
___ ET245 Logic Circuits (3)
___ ET260 Electronic Circuits Design/Analysis I (3)
___ ET304 Introduction to PLCs (3)
___ ET365 Industrial Electrical Power (3)
___ ET366 Microcontrollers (3)
___ ET367 Motor Control and Drive Systems (3)
___ ET374 Industrial Electronics (3)
___ ET468 Industrial Control (3)
___ ET470 Energy Management (3)
___ IM300Technical Communications (3)
___ IM301 Industrial Safety Supervision (3)
___ IM311 Statistical Process Control (3)
___ MA137 Precalculus (5)
___ MA140 Analytic Geometry & Calculus I (5)
___ MA144 Integral Calculus & Differential Equations (5)
___ MN220 Engineering Economic Analysis (3)
___ MN260 Technical Computer Programming Applications (3)
___ MN356 Robotic Fundamentals (3)
___ MN383 Fluid Power (3)
___ MN412 Advanced Manufacturing Systems (3)
___ MN416 Manufacturing Seminar (1)
___ PH120 Introductory Physics I (5)
___ PH121 Introductory Physics II (5)
___ SW207 Understanding Cultural & Social Diversity (3)
___ TN255 Microcomputer Maintenance (3)
___ UI319 Science, Technology, & Society (3)
___ UI410 Manufacturing Research (3)

University Studies Requirements (not already listed above):
UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literary Expression, Behavioral Systems, Living Systems, Development of a Major Civilization, Political Systems

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at semo.edu/transfercredit.

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	ET160	3
	EN100	3	MA140	5
	CH181/081/001	5	PH120/021	5
	MA137	5	Written Expression	3
	Total	**16**	**Total**	**16**
SECOND YEAR	ET164	3	ET260*	3
	ET245	3	ET304	3
	MA144	5	IM300	3
	PH121/021	5	MN260	3
			MN383	3
	Total	**16**	**Total**	**15**
THIRD YEAR	ET374*	3	ET365*	3
	IM301	3	ET366	3
	IM311	3	ET468*	3
	MN220	3	UI319	3
	TN255	3	Oral Expression	3
	Living Systems	3	Political Systems	3
	Total	**18**	**Total**	**18**
FOURTH YEAR	ET367*	3	ET470*	3
	MN356	3	MN412	3
	Artistic Expression	3	MN416	1
	Behavioral Systems	3	SW207	3
	Literary Expression	3	UI410	3
			Develop of a Major Civ	3
	Total	**15**	**Total**	**16**

**Many major courses are on a set rotation and thus dependent on when prerequisite courses are completed. The actual semester a course is taken may vary based on the rotation.*

Degree requirements for all students: *a minimum of 120 credit hours, completion of University Studies program, completion of 39 senior division hours (300-599), career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the senior level. Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.*

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