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.

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.

<table>
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<th>Demonstrated Career Proficiency is a Requirement of all Southeast Students</th>
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**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.
COLLEGE OF SCIENCE, TECHNOLOGY, AND AGRICULTURE
SOUTHEAST MISSOURI STATE UNIVERSITY • 1873

Engineering Technology: Electrical & Control Option
Bachelor of Science (BS)

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)
- ET367 Industrial Electronics (3)
- ET468 Industrial Control (3)
- ET470 Energy Management (3)
- IM300 Technical 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)
- MA144 Analytic Geometry & Calculus I (5)
- MA144 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)
- UI100 First Year Seminar
- UI100 English Composition
- Written Expression
- Oral Expression
- Literary Expression
- Behavioral Systems
- Living Systems
- Development of a Major Civilization
- Political Systems

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

**SAMPLE FOUR-YEAR PLAN**

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*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.

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

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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