SOUTHEAST MISSOURI STATE UNIVERSITY · 1873

Engineering Technology: Mechanical & Manufacturing Systems Option

Bachelor of Science (BS)

Mechanical & Manufacturing Systems 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.

Accredited ABET Engineering Technology Accreditation Commission

The Mechanical & Manufacturing Systems option emphasizes building strong proficiencies in design, development, application and management of product, manufacturing processes, and systems. A broad core of technical course work is presented in detail, from conventional machining operations to the latest applications and principles of computer-aided design using CAD/CAM, advanced manufacturing processes, robotics, integrated automation systems, quality control and improvement systems, along with advanced techniques in solid-modeling and prototype production. The introduction and application of manufacturing trends and innovations are reinforced throughout the program by integrated laboratory experiences.

Engineering technology: mechanical & manufacturing systems students will...

- Learn to design products, systems, components, or processes with good structure, function, quality and manufacturing ability.
- Learn to work with engineers in the design phase of product and process development.
- Use real-world laboratory equipment and industrial projects.
- Utilize course work with a balance of theoretical and practical applications in quality control, machine design, manufacturing processes, fluid power, robotics, automation, computer integrated manufacturing and safety.

Career Planning

Career preparation is part of the mission of Southeast. In fact, more than 90% of Southeast students participate in internships, clinical opportunities, student teaching, research assistantships, and study abroad.

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

Demonstrated Career Proficiency is a Requirement of all Southeast Students		
CL001/CL002	First Semester	Complete the FOCUS2 assessment and develop a Career Action Plan.
CL003	Junior Year	Students gain information about career planning and job searching resources.
CL004	Senior Year	Students demonstrate advanced proficiency by identifying a position in their field, developing a cover letter, and tailoring a resume for the position. Materials are critiqued to ensure preparedness for a successful job search.

Career Opportunities

- Production manager
- Manufacturing engineer
- Engineering technician
- Quality engineer
- Product/process engineer
- Industrial engineer
- Plant engineer
- Engineering applications analyst

Options with Engineering Technology

Students who choose the mechanical and manufacturing systems option are required to take the Society of Manufacturing Engineers (SME) certification, Certified Manufacturing Technologist (CMfgT). Certification through SME's Manufacturing Engineering Certification Institute (MECI/SME) is a program of professional documentation and recognition of an individual's manufacturing-related knowledge, skills, and capabilities. By becoming certified, you join an elite group of manufacturing professionals who have documented their manufacturing skills and knowledge.

Other certifications available after graduation and relevant work experience include:
· Certified Manufacturing Engineer (CMfgE)
· Certified Enterprise Integrator (CEI)
· Certified Engineering Manager (CEM)

For more information, visit www.sme.org.

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
College of Science, Technology and Agriculture Advising Center
(573) 651-5930
www.semo.edu/costa/advising

COLLEGE OF SCIENCE, TECHNOLOGY AND AGRICULTURE

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Degree Map 2015-2016

This is a guide based on the 2015-2016 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: Mechanical & Manufacturing Option – 101 hours

___ CH181 Basic Principles of Chemistry (5)
___ ET160 Basic Electricity and Electronics (3)
___ ET304 Introduction to PLCs (3)
___ IM102 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)
___ MN120 Fundamentals of Engineering Design Processes (3)
___ MN170 Industrial Materials and Testing (3)
___ MN203 Industrial Materials and Processes I (3)
___ MN219 Statics and Strengths of Materials (3)
___ MN 220 Engineering Economic Analysis (3)
___ MN221 Solid Modeling & Rapid Prototyping (3)
___ MN 260 Technical Computer Programming Applications (3)
___ MN304 Industrial Materials & Processes II (3)
___ MN324 Mechanical Design Processes (3)
___ MN350 Machine Design (3)
___ MN354 Computer Aided Manufacturing (CAM) (3)
___ MN 356 Robotic Fundamentals (3)
___ MN 383 Fluid Power (3)
___ MN402 Plastics & Processes (3)
___ MN 412 Advanced Manufacturing Systems (3)
___ MN 416 Manufacturing Seminar (1)
___ PH120 Introductory Physics I (5)
___ PH121 Introductory Physics II (5)
___ SW207 Understanding Cultural & Social Diversity (3)
___ UI319 Science, Technology, & Society (3)
___ UI 410 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, and one IU/UI3XX

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	IM102	3
	EN100	3	MA140	5
	CH181/081/001	5	MN170	3
	MA137	5	PH120	5
	Total	**16**	**Total**	**16**
SECOND YEAR	ET160	3	IM301	3
	MA144	5	MN219	3
	MN203	3	MN221	3
	MN120	3	MN260	3
	PH121	3	MN304	3
	Total	**17**	**Total**	**15**
THIRD YEAR	IM311	3	ET304	3
	MN324	3	MN220	3
	MN354	3	MN350	3
	MN383	3	SW207	3
	Artistic Expression	3	UI319	3
	Written Expression	3	Oral Expression	3
	Total	**18**	**Total**	**18**
FOURTH YEAR	MN356	3	MN412	3
	MN402	3	MN416	3
	Behavioral Systems	3	UI410	3
	Literary Expression	3	Dev of a Major Civilization	3
	Political Systems	3	Living Systems	3
			IU/UI3XX	3
	Total	**15**	**Total**	**18**

Degree requirements for all students: *a minimum of 120 credit hours, completion of University Studies program, 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 DegreeWorks for additional graduation requirements (i.e., minimum GPA and course work) for your program of study.

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