

**DEPARTMENT OF INDUSTRIAL & ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE
ENGINEERING TECHNOLOGY MAJOR
MECHANICAL & MANUFACTURING SYSTEMS OPTION**

The Mechanical & Manufacturing Systems option prepares students for technical and engineering support positions in industry. The program builds on a strong foundation of mathematics and science, with application of computers to design mechanical systems and manufacturing processes using Computer Aided Design (CAD), Computer Aided Machining (CAM), and Computer Aided Engineering (CAE) tools. The program also prepares students with skills in system automation including robotics, programmable controls, and process controls.

CURRICULUM CHECKLIST

UNIVERSITY STUDIES (55 hours)

<input type="checkbox"/> UI 100 First Year Seminar	3
<input type="checkbox"/> Artistic Expression	3
<input type="checkbox"/> Literary Expression	3
<input type="checkbox"/> Oral Expression	3
<input type="checkbox"/> EN 100 English Composition	3
<input type="checkbox"/> Written Expression	3
<input type="checkbox"/> Behavioral Systems	3
<input type="checkbox"/> Living Systems	3
<input type="checkbox"/> MA 135 Pre-Calculus (Logical Systems)	5
<input type="checkbox"/> PH 120/020 Introductory Physics I (Physical Systems)	5
<input type="checkbox"/> Development of a Major Civilization	3
<input type="checkbox"/> MN 220 Engineering Economic Analysis (Economic Systems)	3
<input type="checkbox"/> Political Systems	3
<input type="checkbox"/> SW 207 Understanding Cult & Soc Diversity (Social Systems)	3
<input type="checkbox"/> UI 319 Science, Technology and Society (Interdisciplinary)	3
<input type="checkbox"/> UI 3xx Interdisciplinary University Studies Course	3
<input type="checkbox"/> UI 410 Manufacturing Research in a Global Society- University Studies Senior Seminar	3
<input type="checkbox"/> WP 003 Writing Proficiency Test (to be taken after completing 75 hours)	0
<input type="checkbox"/> CCTST Critical Thinking Test (to be taken after completing 75 hours)	0
<input type="checkbox"/> CL001 <input type="checkbox"/> CL002 <input type="checkbox"/> CL003 <input type="checkbox"/> CL004 Career Linkages Requirements	0

ENGINEERING TECHNOLOGY CORE

(45 hours, not counting 22 core hours included in University Studies section above)

<input type="checkbox"/> CH 181/081/001 Basic Principles of Chemistry	5
<input type="checkbox"/> ET 194 Fundamentals of Programmable Logic Controllers (PLCs)	3
<input type="checkbox"/> IM 102 Technical Communication	3
<input type="checkbox"/> IM 301 Industrial Safety	3
<input type="checkbox"/> IM 311 Statistical Process Control	3
<input type="checkbox"/> MA 140 Analytic Geometry & Calculus I	5
<input type="checkbox"/> MA 144 Integral Calculus & Differential Equations	5
<input type="checkbox"/> MN 260 Technical Computer Programming Applications	3
<input type="checkbox"/> MN 356 Robotic Fundamentals	3
<input type="checkbox"/> MN 383 Fluid Power	3
<input type="checkbox"/> MN 412 Advanced Manufacturing Systems	3
<input type="checkbox"/> MN 416 Manufacturing Seminar	1
<input type="checkbox"/> PH 121/021 Introductory Physics II	5

ET required courses included in University Studies section above: MA135, MN220, PH120, SW207, UI319, and UI410

MECHANICAL & MANUFACTURING SYSTEMS OPTION (33 Hours)

<input type="checkbox"/> ET 160 Basic Electricity and Electronics	3
<input type="checkbox"/> MN 120 Fundamentals of Engineering Design Process	3
<input type="checkbox"/> MN 170 Engineering Materials and Testing	3
<input type="checkbox"/> MN 203 Industrial Materials and Processes I	3
<input type="checkbox"/> MN 204 Industrial Materials and Processes II	3
<input type="checkbox"/> MN 221 Solid Modeling & Rapid Prototyping	3
<input type="checkbox"/> MN 319 Statics & Strengths of Materials	3
<input type="checkbox"/> MN 324 Design Modeling & Processes	3
<input type="checkbox"/> MN 350 Machine Design	3
<input type="checkbox"/> MN 354 Computer Aided Manufacturing	3
<input type="checkbox"/> MN 402 Plastics & Processes	3

EXAMPLE PROGRAM OF STUDY

BS - Engineering Technology major – Mechanical & Manufacturing Systems option

FRESHMAN FALL SEMESTER (16 hrs)

IM 102 Technical Communication
MA 135 Algebra & Trigonometry
CH 181/CH081/CH001 Basic Prin. of Chemistry
UI 100 First Year Seminar
CL001 Career Linkages 1st Requirement

FRESHMAN SPRING SEMESTER (16 hrs)

EN 100 English Composition
MN 170 Engineering Materials & Testing
MA 140 Analytic Geometry & Calculus I
PH 120 Introductory Physics I
CL002 Career Linkages 2nd Requirement

SOPHOMORE FALL SEMESTER (16 hrs)

MA 144 Integral Calculus & Differential Equations
MN 203 Industrial Materials & Processes I
MN 120 Fund of Eng. Design Processes
PH 121 Introductory Physics II

SOPHOMORE SPRING SEMESTER (18 hrs)

ET 160 Basic Electricity & Electronics
IM 301 Industrial Safety
MN 204 Industrial Materials & Processes II
MN221 Solid Modeling & Rapid Prototyping
MN 260 Technical Computer Program Appl
MN 319 Statics & Strengths of Material

JUNIOR FALL SEMESTER (18 hrs)

ET 194 Fundamentals of PLCs
IM311 Statistical Process Control
MN 350 Machine Design
MN 383 Fluid Power
MN 324 Design Modeling & Processes
Written Expression
CL003 Career Linkages 3rd Requirement

JUNIOR SPRING SEMESTER (18 hrs)

MN 220 Engineering Economic Analysis
MN 354 Computer Aided Manufacturing
UI 319 Science, Technology & Society
Artistic Expression
Oral Expression
SW 207 Understanding Social & Cultural
Diversity (Social Systems)
WP 003 Writing Proficiency Exam
CCTST California Critical Thinking Skills Test

SENIOR FALL SEMESTER (15 hrs)

MN 356 Robotics
MN 402 Plastics & Processes
Behavioral Systems
Literary Expression
Political Systems
CL004 Career Linkages 4th Requirement

SENIOR SPRING SEMESTER (18 hrs)

MN 412 Advanced Manufacturing Systems
MN 416 Manufacturing Seminar
UI 3xx University Studies
UI 410 Manufacturing Research in Global Society
Development of Major Civilization
Living Systems

133 Hours

Notes:

- This proposed rotation is suggested. You will need to meet with your advisor every semester for advising and discussions about your progress and plans.
- Course prerequisites and rotations can change. Even if you fall under an older option of a major, changes in prerequisites apply to all students. For current prerequisites and course rotation, check with the Department of Industrial and Engineering Technology or the Polytechnic Studies Advising Center.
- An internship is highly recommended – the summer after your junior year is a good time
- For course descriptions, see the latest undergraduate bulletin OR www.semo.edu/bulletin
- Visit <http://www.semo.edu/ustudies/handbook/index.htm> for information on the University Studies program

For information on Career Linkages, visit <http://www.semo.edu/careerlinkages/students/index.htm>