

**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)

___ UI 100 First Year Seminar	3
___ Artistic Expression	3
___ Literary Expression	3
___ Oral Expression	3
___ EN 100 English Composition	3
___ Written Expression	3
___ Behavioral Systems	3
___ Living Systems	3
___ MA 135 Pre-Calculus (Logical Systems)	5
___ PH 120/020 Introductory Physics I (Physical Systems)	5
___ Development of a Major Civilization	3
___ MN 220 Engineering Economic Analysis (Economic Systems)	3
___ Political Systems	3
___ SW 207 Understanding Cult & Soc Diversity (Social Systems)	3
___ UI 319 Science, Technology and Society (Interdisciplinary)	3
___ UI 3xx Interdisciplinary University Studies Course	3
___ UI 410 Manufacturing Research in a Global Society (Senior Seminar)	3
___ WP003 Writing Proficiency Test (to be taken after completing 75 hours)	0
___ MAPP Academic Proficiency & Progress Test (to be taken after completing 75 hours)	0
___ CL001 ___ CL002 ___ CL003 ___ CL004 Career Linkages Requirements	0

ENGINEERING TECHNOLOGY CORE

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

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

___ ET 160 Basic Electricity and Electronics	3
___ MN 120 Fundamentals of Engineering Design Process	3
___ MN 170 Engineering Materials and Testing	3
___ MN 203 Industrial Materials and Processes I	3
___ MN 204 Industrial Materials and Processes II	3
___ MN 219 Statics & Strengths of Materials	3
___ MN 221 Solid Modeling & Rapid Prototyping	3
___ MN 324 Design Modeling & Processes	3
___ MN 350 Machine Design	3
___ MN 354 Computer Aided Manufacturing	3
___ 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 (17 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
ET 160 Basic Electricity & Electronics

SOPHOMORE SPRING SEMESTER (15 hrs)

IM 301 Industrial Safety Supervision
MN 204 Industrial Materials & Processes II
MN 221 Solid Modeling & Rapid Prototyping
MN 260 Technical Computer Program Apps.
MN 219 Statics & Strengths of Material

JUNIOR FALL SEMESTER (18 hrs)

IM311 Statistical Process Control
MN 350 Machine Design
MN 383 Fluid Power
MN 324 Design Modeling & Processes
Written Expression
Artistic Expression
CL003 Career Linkages 3rd Requirement

JUNIOR SPRING SEMESTER (18 hrs)

ET 194 Fundamentals of PLCs
MN 220 Engineering Economic Analysis
MN 354 Computer Aided Manufacturing
UI 319 Science, Technology & Society
Oral Expression
SW 207 Understanding Social & Cultural
Diversity (Social Systems)
WP003 Writing Proficiency Test
MAPP Academic Proficiency & Progress 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>