

**DEPARTMENT OF INDUSTRIAL & ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE
ENGINEERING TECHNOLOGY MAJOR
ELECTRICAL & CONTROL OPTION**

The Electrical & Control option prepares graduates for technical and engineering support positions in industry. The program builds on a strong foundation of mathematics and science, with applications in electrical systems and control, industrial automation, robotics, industrial power, and energy management.

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 Equation	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

ELECTRICAL AND CONTROL OPTION (33 Hours)

___ ET 162 DC Principles & Circuits	3
___ ET 164 AC Principles & Circuits	3
___ ET 245 Logic Circuits	3
___ ET 260 Electronic Circuit Design & Analysis I	3
___ ET 264 Industrial Electronics	3
___ ET 365 Industrial Electrical Power	3
___ ET 366 Microcontrollers	3
___ ET 367 Motor Control & Drive Systems	3
___ ET 468 Industrial Controls	3
___ ET 470 Energy Management	3
___ TN 275 Network Fundamentals	3

EXAMPLE PROGRAM OF STUDY

BS - Engineering Technology major - Electrical and Control option

FRESHMAN FALL SEMESTER (14 hrs)

EN 100 English Comp I
IM 102 Technical Communications
MA 135 Algebra & Trigonometry
UI 100 First Year Seminar
CL001 Career Linkages 1st Requirement

FRESHMAN SPRING SEMESTER (16 hrs)

ET 162 DC Principles & Circuits
MA 140 Analytic Geometry & Calculus I
PH 120 Introductory Physics I
Written Expression
CL002 Career Linkages 2nd Requirement

SOPHOMORE FALL SEMESTER (16 hrs)

ET 164 AC Principles & Circuits (MA144 co-req)
ET 245 Logic Circuits
MA 144 Integral Calculus & Differential Equations
PH 121 Introductory Physics II

SOPHOMORE SPRING SEMESTER (17 hrs)

CH 181/CH081/CH001 Basic Prin. of Chemistry
ET 194 Fundamentals of PLCs
MN 220 Engineering Economic Analysis
MN 260 Technical Computer Programming Appl.
(A*) ET 260 Circuit Design and Analysis I
(B*) ET 365 Industrial Electrical Power

JUNIOR FALL SEMESTER (18 hrs)

IM 301 Industrial Safety
MN 383 Fluid Power
TN 275 Network Fundamentals
Oral Expression
Living Systems
CL003 Career Linkages 3rd Requirement
(A*) ET 264 Industrial Electronics
(B*) ET 367 Motor Controls & Drives

JUNIOR SPRING SEMESTER (18 hrs)

ET 366 Microcontrollers
IM 311 Statistical Process Controls
UI 319 Science, Technology and Society
Political Systems
WP003 Writing Proficiency Test
MAPP Academic Proficiency & Progress Test
(A*) ET 468 Industrial Controls
(A*) ET 365 Industrial Electrical Power
(B*) ET 260 Circuit Design and Analysis I
(B*) ET 470 Energy Management

SENIOR FALL SEMESTER (18 hrs)

MN 356 Robotic Fundamentals
UI 3xx University Studies
Artistic Expression
Behavioral Systems
Literary Expression
CL004 Career Linkages 4th Requirement
(A*) ET 367 Motor Controls & Drives
(B*) ET 264 Industrial Electronics

SENIOR SPRING SEMESTER (16 hrs)

MN 412 Advanced Manufacturing Systems
MN 416 Manufacturing Seminar
UI 410 Manufacturing Research in Global Society
Developments of a Major Civilization
SW 207 Understanding Cult. & Soc. Diversity
(Social Systems)
(A*) ET 470 Energy Management
(B*) ET 468 Industrial Controls

133 Hours

** Students will take classes from either the A or B rotation depending upon the year they complete the needed prerequisites*

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>