

Automation Engineering Technology B.S.

Automation Engineering Technology Major

The B.S. Automation Engineering Technology major requires a minimum of 120 total hours to graduate. This total includes UNIFI/General Education and the following specified major requirements, plus electives to complete the minimum of 120 hours.

The Automation Engineering Technology program will provide industry-relevant training and hands-on experience for students to apply automation engineering technology knowledge to industry and manufacturing for process control and system review. Students will be trained on sensors, instrumentations, electrical power, computer programming for controllers, process control, pneumatics and hydraulics, and mechanical systems to solve engineering and technology problems. Students will have a chance to work with industry level state-of-the-art equipment to apply their theoretical knowledge as well as programming industry level controllers to implement Industry 4.0 standards.

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Math and Science:

MATH 1150	Calculus for Technology [^]	4
STAT 1772	Introduction to Statistical Methods [^]	3
PHYSICS 1511	General Physics I [^]	4
CS 1160	C/C++ Programming	3
Required Core:		
ENGLISH 1005	College Writing and Research	3
ENGLISH 3772/5772	Technical Writing for Engineering Technologists	3
PHIL 1560	Science, Technology, and Ethics (STE)	3
ENGR 1000	Introduction to Engineering & Professional Practice	3
TECH 1037	Introduction to Circuits	3
TECH 1039	Circuits and Systems	3
TECH 2053	Digital Electronics	4
TECH 2055	Electrical Power Systems & Machinery	4

TECH 3160/5160	Computer-Aided Instrumentation and Interfacing	3
TECH 3164	Programmable Logic Controllers (PLCs)	3
TECH 1010	Fundamentals of Metal Removal	3
TECH 1024	Engineering Design with CAD	3
TECH 2065	Industrial Robotics	3
ENGR 2080	Statics	2
ENGR 2180	Strength of Materials	2
TECH 3147	Computer Aided Manufacturing	3
TECH 3148	Machine Design	3
TECH 4162	Hydraulics & Pneumatics	3
ENGR 4500	Senior Design [@]	3
Electives		9 - 10

Complete three of the following:

TECH 2051	Analog Electronics
TECH 4104/5104	Applied Digital Signal Processing [*]
TECH 3129	Linear Control Systems [*]
TECH 4167/5167	Power Electronics Applications [*]
TECH 3157/5157	Microcontroller Applications [*]
TECH 4103/5103	Electronic Communications [*]
TECH 4165/5165	Wireless Communication Networks [*]
TECH 1008	Basic Manufacturing Processes
TECH 2024	Technical Drawing with GD&T
TECH 2119	Computer Applications in Technology
TECH 2072	Engineering Materials [*]
TECH 2114	Making Cool Stuff
TECH 3113	Manufacturing Tooling [*]
TECH 3131/5131	Technical Project Management
TECH 3142	Statistical Quality Control
TECH 3143	Managing Operations and Manufacturing Systems
TECH 3196	Industrial Safety
TECH 3179	Cooperative Education

Total Hours **80-81**

[^] Has prerequisite of satisfactory score on ALEKS exam or subsequent remediation.

^{*} These courses have additional prerequisites.

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@This course meets the Bachelor of Science undergraduate research course requirement.

Four-Year Plan

Automation Engineering Technology, B.S.

This is a sample plan of study with a suggested sequencing of classes for the major. University electives may be applied to earn additional academic majors, minors, or certificates. Students should regularly meet with their academic advisor to plan their specific semester schedule to include UNIFI/General Education program and/or university elective hours required.

Course	Title	Hour
Freshman		
Fall		
UNIFI/General Education or University Electives		6
ENGR 1000	Introduction to Engineering & Professional Practice	3
PHYSICS 1511	General Physics I	4
TECH 1024	Engineering Design with CAD	3
Hours		16
Spring		
UNIFI/General Education or University Electives		3
PHIL 1560	Science, Technology, and Ethics (STE)	3
MATH 1150	Calculus for Technology	4
TECH 1010	Fundamentals of Metal Removal	3
CS 1160	C/C++ Programming	3
Hours		16
Sophomore		
Fall		
UNIFI/General Education or University Electives		6
TECH 1037	Introduction to Circuits	3
TECH 2065	Industrial Robotics	3
ENGR 2080	Statics	2
Hours		14
Spring		
UNIFI/General Education or University Electives		6
STAT 1772	Introduction to Statistical Methods	3
TECH 1039	Circuits and Systems	3
ENGR 2180	Strength of Materials	2
Hours		14
Junior		
Fall		
UNIFI/General Education or University Electives		6
TECH 2053	Digital Electronics	4
TECH 3148	Machine Design	3
ENGLISH 3772/5772	Technical Writing for Engineering Technologists	3
Hours		16
Spring		
TECH 2055	Electrical Power Systems & Machinery	4
TECH 3147	Computer Aided Manufacturing	3
TECH 3160/5160	Computer-Aided Instrumentation and Interfacing	3

TECH 3164	Programmable Logic Controllers (PLCs)	3
Technical elective course		3
Hours		16
Senior		
Fall		
UNIFI/General Education or University Electives		6
TECH 4162	Hydraulics & Pneumatics	3
Technical elective course		6
Hours		15
Spring		
UNIFI/General Education or University Electives		10
ENGR 4500	Senior Design	3
Hours		13
Total Hours		120

Learning Outcomes

Automation Engineering Technology, B.S.

Program Educational Objectives (PEOs):

- Be able to apply Automation Engineering Technology principles with tools to solve industry-related problems
- Be able to effectively communicate and work independently or in a team environment
- Be engaged in lifelong learning and professional development
- Demonstrate high ethical, social, and environmental standards in the conduct of professional activities

Student Learning Outcomes (SLOs):

- Employ analytical methods to design engineering solutions
- Apply written, oral, and graphical communication in technical and non-technical environments
- Conduct experiments to understand and analyze automation processes
- Collaboratively develop engineering solutions in a team environment

Related Programs

- Applied Engineering M.S.
- Industrial Management Certificate