

# OPERATIONS ENGINEERING TECHNOLOGY WITH A CONCENTRATION IN AUTOMATED MANUFACTURING, ASSOCIATE OF APPLIED SCIENCE



The Associate of Applied Science degree in Operations Engineering Technology with a concentration in Automated Manufacturing is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/production setting that uses automated manufacturing processes. Production, logistics, basic design principles, automated manufacturing processes, and the basics in managing manufacturing processes is covered within the program. The program is designed to tie the fundamentals of automated manufacturing with the fundamentals of managing production processes. This program ties into 4-year bachelor degree programs aimed at automated manufacturing.

**This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.**

Learn more (<http://catalog.tri-c.edu/pathways/industrial-manufacturing-construction/operations-engineering-technology-automated-manufacturing>) about how certificate credits apply to the related degree.

## Related Degrees and Certificates

- Operations Engineering Technology (Engineering Management), Associate of Applied Science (<http://catalog.tri-c.edu/programs/operations-engineering-technology-management-aas>)
- Operations Engineering Technology, Associate of Applied Science (<http://catalog.tri-c.edu/programs/operations-engineering-technology-aas>)
- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency (<http://catalog.tri-c.edu/programs/3d-digital-design-manufacturing-technology-certificate-proficiency>)
- Computer-Aided Drafting (CAD), Certificate of Proficiency (<http://catalog.tri-c.edu/programs/computer-integrated-manufacturing-cim-certificate-proficiency>)

- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency (<http://catalog.tri-c.edu/programs/computer-integrated-manufacturing-cim-certificate-proficiency>)
- Machine Tools Operation, Certificate of Proficiency (<http://catalog.tri-c.edu/programs/machine-tools-operation-certificate-proficiency>)
- Quality Control, Certificate of Proficiency (<http://catalog.tri-c.edu/programs/quality-control-certificate-proficiency>)
- Digital Design & Product Innovation, Short-Term Certificate (<http://catalog.tri-c.edu/programs/digital-design-product-innovation-short-term-certificate>)
- Digital Manufacturing and Product Launch, Short-Term Certificate (<http://catalog.tri-c.edu/programs/digital-manufacturing-product-launch-short-term-certificate>)

## Program Admissions Requirements

- High School Diploma/GED
- Complete the following courses with a grade of "C" or higher:

Code	Title	Credit Hours
MATH-0965	Intermediate Algebra (or appropriate score on Math Placement Test)	6
MET-1100	Technology Orientation	2
Select one of the following:		3
ENG-1010	College Composition I	
ENG-101H	Honors College Composition I	

## Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Utilize basic computer skills including word processing, spreadsheet, and database, (i.e., MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Utilize a working understanding of statistical process controls (SPC) and pre-production approval process (PPAP) to validate both product and process compliance.
7. Explain and apply Computer Numerical Control (CNC) and Program Logic Controller (PLC) programming concepts.
8. Understand and follow preventative maintenance strategy.

## Suggested Semester Sequence

Course	Title	Credit Hours
<b>First Semester</b>		
ENG-1010	College Composition I	3
MATH-1530	College Algebra <sup>1</sup>	4
MET-1100	Technology Orientation	2

MET-1120	Computer Applications and Programming <sup>2</sup>	2
MET-1230	Drawing & AutoCAD	3
PSY-1010	General Psychology	3
Credit Hours		17
<b>Second Semester</b>		
CNST-1740	Fundamentals of Geographic Information Science	3
MATH-1540	Trigonometry	3
MET-1630	Industrial Supply Logistics	3
MET-2041	CAD II & GD&T	3
MET-2601	3D Solid Modeling	3
Credit Hours		15
<b>Third Semester</b>		
EHST-1310	Introduction to Environmental Law	4
MET-1240	Machine Tools and Manufacturing Processes	3
MET-2400	Statistical Quality Control	3
PHYS-1210	College Physics I	4
Credit Hours		14
<b>Fourth Semester</b>		
EHST-1330	Hazardous Waste Operations and Emergency Response <sup>3</sup>	2
ENG-2151	Technical Writing <sup>4</sup>	3
MET-1400	CNC Programming and Operation	3
MET-2140	Manufacturing Automation and Control	3
MET-2500	Fundamentals of Products Development and Manufacture	3
Credit Hours		14
Total Credit Hours		60

<sup>1</sup> MATH-1610 Calculus I can be used for both MATH-1530 College Algebra and MATH-1540 Trigonometry requirements but an additional 2 credit hours of electives may be needed.

<sup>2</sup> IT-2670 C/C++ Programming Language or MET-2550 Engineering Analysis Using MATLAB will be accepted in place of MET-1120 Computer Applications and Programming to meet this requirement.

<sup>3</sup> EHST-1351 Safety and Health in the Workplace: OSHA 30 General Industry, OSHA 10 Construction, First Aid/CPR will be accepted in place of EHST-1330 Hazardous Waste Operations and Emergency Response to meet this requirement.

<sup>4</sup> COMM-1010 Fundamentals of Speech Communication or ENG-1020 College Composition II may be used to meet this requirement.