

MANUFACTURING INDUSTRIAL ENGINEERING TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE

The Manufacturing Industrial Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). Manufacturing is instrumental to the function of society today and will remain indispensable for the future. This program ensures application of appropriate manufacturing processes and cost effective utilization of manufacturing tools, materials, equipment and manpower to manufacture parts and maintain equipment. The program provides graduates with a unique blend of theoretical and hands-on-knowledge with computer integration in a manufacturing environment that directly corresponds to modern applications used in industry. Graduates are employed in a wide variety of areas relevant to manufacturing industries.

Program contact: Learn more

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 about how certificate credits apply to the related degree.

Related Degrees and Certificates

- 3D Digital Design and Manufacturing Technology, Certificate of Proficiency
- Computer-Aided Drafting (CAD), Certificate of Proficiency
- Computer-Integrated Manufacturing (CIM), Certificate of Proficiency
- Machine Tools Operation, Certificate of Proficiency
- Quality Control, Certificate of Proficiency
- Digital Design & Product Innovation, Short-Term Certificate
- Digital Manufacturing and Product Launch, Short-Term Certificate
- CNC Machining and Composites Manufacturing, Short-Term Certificate

Related Training and Credentials

- CNC Technology Certificate Program
- Computer Aided Design (CAD)
- Right Skills Now CNC Operations Program
- Manufacturing Technical Readiness Program
- Nondestructive Testing (NDT) and Quality Assurance (QA)
- Plexus AS9100C Understanding and Internal Auditing (Aerospace)
- Plexus: ISO 13485 – Medical Devices Understand and Internal Auditing

Program Admission Requirements

Applications may be submitted after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H Honors College Composition I
- MATH-0965 Intermediate Algebra with grade of "C" or higher; or appropriate score on Math placement test.
- Complete MET-1100 Technology Orientation

Program Learning Outcomes

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

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of machines' principles and operation, tools and materials, requisite mathematics and physics, to select operation parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to, troubleshoot and diagnose both numerically/computer numerically (NC/CNC) controlled machines, and programmable logic controlled (PLC) equipment.
6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.
9. Exhibit independence in the pursuits of continuous professional development.
10. Model ethical behavior in professional responsibilities.

MATH-1140, MATH-1141, MATH-1200, MATH-1270, and MATH-1280 can no longer count towards fulfilling the college-level mathematics requirement. These courses were re-classified as developmental mathematics by the state of Ohio in 2016. Tri-C established a 5-year transitioning window for students who had completed these courses prior to 2016 to apply them towards meeting graduation requirements, which expired in Summer 2021. It is highly recommended to see a

counselor to determine the appropriate math required for your current major.

Suggested Semester Sequence

First Semester		Credit Hours
MATH-1530	College Algebra ¹	4
MET-1100	Technology Orientation	2
MET-1230	Drawing & AutoCAD ²	3
MET-1120	Computer Applications and Programming	2
MET-1240	Machine Tools and Manufacturing Processes	3
Select one of the following:		3
ENG-1010	College Composition I	
ENG-101H	Honors College Composition I	
Credit Hours		17
Second Semester		Credit Hours
MATH-1540	Trigonometry ¹	3
MET-1300	Engineering Materials and Metallurgy	3
MET-1250	Introduction to Additive Manufacturing	3
MET-1410	Computer Aided Manufacturing Processes	3
MET-2601	3D Solid Modeling	3
Credit Hours		15
Third Semester		Credit Hours
MET-1261	Product Ideation & Design I	3
MET-1270	Additive Manufacturing Processes	3
MET-2160	3D Scanning, Reverse Engineering, and Quality Inspection	3
PHYS-1210	College Physics I ³	4
Select one of the following:		3
ENG-1020	College Composition II	
ENG-102H	Honors College Composition II	
Credit Hours		16
Fourth Semester		Credit Hours
MET-2151	3D Digital Design & Printing	3
MET-2422	Fundamentals of Engineering Economics	3
MET-2410	Quality Control and Lean Manufacturing	3
MET-2990	Product Development and Manufacture	3
Arts & Humanities/Social and Behavioral Sciences (see AAS Degree requirements)		3
Credit Hours		15
Total Credit Hours		63

¹ MATH-1580 Precalculus or MATH-1610 Calculus I will be accepted in place of MATH-1530 College Algebra & MATH-1540 Trigonometry but an additional 2 credit hours of general electives may be needed.

² MET-1220 and MET-1200 together will be accepted in place of MET-1230 Drawing & AutoCAD.

³ PHYS-2310 General Physics I will be accepted in place of PHYS-1210 College Physics I. PHYS-2310 General Physics I is recommended for students planning to transfer.