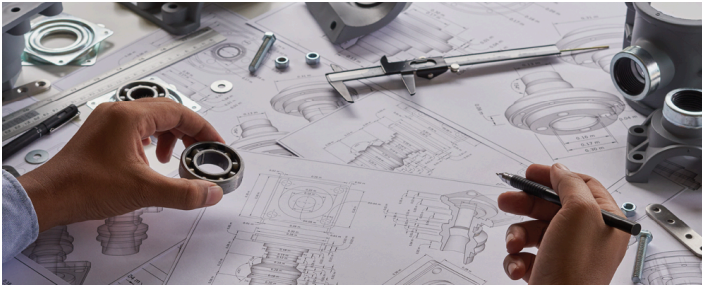


# MECHANICAL ENGINEERING TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE



The Mechanical Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). It is designed to prepare students to pursue a career in the areas of design, development, manufacturing, installation, measurement, testing, operation and control, maintenance and sales of mechanical devices and systems. The curriculum emphasizes hands-on-learning and the use of current computer-aided techniques found in industry. Graduates are employed in a variety of industries such as automotive, manufacturing, aero-space, construction, transportation, Energy industry, as well as in research and development laboratories. Skills in the area of creating and interpreting engineering drawings and the practices and procedures of manufacturing and principles of product design are emphasized.

**Program contact:** Learn more

Learn more about how certificate credits apply to the related degree.

## Program Admission 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. 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 of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Utilize modern tools and technology (CAD/CAE) and apply appropriate engineering design principles, to design or assist in the design, testing and troubleshooting of manufacturable quality products, such as mechanisms and primary drives, including mechanical drive, power transmission, hydraulics, and pneumatics systems.
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. Engage in life-long learning to adapt to innovation and change.
9. Model ethical behavior in professional engagements.

## Suggested Semester Sequence

First Semester		Credit Hours
MATH-1530	College Algebra <sup>1</sup>	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	3
Arts & Humanities requirement(see below list)		3
Select one of the following:		3
ENG-1010	College Composition I	
ENG-101H	Honors College Composition I	
<b>Credit Hours</b>		<b>17</b>
Second Semester		Credit Hours
MATH-1540	Trigonometry	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1601	Technical Statics <sup>2</sup>	3
PHYS-1210	College Physics I <sup>3</sup>	4
Select one of the following:		3
ENG-1020	College Composition II	
ENG-102H	Honors College Composition II	
ENG-2151	Technical Writing	
<b>Credit Hours</b>		<b>16</b>
Third Semester		Credit Hours
MET-1300	Engineering Materials and Metallurgy	3
MET-1621	Technical Dynamics <sup>4</sup>	3

MET-2041	CAD II & GD&T	3
MET-2200	Strength of Materials <sup>5</sup>	3
MET-2240	Mechanical Engineering Lab	1
MET-2300	Fluid Power <sup>6</sup>	3
<b>Credit Hours</b>		<b>16</b>

**Fourth Semester**

HLTH-1230	Standard First Aid and Personal Safety	1
MET-2601	3D Solid Modeling	3
MET-2700	Machine Design	4
PHYS-1220	College Physics II	4
Social & Behavioral Sciences requirement		3
<b>Credit Hours</b>		<b>15</b>

**Total Credit Hours** **64**

<sup>1</sup> MATH-1580 Precalculus or MATH-1610 Calculus I will be accepted in place of both MATH-1530 College Algebra and MATH-1540 Trigonometry but an additional 2 credit hours of general electives may be needed to meet degree requirements.

<sup>2</sup> MET-2610 Statics will be accepted in place of MET-1601 Technical Statics to meet this requirement. MET-2610 Statics, MET-2620 Dynamics, and MET-2630 Engineering Strength of Materials are recommended for students planning to transfer.

<sup>3</sup> PHYS-2310 General Physics I & PHYS-2320 General Physics II will be accepted in place of PHYS-1210 College Physics I & PHYS-1220 College Physics II, PHYS-2310 General Physics I & PHYS-2320 General Physics II are recommended for students planning to transfer.

<sup>4</sup> MET-2620 Dynamics will be accepted in place of MET-1621 Technical Dynamics to meet this requirement.

<sup>5</sup> MET-2630 Engineering Strength of Materials will be accepted in place of MET-2200 Strength of Materials to meet this requirement.

<sup>6</sup> MET-2320 Thermal Dynamics will be accepted in place of MET-2300 Fluid Power to meet this requirement.

Students should select at least one designated cultural sensitivity course and at least one designated Civic Responsibility course to fulfill their Arts & Humanities or Social & Behavioral Science requirements from the below lists. View full list of courses that can be selected to fulfill Arts and Humanities, Social and Behavioral Sciences, and Natural Sciences requirements here.

**Recommended Cultural Sensitivity Electives**

Code	Title	Credit Hours
<b>ARTS AND HUMANITIES</b>		
DANC-1100	Dance Appreciation	3
ENG-2310	American Literature I	3
ENG-2320	American Literature II	3
ENG-2430	Introduction to Literature: Drama <sup>1</sup>	3
ENG-2510	African-American Literature I <sup>1</sup>	3
ENG-2520	African-American Literature II <sup>1</sup>	3
ENG-2601	Literature for Children and Adolescents <sup>1</sup>	3
ENG-2700	World Literature <sup>1</sup>	3
ENG-2710	Shakespeare	3
ENG-2730	Exploration of World Mythology <sup>1</sup>	3
HIST-2031	Islam to the Modern Middle East	3
HIST-2660	Women in American History	3

HUM-1010	Introduction to Humanities	3
HUM-1020	The Individual in Society	3
HUM-102H	Honors Individual in Society	3
HUM-2020	Community Engagement Through the Humanities	3
HUM-2030	Culture and Belief	3
MUS-1010	Survey of European Classical Music	3
MUS-1020	Survey of Jazz	3
MUS-1030	Survey of Rock and Roll	3
THEA-1010	Theatre Appreciation	3
THEA-2210	History of Theatre and Drama I	3
THEA-2220	History of Theatre & Drama II	3

**SOCIAL AND BEHAVIORAL SCIENCES**

ANTH-1010	Cultural Anthropology	3
ANTH-2010	Peoples and Cultures of the World	3
HIST-1010	History of Civilization I	3
HIST-101H	Honors History of Civilization I	3
HIST-1020	History of Civilization II	3
HIST-102H	Honors History of Civilization II	3
HIST-1510	United States History to 1877	3
HIST-1700	History of Africa	3
POL-2070	International Relations	3
PSY-1010	General Psychology	3
PSY-2020	Life Span Development	4
SOC-2100	Aging and Society	3
SOC-2410	Sociology of Gender	3
SOC-2550	Race and Ethnic Relations	3

<sup>1</sup> Requires ENG-1020 College Composition II as a prerequisite.

**Recommended Civic Responsibility Electives**

Code	Title	Credit Hours
<b>ARTS AND HUMANITIES</b>		
HUM-1020	The Individual in Society	3
HUM-102H	Honors Individual in Society	3
HUM-2030	Culture and Belief	3
PHIL-1000	Critical Thinking	3
PHIL-2050	Bioethics	3
<b>SOCIAL AND BEHAVIORAL SCIENCES</b>		
GEOG-2030	Environmental Geography	3
HIST-1510	United States History to 1877	3
HIST-1520	United States History Since 1877	3
HIST-152H	Honors United States History since 1877	3
POL-1010	American National Government	3
POL-101H	Honors American National Government	3
POL-1020	State & Local Government	3
POL-2030	Comparative Politics	3
POL-2070	International Relations	3
UST-1010	Introduction to Urban Studies	3

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.