

**Computer, Engineering/Manufacturing Industrial Technologies**

**Curriculum Code: 1359  
(Effective Fall 2018 – Summer 2023)**      **Manufacturing Engineering Technology A.A.S. Pathway**

This program prepares individuals to apply technical skills and advanced computer software to the manufacturing of machined components relating to a broad range of industries. Students receive instruction in manual machine tools, computer numerical control (CNC) machine programming and operation, computer-aided manufacturing (CAM) design/programming, manufacturing processes, metrology, metallurgy, geometric dimensioning and tolerancing, three-dimensional engineering design graphics, and parametric modeling. Employment possibilities include engineering firms and manufacturing companies in the automotive, defense, special machinery, and medical components industries to name a few. Students completing this pathway would also qualify for the CNC Machine Technology Certificate of Achievement.

**For More Information**  
Contact the Trades Technology Program, West Campus Building, Room M103, telephone number (517) 483-5338 or Student Services West Campus, West Campus Building, Room M106, telephone number (517) 267-5452.

Semester I	Course Title	Prerequisites	Credit/Billing Hours
<b>Science Core Area - <i>Select 1</i></b>			
METM 190	Metallurgy and Heat Treatment	Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)	4 / 6
<b>Program of Study Requirements</b> <i>Students who have already completed DCTM 102, ELTE 102, HVAC 102 or WELD 102 with a grade of 2.0 or higher may substitute one of these courses for METS 102.</i>			
METD 100	Basic Mechanical Drafting	Reading Level 3 and Writing Level 2 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106)	3 / 4
METM 108	Machine Tool Operations	Reading Level 3 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)	4 / 6
METS 102	Industrial/Construction Safety	Reading Level 3 and Writing Level 2	2 / 3
<b>Credits</b>			<b>13 / 19</b>

Semester II	Course Title	Prerequisites	Credit/Billing Hours
<b>Program of Study Requirements</b>			
METD 110	Mechanical CAD Drafting I	Minimum 2.0 in (METD 100 or Mechanical Drafting Placement Test 80%) and Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)	4 / 6
METD 130	Geometric Dimension/Tolerance	Minimum 2.0 in (METD 100 or Mechanical Drafting Placement Test 80%) and Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)	4 / 6
METM 112	Introduction to CNC Machining	Minimum 2.0 in METM 108 and Reading Level 3 and Writing Level 4 and Math Level 4	4 / 6
METM 220	Basic Mastercam	Minimum 2.0 in (METM 108 or METM 110 and Reading Level 4 and Writing Level 4 and Math Level 4	4 / 6
<b>Credits</b>			<b>16 / 24</b>
Semester III	Course Title	Prerequisites	Credit/Billing Hours
<b>Math Core Area - <i>Select 1</i></b>			
MATH 115	Technical Math II	(Minimum 2.0 in MATH 114 within 2 years or Math Level 5 within 2 years) and Reading Level 5	4 / 4
<b>Writing Core Area - <i>Select 1</i></b>			
ENGL 124	Technical Writing	Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)	3 / 3

Program of Study Requirements			
METM 150	Advanced CNC Machining	Minimum 2.0 in (METM 110 or METM 112) and Reading Level 4 and Writing Level 4 and Math Level 4	4 / 6
METM 195	Quality/Metrology/Inspection	Minimum 2.0 in (METD 130 and (METM 108 or METM 110)) and Reading Level 4 and Writing Level 4 and Math Level 4	2 / 3
METM 221	Advanced Mastercam	Minimum 2.0 in METM 220 and Reading Level 3 and Writing Level 4 and Math Level 4	4 / 6
<b>Credits</b>			<b>17 / 22</b>
Semester IV	Course Title	Prerequisites	Credit/Billing Hours
<b>Communication Core Area - <i>Select 1</i></b>			
COMM 110	Oral Comm in the Workplace	Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)	3 / 3
<b>Global Perspectives and Diversity Core Area - <i>Select 1</i></b>			
MGMT 234	Diversity in the Workplace	Reading Level 5 and Writing Level 6	3 / 3
<b>Program of Study Requirements</b>			
METD 220	Basic Unigraphics/NX	Minimum 2.0 in METD 110 and Reading Level 4 and Writing Level 4 and Math Level 4	4 / 6
METS 115	Intro to Mechanical Systems	Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)	4 / 6
<b>Credits</b>			<b>14 / 18</b>
<b>Total Credits</b>			<b>60 / 83</b>