



Computer Automated Design A.A.S.

Curriculum Code: 1801

Effective: Fall 2020 – Summer 2025

Description

This program prepares individuals to apply technical skills and knowledge of computer software installed on a variety of stationary devices and mobile devices to the CAD design process leading through to output of product manufacturing. Automation design brings together engineering. Graphics design systems across the production cycle and links communication to the industry 4.0 concept. Students receive detailed instruction on building virtual representations of products by employing 3D parametric Solid Modeling found in the automotive, aerospace, medical, nuclear, special machinery, and defense industries. Computer Aided Design software is also applied to staging a product through virtual simulation and analysis of computer numerical control, computer programming of robotic systems, metrology quality control actions. Solid models are used in assemblies and drawings to convey material properties, dimensions and tolerances, execution of engineering change orders through until tool production, and additive manufacturing, and 3D printing.

Contact 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.

General Education - Applied Degree, Recommended Choices

(For the full list of options, see [General Education](#))

- English Composition – *Select one*
ENGL 124, Technical Writing, 3 credits / 3 billing hours
- English Composition (Second Course)/Communications or Applied Communications – *Select one*
COMM 110, Communication in the Workplace, 3 credits / 3 billing hours
- Humanities and Fine Arts or Social Sciences or Applied Social Sciences – *Select one*
MGMT 234, Diversity in the Workplace, 3 credits / 3 billing hours
- Mathematics or Applied Mathematics – *Select one*
MATH 115, Technical Math II, 4 credits / 4 billing hours
- Natural Sciences Lab or Applied Science and Technology Lab
Program of Study Required Courses will meet this requirement

Program of Study Required Courses

Course Code	Course Title	Credit / Billing Hours
METD 110	Mechanical CAD Drafting I	4 / 6
METD 111	Mechanical CAD Drafting II	4 / 6
METD 130	Geometric Dimension/ Tolerance	4 / 6
METD 150	Industrial Blueprint Reading	3 / 3
METD 220	Basic Unigraphics/NX	4 / 6
METD 221	Advanced Unigraphics/NX	4 / 6
METD 240	Basic NX Machining	4 / 5
METD 250	Detailing Assembly Drawings	4 / 6
METD 265	Basic CAD FEA Simulation	4 / 6
METM 100	Manufacturing Processes	3 / 4.5
METM 108	Machine Tool Operations	4 / 6
METM 190	Metallurgy and Heat Treatment	4 / 6
METM 195	Quality/Metrology/ Inspection	2 / 3
METM 220	Basic Mastercam	4 / 6
METS 115	Intro to Mechanical Systems	4 / 6

Total Credit Hours

69 credits / 94.5 billing hours

Recommended Course Sequence

Semester I	Semester II
Gen Ed – Mathematics or Applied Mathematics	Gen Ed – English Composition
METD 110	METD 111
METD 150	METD 130
METM 100	METD 220
METM 108	METS 115

Semester III	Semester IV
Gen Ed – English Composition (Second Course)/Communications or Applied Communications	Gen Ed – Humanities and Fine Arts or Social Sciences or Applied Social Sciences
METD 221	METD 240
METD 250	METD 265
METM 195	METM 190
METM 220	