# Computer Automated Design A.A.S.

**LANSING COMMUNITY COLLEGE**

Career Community: Electrical and Manufacturing
Curriculum Code: 1801
Effective: Fall 2023 – Summer 2028
Revised 12/20/23

## 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 tool production, additive manufacturing, and 3D printing.

## Milestone

In addition to the required General Education courses in Math and English, completion of METD 110, METD 150, and METD 220 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in these courses is the foundation for learning in other required courses. Students are encouraged to contact their faculty if they need additional assistance with learning the concepts presented in these courses.

## Contact Information

For further information, including career options, course substitutions and waivers, etc., 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 Degrees, Recommended Courses

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

- English Composition or Applied English – *Select one*
  ENGL 124, Technical Writing, 3 credits / 3 billing hours

- English Composition (second course)/Communication or Applied Communication – *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 | 4 / 6 |
| METM 220 | Basic Mastercam | 4 / 6 |
| METS 115 | Intro to Mechanical Systems | 4 / 6 |

## Minimum Total Credit Hours

71 credits / 97.5 billing hours

## Recommended Course Sequence

| Semester I |
|---|
| Gen Ed – Mathematics or Applied Mathematics |
| METD 110 – Milestone course |
| METD 150 – Milestone course |
| METM 100 |
| METM 108 |

| Semester II |
|---|
| Gen Ed – English Composition or Applied English |
| METD 111 |
| METD 220 – Milestone course |
| METM 195 |
| METS 115 |

| Semester III |
| --- |
| Gen Ed – English Composition (second course)/Communication or Applied Communication |
| METD 130 |
| METD 221 |
| METD 250 |
| METM 220 |

| Semester IV |
| --- |
| Gen Ed – Humanities and Fine Arts or Social Sciences or Applied Social Sciences |
| METD 240 |
| METD 265 |
| METM 190 |

*LCC makes every effort to limit revisions to the pathways during their effective timeframe. However, the College reserves the right to update certificate and degree title changes, and make course changes as needed, without prior notice.*