Mechanical Technology: CAD Design
Associate in Applied Science Degree, Career program
Division of STEM, Associate Dean: Bradley Cole
Department Chair: John Longwell

Every new product, machine, vehicle, or device we enjoy today represents the work of creative mechanical designers. Those who derive satisfaction from the challenge of solving mechanical problems, making things work, and using computer technology to create new things may have a future in this exciting field. This program represents a blend of applied design theory with the most recent innovations in Computer-Aided Design (CAD), Rapid Prototyping, Computer Numerical Control and traditional industrial practices. Initial courses focus on topics common to all technical fields, including mathematics, engineering graphics, machine tools, and basic electricity. Subsequent courses become more specialized as students apply computer technology to problems related to machine design and automation.

Graduates are prepared to:
• Use of a CAD system for design, manufacture, and analysis; select materials, and design mechanical components and systems;
• Perform technician assignments involving measurements, test equipment, data recording and analysis;
• Communicate with and understand technical terminology;
• Use word processing, spreadsheet, and presentation software;
• Recognize and use project management techniques.

Should students decide to continue their education at the four-year college level, courses taken at Corning transfer to upper-division colleges granting Bachelor of Technology degrees in Mechanical Technology, Manufacturing Technology, and Manufacturing Engineering Technology.

Program Requirements:

<table>
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<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>English (ENGL 1010 and 1020)*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics (MATH 1230-1240 or higher)*</td>
<td>6</td>
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<tr>
<td>Social Sciences elective</td>
<td>3</td>
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<tr>
<td>Physics (PHYS 1010)</td>
<td>4</td>
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<tr>
<td>Technical Concentration (ELEC 1010; TECH 1030, 1080; MECH 1050, 1060, 1550, 1570, 2010, 2050, 2170, 2210; CADD 1700, 2710)</td>
<td>39</td>
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<tr>
<td>Technical Elective***</td>
<td>3</td>
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<tr>
<td>Total hours</td>
<td>64</td>
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Students must have good working knowledge of WORD (word processing) and EXCEL (spreadsheets and charts) for science and technology courses. If not already required in their program, students who lack these skills should still take TECH 1110 and TECH 1120 to make up the deficiency. Challenge exams for these courses are also available.

Sample Sequence: (intended as a guide for academic planning. It need not be followed exactly or completed in four semesters.)

First Semester
- English (ENGL 1010) 3
- Mathematics (MATH 1230 or higher) 3
- Engineering Graphics I (MECH 1050) 3
- Manufacturing Methods (TECH 1030) 3
- Manufacturing Methods Lab (TECH 1080) 1
- Electricity (ELEC 1010) 4

Second Semester
- English (ENGL 1020) 3
- Mathematics (MATH 1240 or higher) 3
- Engineering Graphics II (MECH 1550) 3
- Physics (PHYS 1010) 4
- Dimensional Metrology (MECH 1570) 3

Third Semester
- Social Sciences elective 3
- Hydraulics and Pneumatics (MECH 2050) 3
- Technical Mechanics (MECH 1060) 2
- Computer Aided Drafting I (CADD 1700) 3
- Materials (MECH 2210) 4
- Technical Elective 0-3

Fourth Semester
- Social Sciences elective 3
- Machine Design (MECH 2010) 3
- Strength of Materials (MECH 2170) 4
- Computer Aided Drafting II (CADD 2710) 3
- Technical elective 0-3

Footnotes:
*Based on placement, students might be required to take developmental and/or prerequisite classes before taking the required English and Math courses. Math 1310 does not count toward the 6 credits of math for the program.
*High school or equivalent preparation required: Two years of mathematics including algebra and either geometry or intermediate algebra.
***Technical elective: Choose from MFGT 2020 or MECH 1560. Note: both can be taken if desired and are recommended by the Technology Department.