

Mechanical Design Technology



Engineering • Manufacturing • Industrial Technology

Career Pathways

The associate of applied science degree with specialization in mechanical design technology is designed to equip students with one of the most sought-after technical skills in this area – mechanical drafting and CAD. This program is representative of the highly technological demands of business and industry and maintains its leading edge with assistance from qualified representatives of industry on current mechanical design practices and future trends. Course work within the program includes manufacturing processes, strength of materials, computer-aided drafting, computer-aided manufacturing, geometric dimensioning, and tolerancing and solid modeling.

Students will gain the knowledge and ability to determine part specifications, dimensioning techniques, manufacturing processes and strength of materials through vigorous application-based projects. The students will achieve a thorough understanding of drafting fundamentals and proceed to computer-aided drafting and computer-aided manufacturing.

Mechanical design technologists may work in many areas, including product design and development and manufacturing and production for organizations ranging from large multi-national corporations to small local shops. The demand for qualified CAD operators has exploded as companies take advantage of this progressive technology. Graduates of this program will be prepared for entry-level employment in the following areas:

- CAD operator/designer
- Tool and die drafter
- Layout drafter
- Product drafter
- Detailer
- Engineering technician
- Basic machinist
- CAD/CAM operator
- Research and development technician
- Technical sales representative

In addition to completion of the required general education courses, students desiring the program designation on their transcript must complete the required core and specialized courses.

Credits

Required General Education Courses 19

ENGL 101 (Written and Oral Communication) or ENGL 151 (English Composition I)	3
¹ MATH	6
POLSC 151 (Introduction to Political Science)	3
² Social Science/Humanities Elective.....	3
³ PHY 101 or 151, or CHEM 150 or 151.....	4

Required Core Courses 46

1st Semester

^{4†} MDTC 160 (Mechanical Drafting and CAD I)	4
† MECH 103 (Basic Machine Tools)	4

2nd Semester

MDTC 161 (Mechanical Drafting and CAD II)	4
MDTC 152 (Descriptive Geometry)	4
MECH 102 (Manufacturing Processes)	4

Winter or Spring Semester

MECH 201 (Introduction to CAD/CAM)	3
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3rd Semester

MDTC 226 (Geometric Dimensioning and Tolerancing).....	3
MDTC 228 (Introduction to Solid Modeling-SolidWorks)	3
METC 170 (Introduction to Parametric CAD/CATIA)	3
MATL 101 (Industrial Materials)	3

4th Semester

MDTC 242 (Mechanical Design Capstone Project).....	4
METC 220 (Statics & Strength of Materials)	4
QSTC 150 (Intro to Metrology).....	3

Total Degree Requirements 65

† Tech Prep course. See page 14.

¹ See page 37 for specific Industrial Technology Division mathematics requirements for the associate of applied science degree.

² See the social science/humanities alternatives listed on page 37.

³ Mechanical design technology students are strongly encouraged to take PHY 101 or 151.

⁴ Meets computer skills requirement.

**Certificate Program:
Mechanical Design Technology**

In addition to the two-year associate degree program, Monroe County Community College offers a certificate program in mechanical design technology. We recognize that many employers place value on a certificate which authenticates specialized educational preparation. The program concentrates upon basic core courses with skill development and job upgrading being the primary objectives. All courses taken in the certificate program are applicable toward the associate of applied science degree.

MATH (Mathematics)	4
MDTC 152 (Descriptive Geometry)	4
† MDTC 160 (Mechanical Drafting and CAD I)	4
MDTC 161 (Mechanical Drafting and CAD II)	4
MDTC 226 (Geometric Dimensioning and Tolerancing)	3
MDTC 228 (Introduction to Solid Modeling-SolidWorks)	3
† MECH 103 (Basic Machine Tools)	4
Total Certificate Requirements	26

† Tech Prep course. See page 14.