

Program Information

The Anoka Technical College Mechanical CAD Drafter diploma is a 58-credit program that consists of technical courses designed to develop skills in mechanical drafting, design, and related fields.

All manufactured goods are created following a design process and this process needs to be documented. This documentation includes three-dimensional computer models, detailed two-dimensional drawings, bill of materials, engineering and manufacturing changes, physical prototypes, and more. The ability to follow strict industry standards while utilizing creativity to solve and document complex problems is the job of a mechanical designer.

In addition to drafting and detailing skills, the students receive training in related areas such as industrial materials, manufacturing methods, machining, and professional communication.

Students also receive hands-on training in Anoka Technical College’s computer aided drafting lab. (AutoCAD, Inventor, ProE/Creo, and Solidworks)

The primary goal of the Mechanical Drafting and Design program is to provide all graduates with the solid technical foundation necessary to ensure their success in a wide variety of employment opportunities. To accomplish this goal, program learning outcomes and program objectives are defined and assessed for continuous improvement.

Program Objectives. Graduates two to three years into their careers should have the foundation to:

1. Identify, create and evaluate solutions to complex engineering-related problems in a timely and professional manner utilizing the skills developed in the areas of design, manufacturing and mechanics.
2. Solve technical problems while considering the local, national, and global requirements and impact of the solution.
3. Successfully function as a team member and leader.

Program Learning Outcomes

- Apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- Apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- Conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- Function effectively as a member of a technical team.
- Identify, analyze, and solve narrowly defined engineering technology problems.
- Apply written, oral, and graphical communication in both technical and non-technical environments; and identify and use appropriate technical literature.
- Understand the need for and an ability to engage in self-directed continuing professional development.
- Understand and commit to addressing professional and ethical responsibilities, including a respect for diversity.
- Commit to quality, timeliness, and continuous improvement.

- Demonstrate knowledge and technical competency appropriate to the objectives of the program in engineering materials, applied mechanics, and manufacturing methods.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in applied drafting practice emphasizing mechanical components and systems, as well as fundamentals of descriptive geometry, orthographic projection, sectioning, tolerancing and dimensioning, and basic computer aided drafting and design with technical depth in at least one of these areas.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in the application of physics and engineering materials having an emphasis in applied mechanics, or in-depth application of physics having emphasis in mechanical components and design.

Industry and Career Outlook

Anoka Technical College Mechanical Drafting and Design Technology program graduates find employment with manufacturing companies, engineering firms, electro-mechanical companies, and contract firms. Mechanical Drafting and Design Technology graduates have the necessary knowledge and an excellent foundation to begin their careers as mechanical drafters in engineering departments that design and manufacture hard goods products of every description. Most mechanical drafters begin as detail drafters, making the drawings required for the manufacture of products. Mechanical drafters can advance to supervisory positions within the department or may advance to assistant engineers as they gain experience. Other areas of advancement include purchasing and sales.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

Program Start Dates

Fall Semester.....August
 Spring Semester.....January (With Instructor Approval)**
 **Students who start in the spring will need longer to complete due to course prerequisites.

Course Prerequisites

Some courses in this program may require a prerequisite. Please see [course descriptions](#) for more details.

Program Sequence

Fall Semester	18
□ MATH 1081 Technical Mathematics	5
□ MECH 1200 Mechanical CAD I.....	4
□ MECH 1216 Drafting Standards.....	5
□ MECH 2064 Introduction to Inventor.....	4
Spring Semester.....	12
□ MACH 1090 Machining Fundamentals.....	2
□ MECH 1229 Materials and Processes.....	3
□ MECH 2055 Geometric Dimensioning and Tolerancing.....	3
□ MECH 2074 Solidworks	4



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Mechanical CAD Drafter

Diploma

Fall Semester	15
<input type="checkbox"/> ENGL 1107 Composition (Goal 1&2)	4
OR	
<input type="checkbox"/> ENGL 2105 Business and Technical Writing (Goal 1&2)	4
<input type="checkbox"/> MECH 1235 Statics and Strengths of Materials	4
<input type="checkbox"/> MECH 2035 Process Design Drafting	3
<input type="checkbox"/> MECH 2084 Introduction to ProE/Creo.....	4
Spring Semester	13
<input type="checkbox"/> MECH 1245 Sheet Metal Concepts and Applications	3
<input type="checkbox"/> MECH 2045 Design Projects	4
<input type="checkbox"/> MECH 2080 Special Projects.....	3
<input type="checkbox"/> MECH 2090 Advanced CAD.....	3

Graduation Requirements

Students must earn a cumulative 2.0 GPA or higher to be eligible for graduation from this program.

Faculty Contact

[Paul Klevann](mailto:Paul.Klevann@anokatech.edu)..... 763-576-4188

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or EnrollmentServices@anokatech.edu

Also see: Mechanical CAD Drafting & Design AAS and Mechanical CAD Operator certificate