

# Mechanical Design Technology

## Degree Type

Associate in Science

Mechanical Design Technology responds to industry needs for trained individuals who can follow the design process from inspiration to the final production design of manufactured products. The Mechanical Design Technology program prepares specialists who are capable of integrating all the steps of the design process.

The mechanical designer requires knowledge in many areas including Computer Aided Drafting and Design, Machine Shop, Robotics, and Machine Components.

Foundation courses will provide knowledge of physics, mathematics, machine shop practices, machine theory and automation programming. Subsequent courses build upon this basic knowledge to develop applications related to modern machine design.

To prepare students for the rapid pace of technological changes in the workplace, the Mechanical Design Technology program seeks to develop long-term sustainable design and problem-solving capabilities.

While manufacturing has had its struggles in recent years, demand is expected to be strong for mechanical designers as companies emphasize high-quality and safe products that are easy to use. High technology products in medicine, transportation, and other fields, and growing global competition among businesses are expected to keep designers busy.

Technical Standards: Please refer to Technical Standards section for details regarding this program.

Upon the completion of the degree in Mechanical Design Technology, graduates will be able to:

1. Evaluate and apply information technology effectively.
2. Generate engineering drawings that conform to industry standards.
3. Create three dimensional CAD models and assemblies that meet specific design criteria.
4. Use three dimensional CAD models for strength and motion analysis, animation, machining and rapid prototyping processes.
5. Evaluate and specify economical and environmentally friendly manufacturing processes and materials for product development.
6. Produce complete and comprehensive drawing packages as well as understand Engineering Change Order procedures.
7. Develop, design and manufacture a socially responsible industrial product.
8. Demonstrate critical and creative thinking skills to meet design and production deadlines.
9. Perform basic automation programming, fluid power, machining, and electronics related tasks in a production or test environment.

In addition, the graduate will be able to demonstrate competency in the general education outcomes.

## First Year - Fall Semester

Item #	Title	Class Hours	Lab Hours	Credits
CAD111N	CADD I	3	4	5
MTTN101N	Manufacturing Processes	3	0	3
ENGL101N	College Composition	4	0	4
MATH110N	Algebra & Trigonometry	4	0	4

## First Year - Spring Semester

Item #	Title	Class Hours	Lab Hours	Credits
CAD112N	CADD II	3	4	5
MTTN118N	Machining Technology	2	3	3
MDTN110N	Automation Programming	1	4	3
	PHYS130N or PHYS101N			4

## Second Year - Fall Semester

Item #	Title	Class Hours	Lab Hours	Credits
CAD215N	CADDIII	3	6	5
ELET131N	Circuit Analysis I	3	3	4
ELMT203N	Applied Mechanics I	3	1	3
	English/Communications Core and Elective Requirements			3

## Second Year - Spring Semester

Item #	Title	Class Hours	Lab Hours	Credits
MDTN285N	Mechanical Design Capstone	3	2	4
ELMT204N	Fluid Power Design	2	1	2
ELMT210N	Applied Mechanics II	2	1	2
MTTN201N	Lean and Green Manufacturing Methods	3	0	3
	Behavioral Social Science Core Requirement			3
	Humanities/Fine Arts Core Requirement			3
<b>Total Credits</b>				<b>63</b>