



Course Outcome Summary

Required Program Core Course

MDTC 152 Descriptive Geometry

Course Information

Division	ASET
Contact Hours	90
Theory	30
Lab Hours	60
Total Credits	4

Prerequisites **MDTC 160**

Course Description

This course consists of lectures, discussions, and home and classroom drawings. Major topics and applications will include: fundamental theory of the point, line and plane with application to solids, generation and classification of lines and surfaces, tangent planes, sections, intersections, development and applications to engineering problems.

This course is a required core course for students pursuing an AAS in Mechanical Design Technology

Program Outcomes Addressed by this Course:

Upon successful completion of this course, students should be able to meet the program outcomes listed below:

- A. Effectively communicate technical ideas and problem-solving decisions with others.
- B. Demonstrate knowledge, techniques, skills, and use of the appropriate tool in mechanical design applications.
- C. Apply math, science, and engineering technology principles to solve problems in mechanical design.
- D. Use creativity in the design of mechanical components and systems.
- E. Recognize problems in mechanical design applications and develop appropriate solutions.
- F. Work productively as an individual and as a team member of a problem-solving team in an engineering environment.
- G. Recognize the need to stay current in the mechanical design career field.
- H. Demonstrate professional and ethical behavior.

Course Outcomes

In order to evidence success in this course, the students will be able to:

1. **Identify an engineering problem that can be solved using Descriptive Geometry techniques.**
Applies to Program Outcome
 - A. Effectively communicate technical ideas and problem-solving decisions with others.
 - B. Demonstrate knowledge, techniques, skills, and use of the appropriate tool in mechanical design applications.
 - C. Apply math, science, and engineering technology principles to solve problems in mechanical design.
 - E. Recognize problems in mechanical design applications and develop appropriate solutions.
2. **Integrate problem solving and related technologies into the process.**
Applies to Program Outcome
 - A. Effectively communicate technical ideas and problem-solving decisions with others.
 - B. Demonstrate knowledge, techniques, skills, and use of the appropriate tool in mechanical design applications.
 - C. Apply math, science, and engineering technology principles to solve problems in mechanical design.
 - F. Work productively as an individual and as a team member of a problem-solving team in an engineering environment.



3. Use industry standard research and design techniques.

Applies to Program Outcome

- A. Effectively communicate technical ideas and problem-solving decisions with others.
- B. Demonstrate knowledge, techniques, skills, and use of the appropriate tool in mechanical design applications.
- C. Apply math, science, and engineering technology principles to solve problems in mechanical design.
- D. Use creativity in the design of mechanical components and systems.
- E. Recognize problems in mechanical design applications and develop appropriate solutions.
- F. Work productively as an individual and as a team member of a problem-solving team in an engineering environment.

4. Demonstrate proper documentation procedures.

Applies to Program Outcome

- A. Effectively communicate technical ideas and problem-solving decisions with others.
- B. Demonstrate knowledge, techniques, skills, and use of the appropriate tool in mechanical design applications.
- F. Work productively as an individual and as a team member of a problem-solving team in an engineering environment.

5. Use industry standards and codes.

Applies to Program Outcome

- A. Effectively communicate technical ideas and problem-solving decisions with others.
- B. Demonstrate knowledge, techniques, skills, and use of the appropriate tool in mechanical design applications.
- F. Work productively as an individual and as a team member of a problem-solving team in an engineering environment.
- G. Recognize the need to stay current in the mechanical design career field.

6. Prepare documentation relating to the design problem: conceptualization sketches, calculations, working drawings.

Applies to Program Outcome

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- D. Use creativity in the design of mechanical components and systems.
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