

# 2024-2025 Assessment Plan

## Mechanical Drafting, Design, & Eng Technology

2024-2025

Mechanical Drafting, Design, & Eng Technology Learning Outcomes

### Basic Drawing Skills

Identify and demonstrate appropriate use of drafting tools, materials, and equipment. Demonstrate knowledge of the use of CAD as a drafting tool. Drawing standards and conventions. Utilize appropriate drawing layout and scale. Complete annotation on drawings. Complete a title block. Demonstrate sketching skills and techniques.

MEASURES	RESULTS	ACTIONS
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### Geometric Construction

Identify geometric terms and constructions. Produce basic geometric constructions. Construct lines at any given angle. Construct irregular curved lines. Construct geometric shapes and plane figures. Draw lines. Draw curved elements.

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Applied Mathematics

Basic mathematic operations. Apply methods of measurement. Calculate distance, area, and volume. Calculate fractions and decimals. Demonstrate conversion skills. Calculate taper/slope. Demonstrate knowledge of algebraic equations. Demonstrate knowledge of geometry. Demonstrate knowledge of trigonometry.

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Dimensioning Skills

**Mechanical Drafting, Design,**

Dimension basic features. Apply local and general notes. Interpret abbreviations and symbols. Demonstrate metric dimensioning. Demonstrate dual dimensioning. Demonstrate tabular/charted dimensioning. Demonstrate baseline dimensioning. Demonstrate tolerancing practices. Identify finished surfaces. Demonstrate geometric dimension and tolerancing (GD&T).

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**Multiview Drawing**

Produce basic orthographic views. Produce auxiliary views. Produce section views. Produce intersections and developments. Produce schematic drawings. Produce pictorial drawings. Produce detail working drawings. Produce assembly drawings. Demonstrate drawing revisions. Produce modified part drawings.

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**Threads and Fasteners**

Identify and apply fastener terminology and symbols. Identify and apply screw thread terminology and symbols. Produce threaded fastener drawings. Produce common fasteners and applications

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**Manufacturing Processes**

Demonstrate knowledge of machining operations. Demonstrate knowledge of welding. Demonstrate knowledge of various manufacturing processes. Demonstrate knowledge of various materials. Identify standard shop tools and equipment. Demonstrate knowledge of mechanical components.

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**Design Principles**

Explain design guidelines (form, function, repetition, etc.). Identify steps of the design process/cycle. Research and design a project. Use reference materials.

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