|  |
| --- |
| **MECHANICAL DRAFTING, 15.1300.40** |
| **STANDARD 1.0 ─ APPLY MEASUREMENT AND SCALE CONCEPTS IN DESIGN DRAFTING** |
| 1.1 | Identify types of measurement used in design drafting |
| 1.2 | Explain the use of measurement tools (e.g., mechanical scale, metric scale) |
| 1.3 | Determine and apply appropriate scale |
| **STANDARD 2.0 ─ INTERPRET DESIGN DRAFTING DOCUMENTS** |
| 2.1 | Interpret dimensions, symbols, legends, and scales |
| 2.2 | Analyze how content and information are communicated in technical drawings |
| 2.3 | Analyze technical drawings for clarity, completeness, and accuracy |
| 2.4 | Perform cross-referencing on technical views |
| 2.5 | Identify and describe mechanical, civil, and architectural drawings |
| 2.6 | Check prints’ dimensions and notation detail for accuracy and completeness |
| **STANDARD 3.0 ─ APPLY INDUSTRIAL STANDARDS TO CREATE TECHNICAL DRAWINGS** |
| 3.1 | Identify, select, and use fundamental drafting techniques for drawings |
| 3.2 | Compare and contrast manual and computer drafting techniques |
| 3.3 | Classify line type and line weight |
| 3.4 | Create and identify elements of title blocks and borders |
| 3.5 | Apply notes and dimensions |
| 3.6 | Draw geometric constructions |
| 3.7 | Determine correct drawing scale and layout based on output requirements (e.g., hard copy, electronic delivery) |
| 3.8 | Organize and maintain drawings and supporting documents |
| 3.9 | Prepare detail and assembly working drawings |

|  |
| --- |
| **STANDARD 4.0 ─ UTILIZE BASIC COMPUTER CONCEPTS, OPERATIONS, AND INFORMATION TECHNOLOGY APPLICATIONS** |
| 4.1 | Use computer hardware and input/output devices for design drafting problems |
| 4.2 | Apply file and disk management techniques |
| 4.3 | Import and export data files using different formats (e.g.,dxf, pdf, jpeg) |
| 4.4 | Prepare and access drawings for file management and transfer |
| **STANDARD 5.0 ─ USE A CADD SYSTEM AND PROCEDURES** |
| 5.1 | Explore and determine applicability of CADD |
| 5.2 | Use CADD software to set up drawing (e.g., scale, format, dimensioning) |
| 5.3 | Determine and apply CADD commands and techniques (e.g., layers, colors, line types, editing commands, properties) |
| 5.4 | Employ available libraries and templates |
| 5.5 | Utilize coordinate systems |
| **STANDARD 6.0 ─ CONSTRUCT DETAIL VIEWS AND DRAWINGS** |
| 6.1 | Determine views for projection (e.g., plan, top, front) |
| 6.2 | Identify, create, and place views for orthographic features |
| 6.3 | Identify, create, and place auxiliary views to determine true size, shape, and location of non-orthogonal features |
| 6.4 | Identify, create, and place appropriate section views |
| 6.5 | Construct full, half, offset, aligned, revolved, and removed views |
| 6.6 | Utilize various material hatch patterns in section views |
| 6.7 | Draft an assembly |
| 6.8 | Draft intersections |
| 6.9 | Draft developments |
| 6.10 | Draft patterns, including radial and parallel line patterns |
| **STANDARD 7.0 ─ COMPARE AND CONTRAST BASIC MANUFACTURING PROCESSES** |
| 7.1 | Identify types of parts to be detailed (cast, machined, forged, sheet metal, welded) |
| 7.2 | Incorporate manufacturing process symbols in mechanical drawings (e.g., welding, machine, foundry, sheet metal) |
| 7.3 | Identify fasteners used in manufacturing processes |
| **STANDARD 8.0 ─ INCORPORATE DIMENSIONING STANDARDS** |
| 8.1 | Apply dimensioning rules correctly and in compliance with ASME Y14 standards |
| 8.2 | Apply metric and/or dual dimensions to drawing in compliance with ASME Y14 standards |
| 8.3 | Select/set/draw appropriate dimension features (i.e., arrowhead, text sizes, extension lines) |
| 8.4 | Draw/select appropriate dimensioning practices (e.g., conventional, tabular, datum, ordinate, aligned, rectangular coordinate, polar systems) |