

Competency Task List – Secondary Component
Drafting and Design Technology/Technician, General CIP 15.1301
High School Graduation Years 2022, 2023, 2024

100 Orientation

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|----------------------------------------------|----------------------------------------|----------------------------|
| 101 | Follow safety measures in the drafting room. | | |
| 102 | Demonstrate professionalism. | | |

200 Introduction to Drafting and Design

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|---------------------------------------------------------------------------------------|----------------------------------------|----------------------------|
| 201 | Identify basic board drafting tools and equipment which are used to produce drawings. | | |
| 202 | RESERVED | | |
| 203 | Use various types of scales (architectural, mechanical, and machining). | | |
| 204 | Use the imperial and metric system of measurement to create a single view drawing. | | |
| 205 | Identify components of a drawing. | | |
| 206 | RESERVED | | |

300 Geometric Construction

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|----------------------------------------------------------|----------------------------------------|----------------------------|
| 301 | Draw to scale. | | |
| 302 | Draw geometric figures. | | |
| 303 | Create drawings using geometric construction principles. | | |

400 Reserved

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|----------|----------------------------------------|----------------------------|
| 401 | RESERVED | | |
| 402 | RESERVED | | |
| 403 | RESERVED | | |

500 Freehand Drawing and Sketching

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|---------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|
| 501 | Identify and sketch the alphabet of lines. | | |
| 502 | Sketch orthographic views. | | |
| 503 | Sketch an isometric drawing. | | |
| 504 | Develop a perspective drawing using freehand methods. | | |
| 505 | RESERVED | | |
| 506 | RESERVED | | |
| 507 | Express an idea using the sketching process. | | |
| 508 | Create letters and numbers in single stroke capital letters (Gothic) on a technical sketch. | | |

600 Introduction to Engineering Math

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|----------------------------------------------------------------------------|----------------------------------------|----------------------------|
| 601 | Determine the scale of various drawings. | | |
| 602 | Use basic applied mathematics to solve engineering problems. | | |
| 603 | Construct lines using relative, absolute, and polar coordinate systems. | | |
| 604 | Establish the relationship among points, lines, and planes in a 3-D space. | | |
| 605 | Solve descriptive geometry problems. | | |

700 Introduction to Mechanical Drawing and Design

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|------------------------------------------------------------------------------|----------------------------------------|----------------------------|
| 701 | Identify and draw necessary orthographic views. | | |
| 702 | Explain the relationship of orthographic projection to a multi-view drawing. | | |
| 703 | Identify 1st angle and 3rd angle projection. | | |
| 704 | Identify and draw auxiliary views. | | |
| 705 | Identify and draw section views. | | |
| 706 | Identify and draw threads and fasteners. | | |
| 707 | Create working drawings (assembly, detail drawings, BOM) | | |
| 708 | Create a title block on a mechanical drawing. | | |
| 709 | Identify and draw basic welding symbols. | | |
| 710 | Reverse engineer a drawing from an existing part. | | |

800 Dimensioning

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|----------------------------------------------------------------|----------------------------------------|----------------------------|
| 801 | Apply measurements, notes, and symbols to a technical drawing. | | |
| 802 | Apply ASME Standards for dimensions, tolerances, and notes. | | |
| 803 | Apply ISO Standards for dimensions and notes. | | |
| 804 | RESERVED | | |
| 805 | RESERVED | | |

900 Introduction to Architecture

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|-------------------------|----------------------------------------|----------------------------|
| 901 | RESERVED | | |
| 902 | Construct a floor plan. | | |

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|-----|--------------------------------------------------------------|--|--|
| 903 | Construct an elevation. | | |
| 904 | Construct a typical wall section. | | |
| 905 | Draw a pictorial view. | | |
| 906 | RESERVED | | |
| 907 | Construct an electrical plan. | | |
| 908 | Apply ADA guidelines to an architectural set of floor plans. | | |

1000 Introduction to Civil Drafting

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|---------------------------------------|----------------------------------------|----------------------------|
| 1001 | Construct a site plan. | | |
| 1002 | RESERVED | | |
| 1003 | RESERVED | | |
| 1004 | RESERVED | | |
| 1005 | Identify survey and/or GPS equipment. | | |

1100 Introduction to Electronic Drafting

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|----------------------------------------|----------------------------------------|----------------------------|
| 1101 | Identify and describe various symbols. | | |
| 1102 | RESERVED | | |

1200 Computer Assisted Drafting (CAD)

| Item | Task | (X) Indicates Proficiency ¹ | Secondary Course Crosswalk |
|------|--------------------------------------------------------------|----------------------------------------|----------------------------|
| 1201 | Utilize input and output devices such as printers, plotters. | | |
| 1202 | Use drawing aids and controls. | | |
| 1203 | Use drawing and editing tools. | | |

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|------|--------------------------------------------------------------|--|--|
| 1204 | Use viewing tools. | | |
| 1205 | Utilize a commercially built drafting library. | | |
| 1206 | Produce a custom-built drafting library. | | |
| 1207 | Make a revision to an existing drawing. | | |
| 1208 | Configure and use dimensions and tolerances. | | |
| 1209 | Create 3-dimensional models. | | |
| 1210 | RESERVED | | |
| 1211 | Create parametric solid models. | | |
| 1212 | Render a drawing. | | |
| 1213 | Import, export, and link drawings. | | |
| 1214 | Manage and store files. | | |
| 1215 | Use rapid prototyping. | | |
| 1216 | Draw, modify, and apply text justifications on a CAD system. | | |

¹ Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)

Secondary CTE Instructor Signature _____ Date _____

Student Signature _____ Date _____