

Unit/Standard Number	<u>High School Graduation Years 2025, 2026 and 2027</u>	Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
	Drafting and Design Technology/Technician, General CIP 15.1301 Task Grid	
	Secondary Competency Task List	
100	ORIENTATION	
101	Demonstrate safety measures in the drafting room.	
102	Display professional demeanor and behavior.	
160	Identify and follow the Drafting and Design Program's Rules and Procedures	
200	INTRODUCTION TO DRAFTING AND DESIGN	
201	Identify basic board drafting tools and equipment which are used to produce drawings.	
202	RESERVED (202)	
203	Use various types of scales (architectural, engineer, and metric).	
204	Create single view drawings using the imperial and metric systems of measurement.	
205	Identify components of a drawing.	
206	RESERVED (206)	
300	GEOMETRIC CONSTRUCTION	
301	Draw to scale.	
302	Draw geometric figures.	
303	Create drawings using geometric construction principles.	
400	RESERVED	
401	RESERVED	
402	RESERVED	
403	RESERVED	
500	FREEHAND DRAWING AND SKETCHING	
501	Sketch the alphabet of lines.	
502	Sketch multiview drawings using orthographic principles.	
503	Sketch isometric drawings.	
504	Develop a perspective drawing using freehand methods.	
505	RESERVED (505-506)	
506	RESERVED (505-506)	
507	Communicate ideas using the sketching process.	
508	Create letters and numbers in single stroke capital letters (Gothic) on a technical sketch.	
600	INTRODUCTION TO ENGINEERING MATH	
601	Determine the scale of various drawings.	
602	Use basic applied mathematics to solve engineering problems.	

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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	
701	Draw necessary orthographic views.	
702	Explain the relationship of orthographic projection in a multi-view drawing.	
703	Identify 1st angle and 3rd angle projection.	
704	Draw auxiliary views.	
705	Draw various types of section views.	
706	Draw various types of threads and fasteners.	
707	Create working drawings (assembly, detail drawings, BOM)	
708	Create a title block on a mechanical drawing.	
709	Draw basic welding symbols.	
710	Reverse engineer a drawing from an existing part.	
760	Draw common geometric constructions	
761	Draw two-view drawings	
762	Draw three-view drawings	
800	DIMENSIONING	
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	
860	Identify and use common dimensioning systems	
861	Place proper general notes for manufacturing	
862	Interpret and use correct tolerancing techniques	
863	Draw sectional views, including full, half, aligned broke-out, auxiliary, revolved, and removed sections	
864	Prepare drawings with conventional revolutions and conventional breaks	
865	Draw complete set of working drawings, including details, assemblies, and parts list	
866	Group information on assembly drawing with identification numbering system	
867	treatment	
868	Discuss casting processes and terminology	
869	Explain the forging process and terminology	
870	Describe manufacturing processes	
871	Explain welding process drafting symbols	
872	Electrical schematics	
873	Sheet metal layout	

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900	INTRODUCTION TO ARCHITECTURE	
901	RESERVED	
902	Construct various plan views.	
903	Construct interior and exterior elevations.	
904	Construct a typical building and wall sections.	
905	Draw a pictorial view.	
906	RESERVED	
907	RESERVED	
908	Apply current ADA guidelines to set of architectural plans.	
950	Describe tools and techniques of drafting	
951	Prepare proportional design sketches (1/8" scale)	
952	Sketch preliminary presentation layouts (1/4" scale)	
953	Draw interior perspectives-one point and two point	
954	Draw exterior perspectives-two point	
955	Draw presentation floor plan with furniture (1/4" scale)	
956	Draw presentation elevation views (1/4" scale)	
957	Letter presentation drawings	
958	Use lettering devices	
959	Draw floor plan (1/4" scale)	
960	Check plan dimensions	
961	Draw basement plan (1/4" scale)	
962	Draw foundation plan (1/4" scale)	
963	Draw framing plan	
964	Draw electrical and plumbing plans	
965	Draw exploded view of plans - isometric view	
966	Draw second floor working drawing (1/4" scale)	
967	Draw exterior elevations (1/4" scale)	
968	Draw interior elevations	
969	Check elevation drawings	
970	Draw floor sections (1/4" scale)	
971	Draw typical wall section (3/4" scale)	
972	Draw cabinet sections/details	
973	Draw stair sections	
974	Draw fire place/chimney sections	
975	Draw door section	
976	Draw window section	
977	Draw millwork sections	
978	Draw parapet and roof sections	
979	Prepare plan abbreviations list/legends	
980	Use reference catalogs, research, internet, e-mail and feedback	
981	Complete a set of specification for a residential structure	

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982	Build preliminary scale model (1/8" scale)	
983	Build presentation scale model (1/4" scale)	
984	Describe necessary ingredients for climate control in a residential structure and effects of geographic location and sun control	
985	Explain estimating as it relates to building construction	
986	Code Review	
987	Draw HVAC plan	
988	Draw plumbing plan	
989	Draw electrical plan	
990	Draw structural plan	
991	Draw fire protection plan	
1000	INTRODUCTION TO CIVIL DRAFTING	
1001	Construct a site plan.	
1002	RESERVED	
1003	RESERVED	
1004	RESERVED	
1005	Identify survey and/or GPS equipment.	
1006	Identify the elements used to create a Civil design plan.	
1007	Read and interpret a deed.	
1060	Sketch preliminary site layout and study environmental impacts	
1061	Draw plot plan, utilities and services	
1062	Check site and plot plans	
1063	Draw landscape plans	
1100	INTRODUCTION TO ELECTRICAL AND ELECTRONIC DRAFTING	
1101	Identify and describe various symbols.	
1102	RESERVED	
1200	COMPUTER ASSISTED DRAFTING (CAD)	
1201	Utilize input and output devices.	
1202	Use drawing aids and controls.	
1203	Use drawing and editing tools.	
1204	Use viewing tools.	
1205	Utilize a commercially built drafting libraries.	
1206	Produce a custom-built drafting library.	
1207	Make revisions to existing drawings.	
1208	Configure and use dimensions and tolerances.	
1209	Create 3-dimensional models.	
1210	RESERVED	
1211	Create parametric solid models.	
1212	Create rendered drawings.	

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1213	Import, export, and link drawings.	
1214	Manage and store files.	
1215	Use rapid prototyping methods.	
1216	Create, modify, and apply text justifications on a CAD system.	
1260	Explore and learn the auto cad main menu	
1261	Learn how to begin a new drawing	
1262	Examine the status and command lines	
1263	Navigate the auto cad screen and pull-down menu systems	
1264	Discover the uses of dialogue and icon boxes	
1265	Learn how to obtain help from cad while in a drawing	
1266	Perform Plotting Techniques	
1267	Draw a three-dimensional object using 3-D coordinates (wire frame)	
1268	Construct objects using isometric, diametric, and trimetric methods	
1269	Construct objects using oblique drawing methods	
1270	Create a solid model	
1271	Draw objects using one, two or three point perspective/CAD	
1272	Apply a variety of shading techniques to pictorial drawings	
1273	Render a computer drawing	
1274	Apply drafting standards for Autocad	
1275	Prepare drawings using paper space / model space	
1276	Understand file storage / management	
1277	Understand multiple file management	
3000	PERFORMING SUPPLEMENTAL DRAFTING ACTIVITIES	
3060	Draw a cover sheet	
3061	Prepare plan abbreviations list	
3062	Add title block information to drawings	
3063	Indicate on plans the location of section views	
3064	Make copies of original drawings	
3065	File original working drawings	
3066	Perform intermediate reproduction; Scanning Rastor/Vector	
3067	Learn plotting techniques	
3068	Printing out 3D drawings to the 3D printer	