

DUTY AREAS AND TASKS	NOCTI COMPETENCY	NATIONAL SKILL STANDARD
<i>I. DRAFTING FUNDAMENTALS</i>		
A. Applying Basic Drafting Techniques		
1. Identify General Safety Procedures	BDS3	
2. Know Engineering Department Procedures	BDS3,BDS5,B DS6	ASME Y14.5M
3. Use Lettering: Gothic Style Techniques	GC6,BDS4,A M1,AM2,	ASME Y14.5M
4. Using Tools & Equipment and Apply Lines to Drawings	BDS4	ASME Y14.5M
5. Identify Media & Use Reproduction Equipment		ASME Y14.5M
6. Apply Geometric Construction Techniques	GC1,GC2,GC3 ,GC4,GC5,GC 6,GC7AM3,A M8	ASME Y14.5M
7. Apply Sketching Techniques	BDS7,PT2	ASME Y14.5M
8. Measuring, Using and the Arch-Mechanical-Metric-Civil Scale	AM4,AM5	ASME Y14.5M
9. Construct Multi-view Drawings	MD1,	ASME Y14.5M
a. Utilizing Competency-Based Vocational Education Materials		
b. Exploring Occupations		
c. Identify Health and Safety Requirements for the Trade		ASME Y14.5M
d. Establishing a Training Outline to reach personal Occupational Objectives		

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10. Construct Axonometric Drawings	MD6,PT1,	ASME Y14.5M
11. Construct Oblique Drawings	MD6	ASME Y14.5M
12. Apply Dimensioning: Basic Techniques	AM6,DS1,DS2 ,DS3,DS4,DS5, DS6,DS7,DS8, DS9,MD3	ASME Y14.5M
13. Construct Sections & Apply Drawing Conventions Drawing	MD2	ASME Y14.5M
14. Solve Descriptive Geometry Problems	MD2	ASME Y14.5M
15. Construct Auxiliary Views	AM9,MD2	ASME Y14.5M
16. Identify Fasteners & Springs	TF1,TF2,TF3,T F4	ASME Y14.5M
17. Construct Assay & Detail Drawing	MD7,MD9,MD 10,DP1,DP2,D P4,PT4	ASME Y14.5M
18. Construct Intersections and Developments	MD4,PT3	ASME Y14.5M
19. Comprehend Manufacturing - Forming Processes - Basic	MP1,MP2,MP3 ,MP5	
20. Comprehend Manufacturing Materials - Basic	MP4	
21. Apply Fundamental Design Technique	DP1,DP2,DP3, DP4	

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22. Evaluate Professional Development (Careers, Job Interview)		
B. Construct Drawings of Mechanical Concepts		
1. Apply Revolutions Techniques	MD2	ASME Y14.5M
2. Construct Piping Diagrams	MD5	ASME Y14.5M
3. Construct Welding Drawings	DP3	ASME Y14.5M
4. Construct Structural Drawings	AM1,AM4,AM 7,AM8,AM9	ASME Y14.5M
5. Layout Gears - Belts - Chains	AM7	ASME Y14.5M
6. Layout CAMS: Linkage & Actuators	MP6	ASME Y14.5M
7. Apply Dimensioning - Advanced Techniques (Geometric Tolerance)	DS10	ASME Y14.5M
C. Applying Basic CAD Commands		
1. Comprehend CAD System Management	BDS2	ASME Y14.5M
2. Understand User Interface	BDS2	ASME Y14.5M
3. Apply Basic Drawing Commands Entry	BDS2	ASME Y14.5M
4. Draw Basic 2-D Objects	BDS2	ASME Y14.5M
5. Apply Object Selection Commands	BDS2	ASME

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		Y14.5M
6. Apply Coordinate Entering Commands	BDS2	ASME Y14.5M
7. Apply Drawing Aids	BDS2	ASME Y14.5M
8. Apply File Maintenance Techniques	BDS2	ASME Y14.5M
9. Set/Apply Object Snap Commands	BDS2	ASME Y14.5M
10. Use Helpful Drawing Features	BDS2	ASME Y14.5M
11. Use Construction Aides	BDS2	ASME Y14.5M
12. Use Zoom Command	BDS2	ASME Y14.5M
13. Apply Panning & Viewing Command	BDS2	ASME Y14.5M
14. Apply Solid filled & Curved Polylines, & Splines	BDS2	ASME Y14.5M
15. Apply Adding & Altering Commands	BDS2	ASME Y14.5M
16. Apply Moving & Duplicating Commands	BDS2	ASME Y14.5M
17. Apply Modify & Maneuvering Commands	BDS2	ASME Y14.5M
18. Apply Hatching & Stretching Commands	BDS2	ASME

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		Y14.5M
19. Create Text, Notes & Specifications	BDS2	ASME Y14.5M
20. Apply Text Editing & Spell Checking Commands	BDS2	ASME Y14.5M
21. Create Tables	BDS2	ASME Y14.5M
22. Setup Drawing Parameters	BDS2	ASME Y14.5M
23. Set Layers & Line Types	BDS2	ASME Y14.5M
24. Plot & Print Drawings to Scale	BDS2	ASME Y14.5M
25. Set Multiple Viewports	BDS2	ASME Y14.5M
26. Apply Basic Dimensioning Commands	BDS2	ASME Y14.5M
27. Apply Advanced Dimensioning Commands	BDS2	ASME Y14.5M
28. Fine Tune Dimensioning	BDS2	ASME Y14.5M
29. Set Tolerancing	BDS2	ASME Y14.5M
30. Apply Calculation Command	BDS2	ASME Y14.5M
31. Create & Edit Groups	BDS2	ASME

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		Y14.5M
32. Create & Apply Blocks	BDS2	ASME Y14.5M
33. Create a Dynamic Blocks	BDS2	ASME Y14.5M
34. Create a Symbol Library	BDS2	ASME Y14.5M
35. Create fixed & Variable Attributes	BDS2	ASME Y14.5M
36. Extract Attributes from Blocks for report generation	BDS2	ASME Y14.5M
37. Create Isometric Drawings	BDS2	ASME Y14.5M
38. Create a Basic 3-D Model	BDS2	ASME Y14.5M
39. Apply User Coordinate System	BDS2	ASME Y14.5M
40. Create Solid Primitives, including cylinder, torus, cone, wedge, box & sphere	BDS2	ASME Y14.5M
41. Apply Basic Solid Modeling Techniques	BDS2	ASME Y14.5M
42. Prepare Solid Primitives, Boolean Subtraction & Union operations	BDS2	ASME Y14.5M
43. Adjust Solid Models	BDS2	ASME Y14.5M
44. Create a Full Section & Profile View from a solid Model	BDS2	ASME

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		Y14.5M
45. Prepare a Solid Model for Orthographic & Section Views	BDS2	ASME Y14.5M
46. Apply Physical Benefits of Solid Modeling	BDS2	ASME Y14.5M
II. INDEPENDENT STUDY PHASE: The student will choose tasks from the following Duty areas which are related to his/her occupation objectives		
A. Construct Architectural Drawings		
1. Construct Architectural Style Lettering		
2. Layout & Identify Site Conditions		
3. Construct Residential Designs		
4. Analyze Structural Members & Loading		
5. Construct Working Drawings & Houses		
6. Apply Dimensioning Techniques		
7. Construct Foundation Drawings		
8. Draw Details of Interior		
9. Layout Plumbing Diagrams		
10. Layout Electrical Diagrams		
11. Write Specifications for House Construction		
12. Draw Presentation Drawings		
B. Mapping and Topographical Drawing		
1. Draw Maps and Layout Surveys		
2. Plot from a Hand Survey Map		
3. Construct Contour Maps		
4. Measure Using Civil Scale		
C. Technical Illustrating		

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1. Use Mechanical Lettering Devices		
2. Construct Advances Pictorial Drawings		
3. Apply Shading Techniques		
D. Senior Portfolio		
1. Write cover letter		
2. Write letter to reader		
3. Write table of contents		
4. Copy certification		
5. Write a narrative of personal thoughts on education, school administration, likes & dislikes		
6. Write resume		
7. Write a description of class projects.		
8. Plot samples of drawings		
9. Research related field		
10. Gather letters of recommendations		
11. List career related post-secondary education opportunities		
12. list Honors/Awards		
13. List extra curricular activities/volunteer work/community service		