

CTE Course Description and Standards Crosswalk

Course Information

Course Name	Technical Drafting 1
Course Number	86010
Number of High School Credits	.5
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	Architect, Cabinetry, Carpenter, Pre-Engineering, Welder
Date of district Course Revision	September 2014

Career & Technical Student Organization (CTSO)

CTSO embedded in this sequence	SkillsUSA
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Occupational Standards

Source of Occupational Standards	United States National CAD Standards Version #6 (NCS) / SkillsUSA
Names/Numbers of Occupational Standards	CAD Standards Version#6 (NCS) Technical Drafting (TD)1-12

Registration Information

Course Description (brief paragraph – as shown in your student handbook or course list)	Technical Drafting 1 covers the principles of drafting design and computer-assisted drawing. In industry, ideas about a design are often communicated through a special kind of technical drawing process called drafting. Drafting provides many career opportunities in engineering design and communication. Students will learn how products are conceived, designed, and prepared for manufacturing. Emphasis is placed on accuracy, neatness, and time management, while representing objects in technical drawings.
Instructional Topic Headings (please separate each heading by a semi-colon)	Introduction to Basic Drafting Tools and Techniques and CAD; Measurement and Scales; Line Usage; Views and Planes; Industry Performance Standards; Dimension Techniques; Pictorial View; Careers in Drafting and Design; Encourage Career and Technical Student Organization (CTSO) Involvement

Summative Assessments and Standards

Technical Skills Assessment (TSA)	SkillsUSA
Course addresses:	Technical Drafting
New Alaska ELA and Math Standards	Yes
Alaska Cultural Standards	Yes
All Aspects of Industry (AAI)	Yes
Core Technical Standards	Yes
Employability Standards	Yes

Employability Standards

Source of Employability Standards	State of Alaska
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Tech Prep

Current Tech Prep Articulation Agreement? (Y/N)	No
Date of Current Agreement	

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Postsecondary Institution Name	
Postsecondary Course Name	
Postsecondary Course Number	
# of Postsecondary Credits	

Additional CTE Course Information

Author	
Course developed by	Ray Jensen, Tom Lord, Paul Moma, Revised by: Justin Aulie, Bryan Kirby, Chris Taylor, Brad Drake, Bryan Kirby, Ray Jensen
Course adapted from	Technical Drafting 1
Date of previous course revision	June 2006
Course Delivery Model	
Is the course brokered through another institution or agency? (Y/N)	N

Standards Alignment

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Utilize basic drafting and design tools such as AutoCAD drafting program, plotter/printer, compasses, and mechanical pencils.	TD1.0 & 2.0	AC-DES 6	L.9-12.6 RST.9-12.10	G-CO.5&12	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Determine the appropriate layout/drawing template for the drawing activity.	NCS 1.3 NCS 4.2 TD 1.0	AC 2, 6 AC-DES 6, 7	L.9-12.6 RST.9-12.7&10	G-CO.5&12 N-Q.2&3 S-ID.2,3,4,9	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Measure and draw within a standard tolerance.	NCS 4.28 TD 1.0	AC 2 AC-DES 6	L.9-12.6 RST.9-10.7	N-Q.1,2,3 S-ID.2,3,9 G-CO.5	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Understand and draw items to an appropriate scale.	NCS 2.0 TD 1.0	AC 2 AC-DES 6	L.9-12.6 RST.9-	N-Q.1,2,3 S-ID.2,3,9	B1, 4	A2	Planning Mgmt	SkillsUSA TD Assessment

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			10.7	G- CO.5&12			Finance Technical Skills Technology	
Produce dimensionally correct objects.	NCS 4.2 TD 1.0	AC 2 AC-DES 6	L.9-12.6 RST.9- 10.7	N-Q.1,2,3 S-ID.2,3,9 G- CO.1,2,3,4 ,5,9	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Apply drafting standards to line and line weights.	NCS 2.0 NCS 4.2 TD 1.0	AC 2 AC-DES 6	L.9-12.6 RST.9- 10.7	S-ID.3-9	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Draw lines according to the line types.	NCS 4.2 TD 1.0	AC 2 AC-DES 6	L.9-12.6 RST.9- 10.7	S-ID.3	B1, 4	A2	Planning Mgmt Finance Technical Skills	SkillsUSA TD Assessment
Given an object, determine the appropriate views it creates.	NCS 7.2 TD 3.0	AC 2 AC-DES 6	L.9-12.6 RST.9- 10.3&7	G-CO.2&6	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Use orthographic projection to develop views and object placement.	NCS 7.2 TD 3.0	AC 2 AC-DES 6 7	L.9-12.6 RST.9- 12.3	G-CO.2&6	B1, 4	A2	Planning Mgmt Finance Technical Skills	SkillsUSA TD Assessment

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							Technology	
Determine and utilize appropriate symbols and labeling techniques.	NCS Mod.6 TD 6.2	AC 1, 2	L.9-12.6 L.11- 12.2.a-b RST.9- 12.4 RST.11- 12.5	S-ID.9	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Identify and utilize various drawing techniques to depict objects in three dimensional space.	NCS 4.3.9 TD 9.0	AC 2 AC-DES 6 7	RST.9- 10.7 SL.9- 12.1.a-d L.9-12.6	G-CO.1&2	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Dimension an object utilizing the aligned and unidirectional methods.	NCS 4.2.8 TD 6.0	AC 2 AC-DES 6	L.9-12.6 L.11- 12.2.a-b RST.9- 12.4	G-CO.1	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Determine the most appropriate method of dimensioning angles, circles, arcs and chambers.	NCS 4.2.8 TD 6.0	AC 2 AC-DES 6	L.9-12.6 L.11- 12.2.a-b RST.9- 12.4	G-CO.1	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Follow professional ethics including software licensing, copyright and intellectual property laws in producing and monitoring web pages and sites.	NCS 0.2	AC 3, 5,	WHST.9- 12.8 L.9-12.6		B1,3,	A 1, 2, 6	Wk Habits Mgmt.	Statement of Authenticity
Identify careers related to design and drafting.	EAP 1&2	AC 5, 7	L.9-12.6 L.11-	G- CO.1,2,3,4	C4	A3, 5 B2 - 5	Planning Labor	AKCIS PLCP

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			12.2.a-b	,5			Community Wk Habits	
Encourage CTSO involvement	EAP 1&2	AC 2, 5, 7	L.11- 12.2.a-b SL.9- 12.1.a-d L.9-12.6	G- CO.1,2,3,4 ,5	C4	A 2, 5,	Technical Skills	SkillsUSA Membership

Instructional Resources

List the major instructional resources used for this course: (websites, textbooks, essential equipment, reference materials, supplies)

Books and Resources

Mechanical Drawing, French, Svenson, Helsel , McGraw Hill

Hands-On AutoCAD, Timothy Looney, Glenco

AutoCad 004

Exercise Workbook for Beginning AutoCAD , Cheryl Shrock, Shrock Publishing

Resources: Architectural Graphic Standards, Wiley, Ramsey-Sleeper, 8th Edition (or newest edition)

AutoCAD for Architecture, James E Fuller

Architecture Drafting and Design, Donald E. Hepler, Paul Wallach, Dana Hepler

Skills USA, <http://www.skillsusa.org/contests.html>

NAWIC - National Association of Women in Construct