

CTE Course Description and Standards Crosswalk

Course Information

Course Name	Technical Drafting 2
Course Number	86020
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	National CAD Standards Version#6 (NCS) / SkillsUSA
Names/Numbers of Occupational Standards	National CAD Standards #6 Mod 0-8 (NCS) Technical Drafting (TD)1-12

Registration Information

Course Description (brief paragraph – as shown in your student handbook or course list)	Technical Drafting 2 covers the advanced drawing methods and techniques related to engineering design and computer-assisted drawing. Emphasis is placed on methods of fastening products together and on developing working drawings. It is recommended for students wishing to continue with the technology courses as well as for students going into the field of engineering or other design drafting related occupations or educational programs. Examples would be interest in civil engineering, welding, and automotive design.
Instructional Topic Headings (please separate each heading by a semi-colon)	Introduction to Advanced Tools and Techniques; CAD Techniques; Dimension Techniques; Auxiliary View Development; Sectional Views; Line Intersection and Developments; Working Drawing Development; Data Storage and Transfer; 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?	No
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(Y/N)	
Date of Current Agreement	
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 2
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 advanced drafting and design tools such as AutoCAD drafting program, plotter/printers.	TD 1, 11	AC-DES 6	RST9-12: 10	G-CO; 1,2, 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, 2,	AC 2, 6 AC-DES 6, 7	RST9-12: 10	G-CO 2 NG 2,3 SID 2,3	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Have a working knowledge of menu options available with the CAD program the student is using.	NCS 1 TD 3.3, 7.1, 11	AC 6	RST9-12: 5, 6	SID 2,3,5	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Dimension an object utilizing the Geometric tolerances methods.	NCS 4.2.8 TD 6.0	AC2 AC-DES 6	RST9-12: 7	NQ 1,2,3 GCD 12, 13	B1, 4	A2	Planning Mgmt Technical	SkillsUSA TD Assessment

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				SID 2,3,5			Skills Technology	
Determine the most appropriate method of dimensioning angles, circles, arcs and chambers.	NCS 4.2.8 TD 6.0	AC2 AC-DES 6	RST9-12: 7	NQ 1- 3 GOC 1, 3, 4, 5, 12	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Using the tolerance dimensioning functions, place tolerances on working drawings in accordance with drafting design industry standards.	NCS 4.2.8 TD 6.0	AC2 AC-DES 6	RST9-12: 3, 7	SID 2,3 GCO; 1, 2 NQ; 1 - 3	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Use an auxiliary view where appropriate.	NCS 7.2 TD 6.0	AC2 AC-DES 6	RST 9-10 7	GCO; 1-6, 12,	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Transfer distance from appropriate views.	NCS 4.2.5 TD 3,4	AC2 AC-DES 6	RST9-12: 3 L 9-12;6	GCO; 1, 2, 3, 6, 9 NQ 1,2,3	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Draw irregular shapes, circles, and arcs with an auxiliary view.	NCS 4.2 TD 4	AC2 AC-DES 6	RST9-10; 7 RST9-12: 3 L 9-12;6	GCO 1, 2, 3, 4, 5, 6, 13 NQ 1,2,3	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Utilize appropriate sectional views.	NCS 4.2 TD 5	AC2 AC-DES 6	RST9-12: 3 RST9- 10;7 L 9-12;6	GCO 2, 5, 13 NQ 1, 2, 3	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Draw various threads and fasteners given the specifications for the thread or fasteners.	NCS 4	AC2 AC-DES 6	RST9-12: 3 RST9-	GCO 2, 3, 9	B1, 4	A2	Planning Mgmt	SkillsUSA TD Assessment

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	TD 8		10;7 L9-12;6	NQ 1, 2, 3			Technical Skills Technology	
Place auxiliary views appropriately in a working drawing.	NCS 2.0 TD 8	AC2 AC-DES 6	RST9-12: 3 L 9-12;6	GCO 1, 2, 6 NQ 1, 2, 3	B1, 4	A2	Planning Mgmt Finance Technical Skills Technology	SkillsUSA TD Assessment
Label a set of working drawing accurately.	NCS 4.2.10 TD 6,7	AC2 AC-DES 6	L 9 – 12; 2,6	GCO 1 SID 3 - 9	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Use accepted methods of titling a working set of drawings.	NCS 4.2 NCS 2.2 TD 11	AC2 AC-DES 6, 7	L 9 – 12; 2,6	GCO; 1, 2	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Display individual drawings in a working set of drawings in a fashion acceptable to industry standards.	NCS 2.0 TD 11	AC2 AC-DES 6	RST 9-12; 3 L9-12; 6	GCO 1 – 2, 5	B1, 4	A2	Planning Mgmt Technical Skills Technology	SkillsUSA TD Assessment
Determine the best method of data storage and use the storage method to save drawing data.	NCS 1.0	AC2 AC-DES 6	WHST9-12;6 L 9-12; 6		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 TD 1	AC2, 3 AC-DES 4, 6	WHST9-12; 8 L 9-12; 6		B1,3,	A 1, 2, 6	Wk Habits Mgmt.	Statement of Authenticity

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Identify careers related to design and drafting.	EAP 1, 2	AC 2, 3, 4, 5, 7	L 9-12; 2, 6 A&B	GCO; 1	C4	A3, 5 B2 - 5	Planning Labor Community Wk Habits	AKCIS PLCP
Encourage CTSO involvement	EAP 1.2	AC 1, 3, 4, 5, 7	L 11-12; 6	GCO; 1	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