

CTE Course Description and Standards Crosswalk

Course Information	
Course Name	Civil Engineering and Architecture (PLTW)
Course Number	86421
Number of High School Credits	1
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	
Date of district Course Revision	
Career & Technical Student Organization (CTSO)	
CTSO embedded in this sequence	
Occupational Standards	
Source of Occupational Standards	States Career Cluster Initiative; PLTW
Names/Numbers of Occupational Standards	
Registration Information	
Course Description (brief paragraph – as shown in your student handbook or course list)	Civil Engineering and Architecture provides an overview of the fields of civil engineering and architecture with an emphasis on the interrelationship and dependence of both fields on each other. Students use state of the art software to solve real world problems and communicate solutions to hands-on projects and activities. This course is part of the PLTW (Project Lead the Way) Pre-Engineering Program.
Instructional Topic Headings (please separate each heading by a semi-colon)	The Roles of Civil Engineers and Architects; Project Planning; Site Planning; Project Documentation and Presentation; Building Design
Summative Assessments and Standards	
Technical Skills Assessment (TSA)	
Course addresses:	
New Alaska ELA and Math Standards	
Alaska Cultural Standards	
All Aspects of Industry (AAI)	
Core Technical Standards	
Employability Standards	
Employability Standards	
Source of Employability Standards	
Tech Prep	
Current Tech Prep Articulation	

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Agreement? (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	
Course adapted from	
Date of previous course revision	
Course Delivery Model	
Is the course brokered through another institution or agency? (Y/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
Students will be able to compare and contrast civil engineering and architecture.	SCC01				B3,E4	A2,A5 B2,B4	Princ of Tech, Comm Issues	PLTW Assessments
Students will communicate ideas for designing a development project using various drawing methods, sketches, graphics, or other media collected and documented.	SCC02.01				B3,E2,	A1,A2	Princ of Tech, Comm Issues	PLTW Assessments
Students will communicate understandings of the relationship of structures and land and the responsibility of designers to handle resources in an ethical manner.	SCC02.01				A6,B3,E2	A1,A2	Princ of Tech, Comm Issues	PLTW Assessments
Students will mathematically compute utility needs of a project and size the utility supply lines correctly.	SCC03					A1,A2	Princ of Tech, Comm Issues	PLTW Assessments

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Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupation al Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standard s	Alaska Cultural Standards	Employabilit y/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Students will analyze and determine the selection and placement of plantings to ensure the proper use of resources and determine if landscaping adds aesthetic appeal.	SCC03				E2	A1,A2	Princ of Tech, Comm Issues	PLTW Assessmen ts
Students will research and design an appropriate energy system for the team's project.	SCC03				B3,B4	A1,A2	Princ of Tech, Comm Issues	PLTW Assessmen ts
Students will calculate and determine the heat loss or gain of the energy systems used in their team project.	SCC03				B4	A1,A2	Princ of Tech, Comm Issues	PLTW Assessmen ts
Students will identify and create the necessary schedules for their team's project.	SCC03					A1,A2	Princ of Tech, Comm Issues	PLTW Assessmen ts
Students will determine the live and dead loads of a structure using load tables and appropriate mathematics.	SCC03					A1,A2	Princ of Tech, Comm Issues	PLTW Assessmen ts
Students will size floor members according to loads and modify section details to show the sizing of supporting materials for their team's project.	SCC03					A1,A2	Princ of Tech, Comm Issues	PLTW Assessmen ts
Students will participate in CTSO classroom activities.	SCC07 SCC09				A7, B1- 2, E7	A1-4, B1		Portfolio

Instructional Resources

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

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High School Engineering

The Project Lead The Way (PLTW) Pathway To Engineering (PTE) curriculum is designed as a four-year high school sequence. Foundation courses (Introduction to Engineering Design, Principles of Engineering, and Digital Electronics) are supplemented by a number of electives to create eight rigorous, relevant, reality-based courses: