

Standards and Competencies for Civil Engineering and Architecture (PLTW) (Course # 5795)

	Begin-End Yr
Standard 1 - Students will create and print two- and three-dimensional scale drawings and orthographic projections using a CAD program.	2009 -
1.1 - Create and print two-dimensional scale plan drawings.	2009 -
1.2 - Create and print orthographic projections of three-dimensional objects.	2009 -
1.3 - Create and print drawings of three-dimensional objects including parallel extrusion, perspective extrusion, and three-dimensional isometrics.	2009 -
1.4 - Create and print engineering drawings of complex objects requiring multiple sectional views.	2009 -
Standard 2 - Students will apply dimensions and tolerances to components of a technical drawing to assure a working fit between	2009 -
2.1 - Determine the appropriate tolerances for each dimension in a drawing, including assembly, operational, and cost criteria for structures and mechanisms.	2009 -
2.2 - Include global tolerances in the drawing title block when appropriate.	2009 -
2.3 - Include explicit tolerances on a drawing's dimensions when appropriate.	2009 -
Standard 3 - Students will extract information from a technical drawing to create a bill of materials.	2009 -
3.1 - Identify the available form(s) of each raw material required for the assembly and make defensible recommendations.	2009 -
3.2 - Make a list of each type of raw material with all required specifications for an assembly.	2009 -
3.3 - Make a list and specifications for finished-goods components required of an assembly.	2009 -
3.4 - Identify allowable alternates or substitutions (if any) on the bill of materials.	2009 -
Standard 4 - Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and	2009 -
4.1 - Demonstrates dignity in work.	2009 -
4.2 - Participate in SkillsUSA as an integral part of classroom instruction.	2009 -
4.3 - Evaluate school, community, and workplace situations by applying problem-solving and decision-making skills.	2009 -
4.4 - Demonstrate the ability to work professionally with others.	2009 -
Standard 5 - Students will take personal responsibility for the safety of themselves, their co-workers, and bystanders.	2009 -
5.1 - Determine safe and correct procedures for working with computer equipment.	2009 -
5.2 - Follow Occupational Safety & Health Administration (OSHA), Environmental Protection Agency (EPA) regulations, and manufactures specifications according to the computer aided drafting industry.	2009 -
5.3 - Comprehend the importance of a safe work environment	2009 -
5.4 - Pass with 100 % accuracy a written examination relating specifically to the computer aided drafting industry.	2009 -
5.5 - Pass with 100% accuracy a performance examination relating specifically to the computer aided drafting industry.	2009 -
5.6 - Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.	2009 -