

Essential Standards Chart

Department: Tech. Ed.

Course: Students will choose either Applied Architectural or Applied Engineering Fundamentals to study within course

Teacher: Brickl

Essential Standard Description	Example Rigor	Prerequisite Skills	Common Assessment	When Taught?	Extension Standards
<i>What are the essential standards to be learned? Describe in student-friendly language.</i>	<i>What does proficient student work look like? Provide an example and/or description.</i>	<i>What prior knowledge, skills, and/or vocabulary is/are needed for a student to master this standard?</i>	<i>What assessment(s) will be used to measure student mastery?</i>	<i>When will this essential standard be taught? unit/topic/book</i>	<i>What will we do when students have learned the essential standard(s)?</i>
Students will be able to measure precisely with a ruler/tape measure to the nearest 1/16"	Students can accurately read a ruler/tape measure and use one to measure parts to the nearest 1/16"	Ruler, tape measure, math (fractional inches and addition)	Measurement lab, Measurement worksheet and Measurement quiz	Unit 1 (Applied Arch) (Applied IEF)	Students will learn how to measure to the nearest 1/32"
Students can recognize personal and construction safety equipment and setups	-Students are properly dressed for class -Students are operating equipment safely to reduce personal injuries	-Safety Equipment demonstrations	-Students have to pass a demonstration (they demonstrate of to properly and safely use the tools and equipment)	Unit 2 (Applied IEF)	Students can use the tools and equipment
Students will create a series of 3D CAD parts (Inventor)	-Students can replicate a 3 view drawing into a 3D part	-Views of an object -Basic drawing skills within Inventor -Order of operations in drawing	-Students will draw a complex part that initials a minimum of 4 complex features (Sketches)	Unit 3 (Applied IEF)	Students will draw up a part within the Mechanical Drafting book, create sheet layouts and apply basic dimensioning concepts

Students will create sub assembly parts using 3D CAD Software (Inventor)	-Students can create a series of individual parts that produce a final product once fully assembled.	-Drawing skills from inventor -Assembly constraints	Students will create a final part that is composed of at least 4 individual interlocking parts	Unit 4 (Applied IEF)	Create a sub assembly of individual parts that create a final project
Students will generate G Code using CAD CAM Software (Inventor)	-Students can design a part and generate the G Code to run on the CNC Haas	-Create a tool path using CAD CAM software -Setup of the Haas Equipment	Students will create a G Code path on a CAD drawing	Unit 5 (Applied IEF)	Students will create a Marble maze project which they can produce G Code for the path and cut out using the CNC Haas
Students will design, develop and fabricate an object that helps solves a problem	-Students will come up with an individual problem or project in which a solution as to analyzed, developed and fabricated through the use equipment within our Technology and Engineering shops	-Inventor -12 Step Design Process -Measurement -Specific equipment related to the problem they are solving	-Documentation of the student shows the 12 step design process and how they applied these to the project they are creating.	Unit 6 (Applied IEF)	Students will create a project of their choose that is within the following areas such as: Reverse Engineering, G Code Development for Haas Machine, 3D Printing, or a project approved by the instructor.
Students will analyze concepts related to site development	-Students will study a series of topographic maps and understand the contour line markings	-Primary consideration activity -Topographic mapping	-Identifying lines on a contour maps -Identifying how a placement of a structure can affect the of the contours -Identifying how the contour lines can affect the design of the structure	Unit 2 (Applied Architectural)	Students will place a structure on a contour map and redesign the contour lines based on the effects that the structure has on the map.
Students will create an interior design for a residential structure.	-Students can analyze current trends and apply these concepts to a design of their choice	-Interior Residential design -Current residential trends	-Research on trend or current them -Readings on interior design	Unit 3	Students will create a storyboard for a residential structure that represents a theme or current trend being used in current industry practice.

Students will create a working set of drawings (Blueprints) for a residential or commercial structure	-Students can develop all correspond floor plans and elevations to a building structure that meets the demand of a specific client	-Residential room orientation and sizes -CAD design software (Revit / AutoCAD) -Blueprints	-Evaluation from the client in whom they design the structure for -Creation of corresponding blue prints (Foundation, First Floor (Etc...), and Elevations)	Unit 4	Students will interview a client and design a structure (Residential or Commercial) that meets the needs of the client and also meets the demands the building site presents to them.
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