I: TSA/STEAM Architectural Design Competition

Content Area: **Generic Content Area**
Course(s): **Generic Course, Level 1 Engineering Drawing**
Time Period: **Generic Time Period**
Length: **3 weeks**
Status: **Published**

Unit Introduction

In this unit, students or Teams of students will incorporate Architectural Design/all aspects of their learning/skills and Engineering Design process to develop plans, models and/or presentations for project competitions that involve redesign/problem solving, research, planning, teamwork, etc.…as required by the competition host: TSA, STEAM or other.

Standards

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.
9.3.12.AC-MO.4	Determine work required to repair or renovate an existing building.
12.9.3.ST.2	Use technology to acquire, manipulate, analyze and report data.
12.9.3.ST.6	Demonstrate technical skills needed in a chosen STEM field.
12.9.3.ST-ET.3	Apply processes and concepts for the use of technological tools in STEM.
12.9.3.ST-ET.4	Apply the elements of the design process.
12.9.3.ST-ET.5	Apply the knowledge learned in STEM to solve problems.
12.9.3.ST-SM.2	Apply science and mathematics concepts to the development of plans, processes and projects that address real world problems.

Essential Questions

1. How does the world/societies/cultures/environments impact/influence Architecture past, present and future?

2. What is the role the "Design Process" in good Architecture?

3. In what ways can participation in a student design competition nfluence you decision to become an Architect?

Content / Skills

Textbooks:

Basic Technical Drawing - Spencer, Dygdon, Novak, 8th edition, 2004

Engineering Drawing & Design - D.A. Madsen, D.P. Madsen, 6th edition, 2017

Architecturl Drafting & Design – A. Jefferis,D.A. Madsen, D.P. Madsen, 7th edition, 2017

Skills: See Below

• Layout	.
• Plotting Drawings to Scale	.
• math operations	.
• measurement	.
• mechanical drawing	.
• safety	.
• sketching	.
• teamwork	.
• using CAD	.
• visualization	.