

Template

Content Area: **21st Century Life & Careers**
Course(s): **Generic Course, Level 1 Engineering Drawing**
Time Period: **Marking Period 1**
Length: **6-8 Weeks**
Status: **Published**

Unit Introduction

Standards

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| 9.3.12.AC.1 | Use vocabulary, symbols and formulas common to architecture and construction. |
| 9.3.12.AC.6 | Read, interpret and use technical drawings, documents and specifications to plan a 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.6 | Apply the techniques and skills of modern drafting, design, engineering and construction to projects. |
| ARCH.9-12.9.4.12.B.(1).1 | Demonstrate communication skills and strategies that are used to work effectively with potential clients and others. |
| ARCH.9-12.9.4.12.B.(1).9 | Develop technical drawings drafted by hand and computer-generated plans to design structures. |
| ARCH.9-12.9.4.12.B.(1).10 | Demonstrate understanding of principles, conventions, standards, applications, and restrictions pertaining to the manufacture and use of construction materials, components, and assemblies, and incorporate this understanding into project design. |
| ARCH.9-12.9.4.12.B.(1).11 | Apply basic organizational, spatial, structural, and constructional principles to the design of interior and exterior space so that design plans are effective. |
| ARCH.9-12.9.4.12.B.2 | Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities. |
| ARCH.9-12.9.4.12.B.7 | Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication. |
| ARCH.9-12.9.4.12.B.13 | Apply active listening skills to obtain and clarify information. |
| ARCH.9-12.9.4.12.B.17 | Use vocabulary and visual cues commonly used in design and construction to communicate successfully. |
| ARCH.9-12.9.4.12.B.18 | Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions. |
| ARCH.9-12.9.4.12.B.22 | Create and implement project plans to accomplish realistic planning in design and construction situations, considering available resources and requirements of a project/problem. |
| ARCH.9-12.9.4.12.B.26 | Operate Internet applications to perform tasks. |
| ARCH.9-12.9.4.12.B.61 | Demonstrate skills related to seeking and applying for employment in a desired job. |
| ARCH.9-12.9.4.12.B.62 | Maintain a career portfolio to document knowledge, skills, and experience in a career field. |
| ARCH.9-12.9.4.12.B.74 | Read, interpret, and use technical drawings, documents, and specifications to plan a |

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| | project. |
| STEM.9-12.9.4.12.O.(1).1 | Apply the concepts, processes, guiding principles, and standards of school mathematics to solve science, technology, engineering, and mathematics problems. |
| STEM.9-12.9.4.12.O.(1).9 | Employ concepts and processes for the application of technology to engineering. |
| STEM.9-12.9.4.12.O.2 | Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities. |
| STEM.9-12.9.4.12.O.30 | Employ computer operations applications to manage tasks. |
| STEM.9-12.9.4.12.O.48 | Employ teamwork skills to achieve collective goals and use team members' talents effectively. |
| STEM.9-12.9.4.12.O.51 | Employ mentoring skills to assist others. |
| STEM.9-12.9.4.12.O.58 | Maintain a career portfolio to document knowledge, skills, and experience in a career field. |

Essential Questions

Content / Skills

Textbooks:

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

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

Skills: See Below

- brainstorming/modelstorming
- craftmanship
- design process
- dimensioning
- drawing pictorials/3D
- Interpreting Orthographic views
- Layout
- math operations
- measurement
- mechanical drawing
- Plotting Drawings to Scale
- safety
- sectioning
- teamwork

- using CAD
- visualization