

# Course of Study TEMPLATE (Revision and Pilot)

This Course is a REVISION - PILOT (Highlight One)

## Basic Course Information

Sites offering this Course	Course Learning Environment (classroom-based or online)	Transcript Course Code(s) [For Office Use Only]	Course Name Short Title [For Office Use Only]
CHS, MDHS	Classroom		

Course Title	Construction 1
Length of Course	Year
Subject Area (a-g)	G
Credits Per Semester	5
UC Honors Designation (y/n)	N
Required or Elective	Elective
Prerequisites (required or recommended)	None
Co-requisites (required or recommended)	None
Integrated (Academics/CTE?)	CTE
Grade Levels	9-12
Board of Education Adoption	

## Course Description

Course Overview
Construction One will be an overview of the construction trades. Since modern systems and

technology serve to move the industry into the next generation, students will be exposed to the vocabulary and processes involved in construction technology, engineering, and architectural design. Students will engage with a hands-on, project-based approach to content focused on learning basic computer-aided design (CAD), hand and machinery tool use and safety, basic building systems, building codes, and regulations. Students master measurement systems with integrated geometry content, calculation, and characteristics of materials, basic carpentry, and framing. Students will learn scale modeling, sketching, and basic blueprint creation/reading. Students will learn about construction careers. Students will demonstrate responsibility for personal, occupational safety on the job site and will obtain OSHA10 certification.

## Course Content

Unit 1 Title
<b>Safety is Job One</b>
Unit 1 Description
Introduction to Safety and Materials Handling
Unit 1 Topics Covered and Assignment Description
<ul style="list-style-type: none"> <li>• Students will be introduced to the work environment including the computer lab, shop, and yard.</li> <li>• Students will complete the industry-standard OSHA 10 certification. This is a 10-hour online course covering basic construction safety.</li> </ul>

Unit 2 Title
<b>Make it Count</b>
Unit 2 Description
Rulers, tape measures, calipers, and calculators will be the tools learned to understand and practice Measurement and Take-off
Unit 2 Topics Covered and Assignment Description
<ul style="list-style-type: none"> <li>• Students will learn to read rulers, tape measures and other measuring devices.</li> </ul>

- Students will apply knowledge of measuring devices to develop independent projects.
- Students will use various measuring devices to evaluate actual versus design elements.
- Students will create scale measuring tools using design software and CNC equipment.
- Students will learn the safe use of the drill press and disk sander to create an item to meet the project criteria.
- Students will evaluate the project using the tools presented.

Unit 3 Title

**CAD and Print Reading**

Unit 3 Description

Learning to Read and Create blueprints

Unit 3 Topics Covered and Assignment Description

- Students will learn the fundamentals and conventions of blueprints.
- Students will apply their knowledge of measuring and scales to blue prints to develop calculations for area, volume, and length.
- Students will create a design for a Tiny House and develop estimating take-offs.

Unit 4 Title

**Hand and Power Tools**

Unit 4 Description

Safe and appropriate use of hand and power tools

Unit 4 Topics Covered and Assignment Description

- Students will demonstrate appropriate and safe use of stationary and hand power tools and be tested on each.
- Students will be introduced to hand and power tools throughout the course to complete unit-specific projects.

Unit 5 Title

**Fundamentals of Building Systems and Materials**

Unit 5 Description
Building systems and putting them all together
Unit 5 Topics Covered and Assignment Description
<ul style="list-style-type: none"> <li>● Students will learn the safe use of the table saw, planer, and miter saw to create an item to meet the project criteria.</li> <li>● Students will evaluate the project using the tools learned.</li> <li>● Students will mill scale building materials using table saws, planers, and miter saws</li> <li>● Students will build a scale model of their Tiny House design from Unit 3</li> </ul>

Unit 6 Title
<b>Phases and Cost of Construction</b>
Unit 6 Description
Understanding the order, phases, and costs of construction and the relationship of each component.
Unit 6 Topics Covered and Assignment Description
<ul style="list-style-type: none"> <li>● Critical Path Method (CPM) scheduling will be presented and practiced.</li> <li>● Students will apply their understanding of building systems and materials to their new CPM skills</li> <li>● Students will develop a construction schedule for their Tiny House project.</li> <li>● Students will use their CPM schedule and Take-Offs to develop a Project Budget for their Tiny House project.</li> </ul>

Unit 7 Title
<b>Construction Industry Knowledge and Career Exploration</b>
Unit 7 Description
A look at current trends and future projections of the construction industry

### Unit 7 Topics Covered and Assignment Description

- Students will research and report on local, state and national trends in the Built environment.
- Local trade and labor organizations will present opportunities and areas of exploration.
- Students will engage with Naviance

## Course Materials

Please duplicate the table below if you have more than one text for the course.

Title	Core Curriculum: Introductory Craft Skills
Author	Staton, Troy
Publisher	Pearson Education, Inc.
Edition	2015
Website	None
Primary (y/n)	Yes

### Websites Used

Title	
Author(s), Editor(s), Compiler(s)	
Affiliated Institution or Organization	
URL	

## Signatures

Name	Signature	Role/Site
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		Director of Secondary Education
Rianne Pfaltzgraff		Principal
		Department Chair/Program Coordinator
Tom Trowbridge		Teacher
Ray Hotham		Teacher
		Teacher

Please Note: Team must include teachers from various sites.