



Western Technical College

## 10410103 Construction Industry Basics

### Course Outcome Summary

#### Course Information

<b>Description</b>	This course provides an overview of the professions found within the construction industry. Students will research skills necessary for success within their chosen field and correlate them to their personal strengths. Students will also learn to interpret architectural construction documents and be introduced to the assemblies that make up a building. An exploration of building science principles will provide a foundation for future coursework.
<b>Career Cluster</b>	Architecture and Construction
<b>Instructional Level</b>	Associate Degree Courses
<b>Total Credits</b>	2
<b>Total Hours</b>	54

#### Textbooks

No textbook required.

#### Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Live Responsibly: Embrace Sustainability
3. Refine Professionalism: Participate Collaboratively

#### Course Competencies

1. **Determine the skills necessary for your future occupation in the design-construction process.**  
Criteria

*You will know you are successful when*

- 1.1. You describe industry professionals involved in the design to construction process.
- 1.2. You correlate your goals and skills to industry professionals.
- 1.3. You identify 2-3 goals for your professional future.

#### **Learning Objectives**

- 1.a. Investigate the industry professionals involved in the design to construction process.
- 1.b. Identify skills necessary to be successful in each of these professions.
- 1.c. Correlate your Strengths to the attributes of your future industry profession.
- 1.d. Develop a career plan.

## **2. Investigate construction documents for trade information.**

#### **Assessment Strategies**

- 2.1. Written Product

#### **Criteria**

*You will know you are successful when*

- 2.1. You use resources to find building codes and standards
- 2.2. You locate and identify scale on a construction drawing
- 2.3. You identify different types of construction drawings
- 2.4. You identify and interpret symbols and abbreviations found on construction drawings

#### **Learning Objectives**

- 2.a. Locate and explore building codes and standards
- 2.b. Correlate drawing scale to actual dimensions.
- 2.c. Differentiate the function of drawings found in construction documents.
- 2.d. Identify material symbols used on construction drawings.
- 2.e. Examine the CSI master format and relate keynote symbols on a plan to the appropriate specification section
- 2.f. Recognize common abbreviations found on construction documents

## **3. Identify common construction assemblies and their components.**

#### **Criteria**

*You will know you are successful when*

- 3.1. You identify basic construction assemblies
- 3.2. You identify the components of various construction assemblies
- 3.3. You identify materials of basic construction assemblies

#### **Learning Objectives**

- 3.a. Examine components of foundation and footing assemblies
- 3.b. Examine components of floor assemblies
- 3.c. Examine components of wall assemblies
- 3.d. Examine components of roof assemblies.

## **4. Explore HVAC-R, electrical, and plumbing systems used in residential and light commercial buildings**

#### **Criteria**

*You will know you are successful when*

- 4.1. You find mechanical and electrical details on construction documents
- 4.2. You build an electrical circuit
- 4.3. You identify HVAC systems
- 4.4. You find and operate shut-off valves

#### **Learning Objectives**

- 4.a. Identify HVAC-R, electrical and plumbing symbols on construction documents
- 4.b. Assemble electrical circuits
- 4.c. Investigate common HVAC systems and their operation
- 4.d. Investigate basic plumbing concepts and functions

## **5. Apply basic concepts of building science**

### **Criteria**

*You will know you are successful when*

- 5.1. You identify the building envelope
- 5.2. You explain condensation as it relates to the building envelope
- 5.3. You operate a blower door system
- 5.4. You assess a site for photovoltaic potential
- 5.5. You define sustainability
- 5.6. You define climate change

### **Learning Objectives**

- 5.a. Recognize how buildings operate as a system
- 5.b. Investigate how moisture, pressure and thermal properties interact with building assemblies
- 5.c. Operate a blower door system
- 5.d. Conduct a solar pathfinder analysis
- 5.e. Explain sustainability as it applies to climate change