



Western Technical College

31410360 Commercial Systems

Course Outcome Summary

Course Information

Description	In this course, students will study the materials and methods used for construction of a metal stud framed wall, hollow metal door frame installation, kick-down door frame installation, hollow metal window frame installation, and acoustical ceiling installation.
Career Cluster	Architecture and Construction
Instructional Level	Technical Diploma Courses
Total Credits	1
Total Hours	36

Pre/Corequisites

Prerequisite 31410333 Framing Techniques

Textbooks

Carpentry and Building Construction (Student Edition). Copyright 2016. McGraw-Hill Education. Publisher: McGraw-Hill Publishing Company. **ISBN-13:** 978-0-02-140244-1. Required.

Learner Supplies

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

Tools: Tool belt, 25' - 1" tape measure, 16 or 20 oz. hammer, speed square, chalk line, utility knife, wood chisels (1/4, 1/2, 3/4, 1"). **Vendor:** To be discussed in class. Required.

Proper work boots - \$35.00-75.00. **Vendor:** To be discussed in class. Required.

Scientific Calculator - \$20. **Vendor:** Campus Shop. Required.

Success Abilities

1. Cultivate Passion: Increase Self-Awareness
2. Refine Professionalism: Participate Collaboratively
3. Refine Professionalism: Practice Effective Communication

Program Outcomes

1. Use hand and power tools and equipment
2. Apply industry recognized safety practices and procedures
3. Interpret construction drawings
4. Demonstrate industry building practices and material application

Course Competencies

1. Identify the framing members and tools used in metal stud framing.

Assessment Strategies

- 1.1. Written Objective Test

Criteria

You will know you are successful when:

- 1.1. you will correctly identify tools shown on an illustration.
- 1.2. you will indicate the proper tools needed to perform an operation.
- 1.3. you will correctly label framing members shown on an illustration.
- 1.4. you will pass a written exam with a minimum score of 70%.

Learning Objectives

- 1.a. Identify tools to include electric shears, chop saw with abrasive blade, hand seamers, aviation snips, crimping tool, and hole punch.
- 1.b. Identify metal framed wall components to include tracks, studs, box header, backing, low-profile screws, self-piercing screws, and self tapping screws,

2. Construct a metal stud framed wall

Assessment Strategies

- 2.1. Skill Demonstration

Criteria

You will know you are successful when:

- 2.1. you locate the position of the wall within a structure as indicated on the plan.
- 2.2. you cut the top and bottom track to the correct dimension and fasten them to the structure.
- 2.3. you install metal studs within the top and bottom track 16" on center.
- 2.4. you install backing for wall hanging fixtures at the correct locations.
- 2.5. you utilize proper cutting techniques, fasteners, and fastening techniques to install metal tracks and studs.

Learning Objectives

- 2.a. Locate the position of a wall within a structure.
- 2.b. Install top and bottom tracks.
- 2.c. Install metal studs.

- 2.d. Install backing for wall hanging fixtures.
- 2.e. Use proper cutting techniques, fasteners, and fastening techniques to construct a metal stud wall.

3. Install a hollow metal window frame.

Assessment Strategies

- 3.1. Skill Demonstration
- 3.2. Critique

Criteria

You will know you are successful when:

- 3.1. you install king studs, sill, header, and cripple studs utilizing proper fasteners and installation techniques to create a rough opening for a window frame in a metal stud framed wall.
- 3.2. you fasten the window frame in the rough opening plumb, level, and square properly utilizing installation brackets and appropriate fasteners.
- 3.3. you fasten the window frame in the rough opening to accept the installation of 5/8" drywall on both sides.
- 3.4. you evaluate the finished product.

Learning Objectives

- 3.a. Construct a rough opening in a metal stud wall to receive a window frame.
- 3.b. Fasten a hollow metal window frame within a rough opening.

4. Install a hollow metal door frame.

Assessment Strategies

- 4.1. Skill Demonstration
- 4.2. Critique

Criteria

You will know you are successful when:

- 4.1. you position the door frame in the correct location as indicated on the plan.
- 4.2. you fasten the door frame to the floor plumb, level, and square, centered in the thickness of the wall utilizing proper fasteners and fastening techniques.
- 4.3. you install king studs, header, and cripple studs around the door frame utilizing proper installation brackets and fasteners to allow for the installation of 5/8" drywall on both sides of the frame.
- 4.4. you evaluate the finished product.

Learning Objectives

- 4.a. Install a hollow metal door frame at the correct location within a wall.
- 4.b. Frame a wall around an installed hollow metal door frame.

5. Install a knock-down door frame.

Assessment Strategies

- 5.1. Skill Demonstration
- 5.2. Critique

Criteria

You will know you are successful when:

- 5.1. you utilize proper metal stud framing techniques to frame a rough opening for a knock-down door frame.
- 5.2. you fasten drywall to metal stud wall utilizing proper tools, fasteners, and fastening techniques.
- 5.3. you install a knock-down metal door frame within a framed rough opening plumb, level, and square utilizing proper fasteners and fastening techniques, in accordance with the manufacturers' specifications.
- 5.4. you evaluate the finished product.

Learning Objectives

- 5.a. Frame a rough opening in a metal stud framed wall to accept a knock-down door frame.
- 5.b. Install 5/8" drywall to a metal stud framed wall.
- 5.c. Install a knock-down metal door frame.

6. Install drywall.

Assessment Strategies

- 6.1. Skill Demonstration

Criteria

You will know you are successful when:

- 6.1. you select the correct fasteners for the installation drywall to a metal and wood framed wall.
- 6.2. you measure and cut drywall to proper dimensions utilizing proper tools and cutting techniques.
- 6.3. you install drywall on a metal framed wall maintaining proper screw setting techniques to ensure the integrity of the connection.
- 6.4. you install drywall on a wood framed wall maintaining proper screw setting techniques to ensure the integrity of the connection.
- 6.5. you utilize a drywall screw gun effectively.
- 6.6. you produce a finished product without defect.

Learning Objectives

- 6.a. Cut drywall.
- 6.b. Install drywall on a wood framed wall.
- 6.c. Install drywall on a metal framed wall.

7. Identify the components used to construct an acoustical ceiling.

Assessment Strategies

- 7.1. Written Objective Test

Criteria

You will know you are successful when:

- 7.1. you correctly label the grid-work components of an acoustical ceiling illustrated on a reflected ceiling plan.
- 7.2. you correctly labels recessed tile, border tile, lights, and air diffusers illustrated on a reflected ceiling plan.
- 7.3. you pass a witten exam with a minimum score of 70%.

Learning Objectives

- 7.a. Identify acoustical ceiling grid-work to include wall angle, main runners, 2' tees, and 4' tees.
- 7.b. Identify recessed ceiling tiles and border tiles.
- 7.c. Interpret a reflective ceiling plan.

8. Install an acoustical ceiling.

Assessment Strategies

- 8.1. Skill Demonstration
- 8.2. Critique

Criteria

You will know you are successful when:

- 8.1. you establish the ceiling height at the correct dimension off the floor.
- 8.2. you correctly install wall angle, main runners, and tees in the proper position as indicated on the reflected cieling plan.
- 8.3. you correctly cut, rabbet, and install border tiles.
- 8.4. you install field tiles where indicated on the reflective ceiling plan citing the location of mechanical and electrical fixtures.
- 8.5. you evaluate the finished product.

Learning Objectives

- 8.a. Locate the ceiling at the proper height off the floor as indicated on the plan.
- 8.b. Install wall angle, main runners, and tees.
- 8.c. Install border and field tiles.