

Introduction to Construction

Course Outcome Summary

Course Information

Organization	Madison Area Technical College
Developers	Allie Berenyi
Development Date	5/23/2005
Course Number	31-410-301
Instructional Level	One-Year Technical Diploma
Potential Hours of Instruction	360
Total Credits	5

Description

This course provides instruction in the following areas: fundamentals of floor, wall, ceiling and roof framing.

Types of Instruction

Instruction Type	Contact Hours	Credits
Classroom Presentation	72	5
On-Campus Lab	144	
Actual Work Experience	144	

Textbooks

Feirer and Feirer. *Carpentry and Building Construction*. Glencoe. **Edition:** 5. **Source:** MATC Bookstore.

Learner Supplies

Safety Glasses. **Quantity:** 1. **Price:** \$5.

Basic Hand Tools. **Price:** \$100.

Hard hat. **Price:** \$10.

Prerequisites

Corequisite: Fundamentals of Construction (31-410-399)

Corequisite: Plans, Site and Formwork (31-410-301)

Exit Learning Outcomes

Core Abilities

- A. Mathematics
- B. Social interaction
- C. Critical thinking

Competencies

A. Build a product from given plans

You will demonstrate your competence:

A.1. by building a sawhorse

Your performance will be successful when:

A.1. you follow proper safety procedures

A.2. sawhorse is of the correct dimensions

A.3. sawhorse is made of specified and structurally sound lumber

A.4. sawhorse sits with all four feet on a flat floor

A.5. sawhorse is assembled with specified, countersunk fasteners

A.6. sawhorse is made of cleanly cut lumber

A.7. sawhorse edges are eased

B. Select lumber appropriate to application

You will demonstrate your competence:

B.1. by taking a written exam

Your performance will be successful when:

B.1. you explain how trees are milled into lumber

B.2. you identify woods commonly used in construction

B.3. you identify common defects in lumber

B.4. you select the appropriate lumber for given scenarios

B.5. you explain conditions that are damaging to wood

C. Interpret building plans

You will demonstrate your competence:

C.1. by completing a written assignment

Your performance will be successful when:

C.1. you identify blueprint symbols

C.2. you interpret schedules and notes from the plan

C.3. you determine measurements from the plan

C.4. you identify features based on line weights and line types

D. Explain house framing methods

You will demonstrate your competence:

D.1. by taking a written exam

Your performance will be successful when:

D.1. you identify different framing methods

D.2. you explain on-center spacing

D.3. you explain the effects of loads and forces on homes

D.4. you compare the pros and cons of different framing method

E. Demolish structures as per plans and/or instructor direction

You will demonstrate your competence:

E.1. by participating in a demolish project

Your performance will be successful when:

E.1. you install site protection to limit damage and dust migration

E.2. you follow proper safety procedures

E.3. you turn off plumbing, electrical and heating that may be impacted by your work

E.4. you remove wall coverings using prybars, flatbars, crowbars, hammers and

Sawzalls

E.5. you take precautions so as not to damage hidden plumbing, electrical and heating equipment

E.6. you keep your work area clean and free of hazards

E.7. you install shoring walls as needed

E.8. you remove structural elements as per building plans

E.9. you identify and remove rotten building elements

F. Install a girder or beam and posting

You will demonstrate your competence:

F.1. by participating in the installation of a girder, beam and posting

F.2. by taking a written exam

Your performance will be successful when:

F.1. you follow proper safety procedures

F.2. girder, beam and posting are cut to the correct length

F.3. girder, beam and posting are installed in correct location

F.4. girder, beam and posting are nailed as per applicable codes and specifications

G. Construct a floor frame

You will demonstrate your competence:

G.1. by taking a written exam

G.2. by participating in the construction of a floor frame

G.3. by replacing floor frame members as per plan or instructor's direction

Your performance will be successful when:

G.1. you identify members of a floor frame

G.2. you follow proper safety procedures

G.3. mudsills are installed as per plans and applicable codes

G.4. rim boards and floor joists are installed as per plans and applicable codes

G.5. floor sheathing is installed as per plans and applicable codes

H. Frame exterior walls with window and door openings

You will demonstrate your competence:

H.1. by taking a written exam

H.2. by framing an exterior wall

Your performance will be successful when:

H.1. you identify framing members in an exterior wall

H.2. you follow proper safety procedures

H.3. exterior wall is constructed as per plans and applicable codes

H.4. wall is square

H.5. wall is in correct place

H.6. wall is plumb

H.7. wall is properly braced

I. Sheath building

You will demonstrate your competence:

I.1. by taking a written exam

I.2. by installing exterior sheathing

Your performance will be successful when:

- I.1. you explain the structural role of exterior sheathing
- I.2. you describe how to install exterior sheathing
- I.3. you follow proper safety procedures
- I.4. exterior sheathing is installed as per plans, applicable codes and instructor's directions

J. Frame interior walls

You will demonstrate your competence:

- J.1. by taking a written exam
- J.2. by framing interior walls

Your performance will be successful when:

- J.1. you explain how to lay out interior walls
- J.2. you follow proper safety procedures
- J.3. interior walls are framed as per plans and applicable codes
- J.4. interior walls are located in the correct positions
- J.5. interior walls are square
- J.6. interior walls are plumb

K. Install roof trusses and bracing

You will demonstrate your competence:

- K.1. by taking a written exam
- K.2. by installing roof trusses

Your performance will be successful when:

- K.1. you explain the pros and cons of constructing roofs with trusses
- K.2. you explain the movement of forces in a roof truss
- K.3. you follow proper safety procedures
- K.4. you interpret truss plans
- K.5. roof trusses are installed as per truss plans, building plans, and applicable codes
- K.6. roof trusses are braced as per truss plans and applicable building codes

L. Install roof sheathing

You will demonstrate your competence:

- L.1. by taking a written exam
- L.2. by sheathing a roof

Your performance will be successful when:

- L.1. you explain the structural role of roof sheathing
- L.2. you describe how to install roof sheathing
- L.3. you follow proper safety procedures
- L.4. roof sheathing is installed as per plans, applicable codes and instructor directions
- L.5. roof is protected from rain