

Plans, Sitework and Formwork

Course Outcome Summary

Course Information

Organization	Madison Area Technical College
Developers	Allie Berenyi
Development Date	7/18/2005
Course Number	31-410-302
Instructional Level	One-Year Technical Diploma
Potential Hours of Instruction	72
Total Credits	2

Description

This course introduces students to architectural building plans and how they are used in locating a building on a lot. The learners will lay out a building site using the transit level, tape measures, and marking tools. Students will also construct footing and foundation wall forms and learn about the uses and characteristics of concrete as it is used in residential construction.

Types of Instruction

Instruction Type	Contact Hours	Credits
Classroom Presentation	18	2
Simulated Work Experience	54	

Textbooks

Feirer & Feirer. *Carpentry and Building Construction*. Glencoe-McGraw Hill. 2004. **Edition:** 6th. **Pages:** 992. **ISBN:** 0-07-822702-X. **Source:** MATC Bookstore.

Prerequisites

Corequisite: 31-410-301 Introduction to Construction
Corequisite: 31-410-399 Fundamentals of Construction

Exit Learning Outcomes

Core Abilities

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

Competencies

- A. **Interpret building plans**
 - You will demonstrate your competence:**
 - A.1. by completing a written assignment
 - A.2. by taking a written exam
 - Your performance will be successful when:**

- A.1. you identify symbols
- A.2. you identify abbreviations
- A.3. you read measurements from given plan
- A.4. you scale measurements from given plan
- A.5. you identify features based on line weights
- A.6. you identify features based on line types

B. Use a builder's level and transit

You will demonstrate your competence:

- B.1. by taking a written exam
- B.2. by using the builder's level and transit

Your performance will be successful when:

- B.1. you identify the parts of a builder's level or transit
- B.2. you set up the building level or transit correctly
- B.3. you use the transit to get relative elevation readings
- B.4. you calculate actual elevations relative to a benchmark

C. Lay out building lines

You will demonstrate your competence:

- C.1. by taking a written exam
- C.2. by laying out a building site from given plans

Your performance will be successful when:

- C.1. you follow safety procedures
- C.2. you use the correct tools
- C.3. you locate lot corner stakes
- C.4. building lines are at the correct setback
- C.5. building lines are the correct length
- C.6. building lines are square
- C.7. batter boards are at least four feet from building lines
- C.8. batter boards are level with one another
- C.9. batter boards are set to the same height as the top of the foundation wall

D. Summarize uses of concrete in residential construction

You will demonstrate your competence:

- D.1. by taking a written exam

Your performance will be successful when:

- D.1. you summarize the applications of concrete in residential construction
- D.2. you identify the ingredients in concrete
- D.3. you summarize the uses of different types of concrete
- D.4. you summarize the use of admixtures to change the properties of concrete

E. Estimate concrete for a residential application

You will demonstrate your competence:

- E.1. by completing a written assignment
- E.2. by taking a written exam

Your performance will be successful when:

- E.1. you identify elements to be made of concrete from given plans
- E.2. you determine dimensions of concrete elements

- E.3. you calculate the volume of concrete elements
- E.4. you write a bill of the materials for concrete elements
- E.5. you use appropriate units in the bill of materials

F. Lay out footings

You will demonstrate your competence:

- F.1. by laying out footings

Your performance will be successful when:

- F.1. you re-establish building lines on the batter boards
- F.2. you confirm that batter boards are at the correct elevation
- F.3. you drop building lines into the excavation
- F.4. you establish building lines in the floor of the excavation
- F.5. you determine the elevation in the floor of the excavation
- F.6. you establish footing lines

G. Build footing forms

You will demonstrate your competence:

- G.1. by building footing forms

Your performance will be successful when:

- G.1. forms are correctly located
- G.2. forms are correct dimensions
- G.3. forms are level
- G.4. forms are at the correct elevation
- G.5. forms are adequately braced
- G.6. reinforcing bars are correctly located
- G.7. forms are oiled

H. Pour footings

You will demonstrate your competence:

- H.1. by pouring footings

Your performance will be successful when:

- H.1. concrete is thoroughly mixed
- H.2. concrete has acceptable slump
- H.3. you place the concrete
- H.4. you vibrate the concrete
- H.5. the keyway is centered in the footing
- H.6. top of the footing is finished

I. Layout foundation walls

You will demonstrate your competence:

- I.1. by laying out foundation walls

Your performance will be successful when:

- I.1. you check the footing for level
- I.2. you check the footing for correct elevation
- I.3. you re-establish building lines on the batter boards
- I.4. you drop building lines down to the footing
- I.5. layout lines are chalked onto the footing
- I.6. layout lines are the correct dimensions

I.7. layout lines are square

J. Erect manufactured foundation forms

You will demonstrate your competence:

J.1. by erecting manufactured forms

Your performance will be successful when:

J.1. foundation wall forms are erected on building lines

J.2. foundation wall forms are correctly latched

J.3. foundation wall forms are plumb

J.4. foundation wall forms are spaced for correct wall thickness

J.5. foundation wall forms are level

J.6. foundation wall forms are adequately braced

J.7. foundation wall forms indicate final elevation of foundation wall

K. Pour a concrete pier

You will demonstrate your competence:

K.1. by pouring a concrete pier

Your performance will be successful when:

K.1. pier is plumb

K.2. pier is correct elevation

K.3. pier is correct dimensions

L. Pour a section of sidewalk

You will demonstrate your competence:

L.1. by pouring a section of sidewalk

Your performance will be successful when:

L.1. sidewalk is correct size

L.2. sidewalk is correct thickness

L.3. sidewalk is level

L.4. sidewalk is finished with a non-slip surface