

ATCM-1401: CONCRETE FORMING AND FINISHING BASIC

Cuyahoga Community College

Viewing: ATCM-1401 : Concrete Forming and Finishing Basic

Board of Trustees:

October 2020

Academic Term:

Fall 2021

Subject Code

ATCM - Appd Indus Tech-Cement Masonry

Course Number:

1401

Title:

Concrete Forming and Finishing Basic

Catalog Description:

Study of various types of forms, placement of forms, placing leveling and finishing of concrete.

Credit Hour(s):

2

Lecture Hour(s):

2

Lab Hour(s):

0

Requisites

Prerequisite and Corequisite

Departmental approval: admission to Cement Mason's apprenticeship program.

Outcomes

Course Outcome(s):

Perform a beginner level formwork, elevations, and layout for residential and commercial concrete.

Objective(s):

1. Identify and construct various types of edge forms on grade.
2. Distinguish between placing and straight-edging.
3. Arrange in order steps for placing and finishing a slab.
4. Float and finish a small slab.
5. Finish a slab with a rough-broom finish.
6. Finish a slab with hand trowels.
7. Construct a straight curb form.
8. Construct a curb-and-gutter form.
9. Finish a slab with a fine-broom finish.
10. Finish a slab with a swirl (sweat-trowel) finish.
11. Place and prepare sub base for topping.

Methods of Evaluation:

All students will be evaluated during the first two weeks and mid-term. Progress reports will be issued per procedure. Additional course evaluations and final examination are detailed below:

1. Quizzes
2. Tests

3. Class participation
4. Homework

Course Content Outline:

1. Terms and definitions associated with edge forms on grade:
 - a. Edge forms
 - b. Foundation
 - c. Grade point
 - d. Monolithic pour
 - e. Expansion-joint material
 - f. Slab
 - g. Plumb bob
 - h. Batter board
 - i. Saw cut
2. Types of pours using edge forms
 - a. Floor without foundation
 - b. Floor with foundation
 - c. Curbs and curbs and gutters
3. Definitions of edge form parts
 - a. Block
 - b. Brace
 - c. Duplex nail
 - d. Dowel
 - e. Form-tie
 - f. Form-tie clamp
 - g. Joint
 - h. Reinforcing rod
 - i. Scab
 - j. Sheathing
 - k. Spacer
 - l. Stake
 - m. Tie wire
4. Types of edge forms and their parts
 - a. Edge form without wall
 - b. Edge form with wall
5. Materials used for edge-form concrete
 - a. All wood
 - b. All metal
 - c. Combination of wood and metal
 - d. Combination of hardboard and wood
6. Terms and definitions for placing and leveling concrete
 - a. Builders' level
 - b. Line
 - c. Burning forms
 - d. Spirit level
 - e. Boning rods
 - f. Cold joint
 - g. Sub-grade
7. Placing versus straight-edging
 - a. Placing
 - b. Straight-edging
8. Reasons sub-grade should be moist prior to placing concrete
 - a. To prevent absorption
 - b. To prevent early set
 - c. To keep down the temperature of the concrete
9. Methods of leveling

- a. Builder's level method
 - b. Line method
 - c. Laser level method
10. Job inspection prior to placing concrete
- a. Subgrade firmness
 - b. Subgrade moist
 - c. Form alignment/braced
 - d. On-grade
 - e. Bulkheads properly set for drainage
 - f. Specs are known
 - g. Curing materials on site
11. Floor terms and definitions
- a. Slab
 - b. Darby
 - c. Floating
 - d. Troweling
 - e. Edging
 - f. Subgrade
 - g. Watersheen
 - h. Bleedwater
 - i. Topping
 - j. Fines
 - k. Consistency
 - l. Knee board
 - m. Boom finishing
 - n. Burnish finishing
 - o. Swirl finishing
 - p. Monolithic
 - q. Neat cement
 - r. Laitance
 - s. Slurry
 - t. Acid etching
 - u. Bonding agent
 - v. Scarifier

Resources Other

1. 29 CFR. 1926 OSHA Construction Industry Regulations. <https://www.osha.gov/laws-regs/regulations/standardnumber/1926.2019>.
2. Intro to OSHA handouts
3. OSHA DVD
4. CPWR, OSHA 500, current edition, CPWR, Silver Spring, MD, 2015 · <https://www.opcmia.org/training/>
5. Concrete and Cement Masonry, Developed by the Curriculum and Instructional Materials Center for the Trade and Industrial Education Division Oklahoma Department of Career and Technology Education, 2002

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