

ATCM-1330: CONCRETE CONSTRUCTION EQUIPMENT

Cuyahoga Community College

Viewing: ATCM-1330 : Concrete Construction Equipment

Board of Trustees:

March 2020

Academic Term:

Fall 2020

Subject Code

ATCM - Appd Indus Tech-Cement Masonry

Course Number:

1330

Title:

Concrete Construction Equipment

Catalog Description:

Study of tools used in concrete construction for layout, forming, placing and finishing fresh concrete with emphasis on care and safe use of equipment.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

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

Outcomes

Course Outcome(s):

Use layout equipment to transfer information from blueprints to the field.

Objective(s):

1. Demonstrate the ability to use layout equipment.
2. Discuss various applications for layout equipment.

Course Outcome(s):

Use form setting tools to properly and safely set up concrete forms.

Objective(s):

1. Demonstrate proper care and safe use of forming tools.
2. Match the correct forming tool to the project.
3. Demonstrate the ability to use form setting tools safely to set up a given object from blueprints.
4. Demonstrate how to use a variety of form setting tools.

Course Outcome(s):

Determine proper site layout tool based on provided blueprints.

Objective(s):

1. Demonstrate use of site levels and lasers to establish elevations.
2. Demonstrate use of transits and theodolites to establish dimensions of objects to be built.

Course Outcome(s):

Select appropriate finishing tools for specified job and conditions.

Objective(s):

1. Identify various hand tools and state specific uses for placing and finishing fresh concrete.
2. State guidelines for the care and safe use of hand tools.
3. Demonstrate how to use a variety of finishing tools.
4. Apply knowledge of finishing tools for various circumstances and conditions (types of concrete, weather conditions, ground conditions, etc.)

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. Group activities
5. Hands on projects

Course Content Outline:

1. Terms/definitions - layout tools
 - a. Levels, site levels, and lasers
 - i. Grade
 - ii. Elevation
 - iii. Slope
 - b. Transits and theodolites
 - i. Lines
 - ii. Angles
 - iii. Control points
2. Terms/definitions - forming tools
 - a. Hand saws and power saws
 - i. Rip
 - ii. Crosscut
 - iii. Square
 - b. Hammers
 - i. Heavy
 - ii. Framing
 - c. Pins and stakes
 - d. Types of forms
 - i. Two by fours
 - ii. Two by six
 - iii. Two by eight
 - iv. Curved forms
 - v. Curb forms
 - vi. Panels
3. Rules for care/safe use of hand tools
 - a. Use the correct tool for job
 - b. Maintain tools properly
 - c. Keep tools clean
 - d. Inspect tools frequently
 - e. Repair broken or damaged tools promptly
4. Terms/definitions associated with hand tools

- a. Placing
 - b. Finishing
 - c. Void
 - d. Honeycomb
 - e. Rod
 - f. Float
 - g. Low-slump concrete
 - h. Patching
 - i. Love
 - j. Base
5. Guidelines for care and safe use of hand tools and different types of hand tools
- a. Shovels
 - b. Straight edges
 - c. Tampers
 - d. Edges
 - e. Jointers
 - f. Hand floats
 - g. Trowels
 - h. Combination tools
 - i. Miscellaneous tools

Resources

Hendrix, Laborn J. *Fundamentals of Carpentry*. Stillwater, Oklahoma: Oklahoma St Dept. of Vocational and Tech Educ/Curriculum Inst Materials Cntr, 1985.

Hendrix, Laborn J. *Fundamentals of Concrete and Cement*. Stillwater, Oklahoma: Oklahoma St Dept. of Vocational and Tech Educ/Curriculum Inst Materials Cntr, 1975.

Master Builders, Division of Martin Marietta Corp. *Concrete Performance DATA Handbook*. Cleveland, Ohio, 1983.

Kavanagh, Barry and Diane K. Slattery. *Surveying with Construction Applications*. 8th ed. 2014.

Resources Other

1. International Operative Plasters' and Cement Masonry's Association. <https://www.opcmia.org/training/> (<http://catalog.tri-c.edu>·<https://www.opcmia.org/training/>) . 2017.
2. 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

Top of page

Key: 232