

AIT-1120: BUILDING CONSTRUCTION LABORATORY

Cuyahoga Community College

Viewing: AIT-1120 : Building Construction Laboratory

Board of Trustees:

2012-11-29

Academic Term:

Fall 2024

Subject Code

AIT - Applied Industrial Technology

Course Number:

1120

Title:

Building Construction Laboratory

Catalog Description:

An introduction to work in building construction trades through discussion and hands-on training, providing an understanding of the history, practices, technologies, and factors of influences upon the industry. Extensive project work will include completion of masonry, carpentry, roofing, interior finishing, residential electrical, plumbing, and construction measurement. Construction site visits may be included.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

3

Requisites

Prerequisite and Corequisite

Eligibility for ENG-0985 Introduction to College Literacies, MATH-0915 Basic Arithmetic and Pre-Algebra or qualified Math placement, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT 1030-Building Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, and AIT-1060 Construction Tools.

Outcomes

Course Outcome(s):

1. Construct projects from verbal and written descriptions and/ or basic blueprints.

Objective(s):

1. Name the properties and uses for common building materials
2. Demonstrate the ability to complete project work independently and as team member.

Course Outcome(s):

2. Apply knowledge of the construction industry to be successful in working in this field.

Objective(s):

1. Explain the major trades associated with the construction industry.
2. Discuss the history of the building construction trades in North America, and explain how major events influenced construction industry.
3. Describe current employment trends in industry, and conditions that influence employment potential

Course Outcome(s):

3. Practice safe work habits as defined by the Occupational Safety and Health Administration (OSHA).

Objective(s):

1. Employ safe and appropriate behaviors while visiting worksites without undo cause for concern of contractors.
 2. Demonstrate safe and appropriate hand tool use in the construction building trades.
 3. Practice good housekeeping and tool maintenance.
 4. Recognize, and avoid or address health hazards associated with tasks, and materials in the construction trades.
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Methods of Evaluation:

- a. Written assignments
- b. Completion and quality of assigned project work
- c. Classroom participation and team work
- d. Quizzes

Course Content Outline:

1. Bricklaying
 - a. Tasks and roles
 - b. Identify parts of a brick.
 - c. Position brick to plans and specifications.
 - d. Mix mortar.
 - e. Apply mortar
 - f. Appropriate uses for various hand tools
 - g. Safe use procedures for various hand tools
 - h. Hand tool operation techniques
2. Cement masonry
 - a. Tasks and roles
 - b. Making good concrete and mortar.
 - c. Concrete production.
 - d. Define and list uses for the various types of concrete produced.
 - e. Appropriate uses for various hand tools
 - f. Safe use procedures for various hand tools
 - g. Hand tool operation techniques
 - h. Troweling concrete
3. Carpentry
 - a. Tasks and roles or carpenters (roughing, finish, cabinet maker)
 - b. Nature of wood
 - c. Lumber defects
 - d. Board footage computations
 - e. Wood fastening systems
 - f. Appropriate uses for various hand tools
 - g. Safe use procedures for various hand tools
 - h. Hand tool operation techniques
4. Electrician
 - a. Tasks and role of electricians
 - b. AC/DC circuits
 - c. Basic Wiring
 - d. Appropriate uses for various hand tools
 - e. Hand tools and tool operation techniques
5. Plumbing

- a. Modern plumbing systems and materials
 - b. Measuring, cutting and fitting pipe
 - c. Installing copper, galvanized, and plastic pipe
 - d. Jointing pipe
 - e. Drain pipe
 - f. Appropriate uses for various hand tools
 - g. Safe use procedures for various hand tools
 - h. Hand tool operation techniques
 - i. Measurement Tools & Calculations
6. Construction Safety
- a. Importance of OSHA
 - b. Standards and Processes
 - c. Employer obligations
 - d. Employee obligation
 - e. Working with compressed air tools
 - f. Electrical hand tools
 - g. Hand tools
 - h. Fall protection
 - i. Ergonomics
 - j. Electrical work
 - k. Evacuation plans
 - l. Eye and face protection
 - m. Confined work space
 - n. Hazard communication
 - o. Manual lifting technique
 - p. Toxic materials and chemical safety
 - q. Medical emergencies and first aid

Resources

Questech, Inc. *The Construction Zone Series*. Farmington Hills, MI: Questech Inc, 2006.

Brown, James et al. *The Construction Safety and Health Resource Guide*. 2nd. Cleveland, OH: Construction Industry Service Program, 2007.

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