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**Ohio Articulation Number (OAN)  
Course Submission Form  
2005-2006**



College/University Cuyahoga Community College

Course(s) Submitted(Title & Course #) Construction Methods, Materials and Equipment, CNST - 2130 for  
Ohio Articulation Number OET016

Date September 6, 2006 Course 1 of a 1 Course OAN mapping.

Name and title of individual submitting on behalf of the college/university

Name Peter Ross Title District Director, Transfer and Alternative Credit

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Credit Hours 3 qtr \_\_\_\_\_ sem x

Lecture Hours 3

Laboratory Hours 0 (if applicable)

Pre-Requisites(s) Course work (if applicable)

CNST-1730 Construction Print Reading ; or departmental approval

Placement Score (if applicable)

(Name of test)

(Domain) (Score)

Catalog/Course Description (Includes Course Title and Course #)

Fall 2005-Summer 2007- Construction Methods, Materials and Equipment, CNST – 2130

Study of common construction approaches including pre-fabrication practices,

modularization, and traditional site erection means. Construction materials and properties; testing methods; equipment usage, attributes, cost, and availability discussed. Includes 10-hour OSHA training program.

Texts/Outside Readings/Ancillary Materials

See Official Course Outline

Course Objectives and/or Plan of Work

**OAN Number:**

**OAN Date:**

**Board of Trustees Date: 05/27/04**

**Effective Date: 08/23/01**

## **CUYAHOGA COMMUNITY COLLEGE OFFICIAL COURSE OUTLINE**

SUBJECT AREA TITLE

Construction Engineering Technology

COURSE TITLE

Construction Methods, Materials and Equipment

SUBJECT AREA CODE-COURSE NUMBER

CNST - 2130

COURSE CREDIT HOURS

3

### **I. DESCRIPTION OF COURSE:**

#### **1. CATALOG DESCRIPTION**

Study of common construction approaches including pre-fabrication practices, modularization, and traditional site erection means. Construction materials and properties; testing methods; equipment usage, attributes, cost, and availability discussed. Includes 10-hour OSHA training program.

**2. LECTURE HOURS: 3**

**3. LAB HOURS: None**

**4. OTHER REQUIRED HOURS: 00**

**5. PREREQUISITE(S):**

CNST-1730 Construction Print Reading ; or departmental

approval.

## **II. OUTCOMES/OBJECTIVES:**

Upon satisfactory completion of CNST 2130 - Construction Methods, Materials and Equipment, the student should be able to perform the following outcomes and supporting objectives:

- A. Recognize, identify, and analyze construction methods and procedures according to contract specifications.
- B. Distinguish the various types of material testing methods used for common construction practices.
- C. Classify and prioritize equipment required for common construction practices.
- D. Predict and compare equipment costs for preliminary estimation of construction projects.
- E. Describe, identify, and differentiate common approaches for structural erection in residential and commercial construction.
- F. Characterize properties of various materials used in the construction industry.
- G. Interpret and apply OSHA rules to case studies.

## **III. COURSE CONTENT:**

- A. Construction as an industry
  - 1. Building systems and types of construction
  - 2. Construction materials
  - 3. Zoning ordinances and building codes
    - a. regional and national codes
    - b. trade associations
  - 4. Using metrics in construction
- B. Material properties
  - 1. Metal, ceramic, and organic material groups
  - 2. Mechanical properties
  - 3. Thermal properties
  - 4. Electrical properties
  - 5. Chemical properties
- C. Site construction
  - 1. Site plans
  - 2. Site preparation
    - a. earthwork requirements
    - b. heavy equipment

- c. soil testing
    - 3. Site work activities
    - 4. Foundation types and design
  - D. Concrete for construction
    - 1. Aggregate mixture
    - 2. Concrete tests
    - 3. Concrete types
      - a. cast-in-place
      - b. pre-cast
  - E. Ceramic building materials
    - 1. Stone
    - 2. Brick
    - 3. Ceramic tile
    - 4. Masonry construction
  - F. Metals for construction
    - 1. Ferrous metals
      - a. steel products
      - b. structural properties
      - c. metal testing
    - 2. Non-ferrous metals
      - a. corrosion characteristics
      - b. thermal and electrical conductivity
      - c. non-ferrous metal types
    - 3. Steel frame construction
      - a. erection and fastening
      - b. fire protection
      - c. decking and trussels
      - d. pre-engineered systems
  - G. Organic materials for construction
    - 1. Wood products
      - a. lumber types and sizes
      - b. lumber grades and tests
      - c. structural properties
      - d. wood preservatives and treatments
      - e. typical manufactured wood products
    - 2. Engineered wood products
      - a. panel products
      - b. laminated beams
      - c. trussels and joists
    - 3. Wood frames for construction
      - a. platform framing
      - b. balloon framing
      - c. pole construction
  - H. Thermal and moisture protection
    - 1. Bonding agents and sealants

2. Waterproofing coatings
- I. Equipment for construction
  1. Equipment categories
  2. Equipment vendors and publications
  3. Equipment purchase vs. lease
- J. Construction safety -- U.S. Department of Labor & OSHA & 10 hour training program
  1. Introduction to OSHA
  2. Electrical
  3. Fall protection
  4. Excavations
  5. Hand and power tools
  6. Personal protective and life saving equipment
  7. Materials handling, storage, use and disposal
  8. Scaffolds
  9. Cranes, derricks, hoists, elevators and conveyors
  10. Stairways and ladders

**IV. METHODS OF STUDENT EVALUATION MAY INCLUDE ANY OF THE FOLLOWING:**

- A. Quizzes
- B. Homework
- C. Tests
- D. Lab assignments
- E. Final project
- F. Written assignments
- G. Participation
- H. Oral presentations

**V. RESOURCES MAY INCLUDE ANY OF THE FOLLOWING:**

- A. Ching, Francis and Adams, Cassandra. *Building Construction Illustrated*. 3rd ed. New York: John Wiley and Sons, 2001.
- B. Nunnally, S. N.. *Managing Construction Equipment*. 2nd ed. New Jersey: Prentice Hall, 2000.
- C. Spence, William. *Construction*

*Materials, Methods and Techniques.* New York: Delmar, 1998.

**VI. ADDITIONAL RESOURCES:**

Description of Assessment and/or Evaluation of Student Learning

See Official Course Outline

Master Syllabi and Working Syllabi (if both are used)

Additional Documentation

OBR Use

Action

Approved	
Additional Information Requested	
Rejected	
Date	