

# ATCT-2511: CONCRETE COLUMNS AND DECKS

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## Cuyahoga Community College

**Viewing: ATCT-2511 : Concrete Columns and Decks**

**Board of Trustees:**

May 2024

**Academic Term:**

Fall 2024

**Subject Code**

ATCT - Appld Indus Tech - Carpentry

**Course Number:**

2511

**Title:**

Concrete Columns and Decks

**Catalog Description:**

Interpretation of plans and specifications to lay out concrete foundations and construct columns, beams and decks for large commercial buildings.

**Credit Hour(s):**

2

**Lecture Hour(s):**

2

## Requisites

**Prerequisite and Corequisite**

ATCT-1331 Concrete Footers and Walls, and ATCT-2341 Concrete Specialties, and ATCT-1370 Layout; or departmental approval.

## Outcomes

**Course Outcome(s):**

Layout and erect column forms, elevated deck forms, and beams following job site safety according to OSHA standards.

**Objective(s):**

1. Identify procedures for job site safety for foundation construction as defined by OSHA regulations.
2. Explain the purpose and use of piles, caissons, and spread foundations.
3. Describe the characteristics and use of heavy construction forming units such as large panel forms and ganged panel forms.
4. Layout and erect column forms.
5. Layout and erect elevated deck forms.
6. Fabricate formwork to construct beams.

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**Methods of Evaluation:**

1. Quizzes
2. Exams
3. Classroom Participation
4. Completion of assigned projects

**Course Content Outline:**

1. Concepts
  - a. Types, purpose or appropriate uses for various column forms
  - b. Types of deck form construction

- c. Types of beam and girder forms
  - d. Terminology
  - e. Purpose and use of piles, caissons, and spread foundations
  - f. Characteristics and use of heavy construction forming units
  - g. Column form layout techniques
  - h. Column form installation techniques
    - i. Elevated deck form layout techniques
    - j. Elevated deck installation techniques
  - k. Formwork fabrication techniques
    - l. Patent form systems
  - m. Shore scaffolding installation techniques
  - n. Slab floor system installation methods
  - o. OSHA standards
  - p. Vertical shoring and bracing
    - i. T shore
    - ii. L shore
    - iii. single post
    - iv. double post
    - v. two-piece adjustable
    - vi. shoring scaffold
2. Skills
- a. Providing structural support for formwork
  - b. Building columns forms using patent form systems
  - c. Building beam and girder forms
  - d. Erecting slab floor systems
  - e. Laying out and installing pans for concrete joist systems
  - f. Installing and adjusting shoring scaffolding
3. Issues
- a. Engineering Specifications
  - b. Safety

## Resources

Koel, Leonard. *Carpentry*. 4th ed. Homewood: American Technical Publishers, 2004.

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Koel, Leonard. *Concrete Formwork*. 3rd ed. Homewood: American Technical Publishers, 2005.

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Cook, Ronald. *Adhesive-Bonded Anchors: Bond Properties and Effects of In-Service and Installation Conditions*. Gainesville: University of Florida, Department of Civil Engineering, 1994.

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Koel, Leonard. *Concrete Formwork*. 3rd ed. Homewood: American Technical Publishers, 2005.

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Cook, Ronald. *Adhesive-Bonded Anchors: Bond Properties and Effects of In-Service and Installation Conditions*. Gainesville: University of Florida, Department of Civil Engineering, 1994.

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Carpenters International Training Fund. *Concrete Construction*. Las Vegas, NV: Carpenters International Training Fund, 2023.

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Carpenters International Training Fund. *Introduction to Formwork*. Las Vegas, NV: Carpenters International Training Fund, 2021.

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Carpenters International Training Fund. *Silica Awareness*. Las Vegas, NV: Carpenters International Training Fund, 2017.

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**Resources Other**

Carpenters International Training Fund. <https://www.carpenters.org/citf-training/>. 2024

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