

# CNST-1281: CONSTRUCTION ENGINEERING ORIENTATION

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## Cuyahoga Community College

### Viewing: CNST-1281 : Construction Engineering Orientation

**Board of Trustees:**

October 2024

**Academic Term:**

Fall 2025

**Subject Code**

CNST - Construction Engineering Tech

**Course Number:**

1281

**Title:**

Construction Engineering Orientation

#### **Catalog Description:**

Introduction to construction management principles. Recognition of professional practices, current issues and developments in construction, including , stages of a construction project, management roles and responsibilities, and concepts for estimating, planning, and scheduling.

**Credit Hour(s):**

3

**Lecture Hour(s):**

3

#### **Requisites**

##### **Prerequisite and Corequisite**

None.

#### **Outcomes**

##### **Course Outcome(s):**

Work in accordance with professional practices and maintain knowledge of current issues and developments in the construction industry.

##### **Essential Learning Outcome Mapping:**

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

##### **Objective(s):**

1. Categorize professional associations for the construction industry and recognize the values of these associations.
2. Assess the information of articles in professional trade journals for the construction industry.
3. Discuss management practices in the construction industry, and their purpose for jobsite operations.
4. Relate appropriate ethics and practices used in the construction industry to recognized codes of ethics.
5. Conceptualize the phases of construction and defend the purpose of each phase.
6. Identify the project participants for a construction project and their responsibilities.
7. Identify components of a maintenance of traffic plan and an erosion control plan.

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##### **Course Outcome(s):**

Utilize a project management application to become familiar with standard project documentation.

**Essential Learning Outcome Mapping:**

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

**Objective(s):**

1. Locate and examine project drawings and technical specifications.
2. Explain the purpose of a "Request for Information" that is used for a construction project.
3. Explain the purpose of a "Jobsite Daily Report" that is used for a construction project.
4. Recognize how jobsite safety can be monitored at a construction jobsite.
5. Distinguish how electronic communication issues can affect construction jobsite productivity.

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**Methods of Evaluation:**

1. Quizzes
2. Written assignments
3. Exams
4. Participation with use of project management application

**Course Content Outline:**

1. Professional associations
  - a. American Institute of Constructors (AIC)
  - b. Ohio Contractors Association (OCA)
  - c. National Association of Women In Construction (NAWIC)
  - d. Construction Management Association of America (CMAA)
  - e. American Institute of Architects (AIA)
  - f. Associate General Contractors of America
2. Functions of construction management and managers
  - a. Code of ethics
    - i. Associated General Contractors of America
    - ii. American Institute of Constructors
3. Current trends in construction
  - a. Project sizes and types
  - b. Construction project stages
  - c. Safety
  - d. Sustainability
4. New developments for construction
  - a. Materials and equipment
  - b. Project management applications
  - c. Building Information Modeling
5. Career outlook for the construction industry
  - a. Skilled labor trades
  - b. Site superintendents
  - c. Project managers
  - e. Project engineers
  - f. Estimators
  - g. Material suppliers
  - h. City and village officials
    - i. Codes and permits
    - ii. Zoning
6. Discuss issues that affect jobsite productivity.
  - a. Site layout
  - b. Material delivery
  - c. Storm water management
  - d. Safety management

- e. Sub-contractor meetings
- f. Daily jobsite operations

7. Outline sustainability issues at a construction jobsite

- a. Waste management
- b. LEED certification
- c. U.S. Green Building Council

8. Introduction to Work Zone Traffic Control

- a. Review standard ODOT (Ohio Department of Transportation) Maintenance of Traffic plans
- b. Introduce material shown on standard Work Zone Traffic Control Plans

9. Erosion and sediment control components

- a. Introduction to Erosion and sediment control components
- b. Introduce purpose and types

10. Working with Clients/Customer Service

- a. Introduction to types of work environments in construction management
- b. Introduction to expectations of behavior of clients/customers/contractors/employees

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## Resources

Jackson, Barbara, J. (2020) (2020) *Construction Management Jumpstart*, New Jersey: John Wiley & Sons.

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Ching, Francis, D.K. (2020) (July) *Building Construction Illustrated*, New Jersey: John Wiley & Sons.

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Brown, James, R. et al. (2017) (January) *The Construction Safety and Health Resource Guide*, Ohio: MANCOMM.

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Mason, P.D. (2023) *Construction Project Management 101: For Beginners & New Graduates*, SugarDog Publishing.

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## Resources Other

ODOT (2024) Standard Construction Drawings - Traffic site: <https://www.dot.state.oh.us/SCDs/Pages/traffic.aspx?&FilterField1=Series&FilterValue1=Maintaining%20Traffic%20%28MT%29>

Ohio Department of State (2024) Business First Stop website: <https://ohio.gov/business/resources/business-first-stop>

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