

CNST-1731: CONSTRUCTION PRINT READING

Cuyahoga Community College

Viewing: CNST-1731 : Construction Print Reading

Board of Trustees:

January 2023

Academic Term:

Fall 2023

Subject Code

CNST - Construction Engineering Tech

Course Number:

1731

Title:

Construction Print Reading

Catalog Description:

Overview of construction drawings for the major construction disciplines to understand presentation methods, interpretation, sequence of preparation, bid submittal processes, revision control, and code requirements. Commercial building, structural, and civil drawings utilized.

Credit Hour(s):

3

Lecture Hour(s):

3

Requisites

Prerequisite and Corequisite

None.

Outcomes

Course Outcome(s):

Identify and explain specific parts of a construction drawing.

Objective(s):

1. Describe what is required on working drawings for construction and civil engineering.
2. Locate and describe the meaning, and need, for specifications in a project manual.
3. Determine unit quantity of required materials for a construction project, based upon dimensioned working drawings.
4. Differentiate between types of working drawings for construction.
5. Identify and explain specific components of a working drawing for construction.
6. Visualize and describe the intended structure which is depicted by a working drawing for construction.

Course Outcome(s):

Apply knowledge of presentation methods, interpretation, sequence of preparation, bid submittal process, revision control, and code requirements for construction drawings.

Objective(s):

1. Outline steps and methods for construction of commercial structures.
2. Identify and explain the need for drawing revisions.
3. Summarize the process steps of drawing preparation for a contract document package.
4. Recognize how a project manual relates to a set of working drawings.
5. Describe the format of specifications in a project manual.

Methods of Evaluation:

- a. Quizzes
- b. Written laboratory assignments
- c. Exams
- d. Class discussion and participation
- e. Laboratory projects

Course Content Outline:

- a. Engineering/construction drawing fundamentals
 - i. Computer-Aided Drafting (CAD) and Design (CADD)
 - ii. Line types used in drawing
 - iii. Abbreviations, symbols, and notes
 - iv. Working drawing set
 - 1. title block information
 - 2. drawing scales
 - a. Architectural
 - b. Civil
 - c. Metric
 - 3. types of working drawings
- b. Civil engineering drawing fundamentals
 - i. Site and plot plans
 - ii. Civil engineering drawing basics
 - 1. location, direction, and distance
 - 2. legal descriptions
 - 3. excavating and grading
- c. Foundation construction
 - i. Foundation types
 - ii. Concrete
 - 1. structural specification
 - 2. steel reinforcement
 - iii. Masonry
 - 1. brick and stone
 - 2. structural specification
- d. Construction documentation
 - i. Bid submittal
 - ii. Contract documents
 - iii. Drawing submittal
 - iv. Specifications
 - v. Building and municipality codes
 - vi. Drawing revisions
 - vii. Project build manual
- e. Commercial construction
 - i. Structural concrete
 - 1. pre-cast concrete
 - 2. pre- and post-tension
 - 3. steel reinforcement
 - ii. Structural steel
 - 1. steel framing
 - 2. roofing
 - iii. Roof structures
 - 1. beams and supports
 - 2. joists and ledgers
 - 3. decking
 - 4. built-up roofing
- f. Site improvements
 - i. Approach apron
 - ii. Curb and gutter

- iii. Asphalt surfacing
- iv. Retaining walls
- v. Ground swails, drains and culverts
- vi. Utilities
- g. Material quantity takeoff
 - i. Print interpretation
 - ii. Specify proper units for material quantity measure
 - iii. Calculate material quantity with proper units

Resources

Ching, Francis and Adams, Cassandra. *Building Construction Illustrated*. 7th ed. New York: Wiley and Sons, 2020.

Proctor, Thomas E. *Printreading for Residential and Light Commercial Construction - With 32 Prints*. 6th. American Technical Publishers, 2016.

Resources Other

- OHDOT CADD Engineering Standards Manual (2021) <https://www.transportation.ohio.gov/working/engineering/cadd-mapping/cadd-standards-manual-ohdot> (<https://www.transportation.ohio.gov/working/engineering/cadd-mapping/cadd-standards-manual-ohdot/>)
- National Association of Home Builders YouTube Channel (2022) <https://www.youtube.com/c/NAHBTV> (<https://www.youtube.com/c/NAHBTV/>)
- Ohio Utility Protection Service Resources page (2021) <https://www.oups.org/promotional-catalog/>

Instructional Services

CTAN Number:

Career Technical Assurance Guide CTCON001

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