BCI C104: CONCRETE CODE

Item	Value
Curriculum Committee Approval Date	12/06/2024
Top Code	095720 - Construction Inspection
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)

Course Description

Formerly: BCT C304. Students who are preparing for a career as a Building Code Inspector or concrete specialty inspection and who want to learn more about code requirements for concrete construction will find this course a major learning asset. Every aspect of construction will have some sort of concrete placement. This fundamental course will provide the student with basic knowledge to apply when moving on to advanced practices and procedures of the concrete industry. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Inspect, test, analyze, and report on concrete infrastructure (e.g., highways, bridges, dams, and sewer systems) to ensure compliance with local and federal building code and ordinance regulations.

Course Objectives

- 1. Demonstrate proper recording and maintaining of inspection records when assigned the task of inspecting a concrete pour.
- 2. Select the proper type of construction to insure building codes and laws are being complied with.
- 3. Examine construction plans and evaluate if minimum code requirements have been met for each occupancy.
- 4. Evaluate fire receptiveness of various construction materials and assemblies.
- 5. Classify all buildings by use or occupancy, determine the occupant load, and calculate adequate emergency exit requirements.
- 6. Explain or describe the format and performance principles of the Code and develop a working knowledge of the provisions contained therein.

Lecture Content

Introduction and Overview Course Overview Text Book overview Code History and Administration History of the Building Codes Duties of the Building Inspector Inspector s Qualifications Fundamentals of Concrete Construction Documents Definitions History of Concrete Hydration Process Concrete Components and Admixtures. Quality and Durability Concrete Quality Testing and Quality Control Mixing and placing Formwork Weather Exposure Concrete Reinforcement Details of Reinforcements and Code Requirements Placing reinforcement Corrosion Protection Structural Plain Concrete Plain Concrete Definition and Requirements Precast and Prestressed Concrete Slab on Grade Minimum Slab Provisions Site Preparation Forms and Reinforcements Joints Concrete Anchorage and Accessories Anchor Bolts Allowable Anchor s Capacities Footings and Foundations Foundation Walls Retaining Walls Damp Proofing and Water Proofing Piles and Piers Foundation Reading of Reinforced Concrete Plans Material Specifications Structural framing Schedules and Details

Method(s) of Instruction

- Lecture (02)
- DE Online Lecture (02X)

Instructional Techniques

A variety of instructional techniques will be employed to encompass different student learning styles. These may include, but are not limited to, lecture, discussion, projects, and small group activities. Instruction will be supplemented, where appropriate, by digital media presentations resources, guest speakers, and virtual or in person field trips.

Reading Assignments

Complete reading assignments assigned from the textbook, supplemental readings, handouts, Internet resources, and any assignments from Coastline s Library.

Writing Assignments

Weekly projects, plans, revisions, workforce examples, and discussion topic responses that will demonstrate skills application through authentic projects.

Out-of-class Assignments

Read/View the required materials, conduct appropriate research, prepare documents/plans/codes, complete and revise projects, and prepare for quizzes/exams as part of the industry certification exam.

Demonstration of Critical Thinking

Identifying and applying the appropriate codes and regulations to demonstrate competency verifying concrete standards in the field.

Required Writing, Problem Solving, Skills Demonstration

Weekly projects, plans, revisions, and written justification for applying concrete codes efficiently and in compliance with federal regulations.

Eligible Disciplines

Building codes and regulations (inspecting of construction, building codes,...: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required International Code Council. Concrete Manual (ACI 318R-14) , ed. ISBN 9781609836184: International Code Council, 2019 Rationale: Concrete Manual, Concrete Quality and Field Practices International Building Codes and ACI 318-19

Other Resources

1. Coastline Library