

Instructor:

Phone:

E-mail:

Department:

Program Manager:

Dean:

**TEXTBOOK AND SUPPLIES:**

- NCCER Concrete Construction Level 1, 2nd Edition, ISBN-13: 9780136868286

**PREREQUISITE(S):** TECN 1000 Concrete Masonry 1A with C or higher grade or instructor approval

**OTHER REGISTRATION RESTRICTION(S):** It is highly recommended that students be registered with DOL by their Sponsor (employer).

**COURSE DESCRIPTION:** In this course, apprentices are introduced to concrete construction, safety, fall protection, trade tools and equipment, concrete placement prep and reinforcement, foundations and slabs-on-grade, and horizontal formwork. The course is designed to help the apprentice develop their craft skills and be contributing members of a concrete crew.

**Upon successfully completing this course, students should be able to:**

1. Follow safety regulations and standards related to concrete operations, fall protection, and elevated work
2. Identify, use, and properly care for the concrete construction hand and power tools
3. Operate a vibrating compactor to compact subgrade, confirm the elevation of a prepared subgrade, and complete a pre-placement inspection
4. Use appropriate tools to cut and bend reinforcing bars
5. Demonstrate five types of ties for reinforcing bars; use wire ties for lap splicing reinforcing bars; and place, space, type, and support reinforcing bars
6. Establish elevations; layout and construct foundation using an establish grid line; install templates, keyways, and embedments; and form a strip pier foundation forms and prepare for resetting at another location
7. Erect, plumb, brace, and level a handset deck form
8. Install edge forms, including blockouts, embedments, and bulkheads

**COURSEWORK:**

- **Weekly Homework:** You are expected to come to class prepared with your weekly readings and assignments.
- **Pre-Post Assessments, Weekly Quizzes:** Take and submit online in Canvas.
  - A pre- and post-assessment will be taken on the first and last day of class to measure progress
  - Weekly quizzes will be taken online in Canvas. You are allowed two attempts with the higher score recorded.

- **Attendance/Participation:** Attendance is expected and crucial to understanding the material and participating in classroom activities. Attendance and participation will be recorded daily and included in your coursework grade. 95% attendance is required, so you are allowed three excused absences.
- **Final Exam:** The final exam will be a comprehensive examination.
- **Lab Projects:** Completion of related lab projects will be required. Missed projects must be coordinated with the instructor and made up.

**GRADES:** Final grades will be calculated using the following scale and weights.

A	93% and above	B-	80% – 82.9%
A-	90% – 92.9%	C+	77% – 79.9%
B+	87% – 89.9%	C	73% - 78.9%
B	83% – 86.9%		

Homework	20%	Weekly Projects	25%
Pre-Post Assessments, Quizzes	20%	Attendance/participation/class work	10%
Final Exam	25%		

**Schedule** (Subject to change)

WEEK	DAY 1	DAY 2	ASSIGNMENTS
1	1. Class Introduction 2. Intro to Concrete Construction a. Industry Overview b. Concrete construction process c. Concrete craftworkers and apprenticeships	1. Concrete Safety a. Safety on the job b. Concrete operations safety	TBD
2	1. Fall Protection Orientation a. Workplace safety and hazard control b. Regulatory requirements and OSHA	1. Fall Protection Orientation a. Incidents and accidents b. Elevated work environments	TBD
3	1. Concrete Tools and Equipment a. Concrete hand tools	1. Concrete Tools and Equipment a. Concrete Equipment	TBD
4	1. Concrete Tools and Equipment a. Concrete Equipment	1. Concrete Tools and Equipment a. Compactors, vibrators, screeds, and trowels b. Saws and grinders	
5	1. Preparing for Placement a. Subgrade and grade-level preparations	1. Preparing for Placement a. Subgrade and grade-level preparations	TBD
6	1. Preparing for Placement a. Pre-placement requirements and considerations	1. Preparing for Placement a. Pre-placement requirements and considerations	TBD

WEEK	DAY 1	DAY 2	ASSIGNMENTS
7	1. Reinforcing Concrete a. Reinforced Steel applications	1. Reinforcing Concrete a. Working with Reinforcing Steel	TBD
8	1. Reinforcing Concrete a. Bending and Cutting Reinforcing Steel	1. Reinforcing Concrete a. Placing Reinforcing Steel	TBD
9	1. Foundations and Slab-on-Grade a. Safety When Forming Foundations and Slabs	1. Foundations and Slab-on-Grade a. Form Locations and Elevations	TBD
10	1. Foundations and Slab-on-Grade a. Job-Site Layout	1. Foundations and Slab-on-Grade a. Foundation Types and Applications	TBD
11	1. Foundations and Slab-on-Grade a. Foundation Forms i. Job-built wood forms ii. Manufactured forms	1. Foundations and Slab-on-Grade a. Forming and finishing slabs-on-grade b. Slabs-on-grade construction considerations	TBD
12	1. Horizontal Formwork a. Elevated Deck Formwork Safety b. Structural Concrete Floor and Roof Decks	1. Horizontal Formwork a. Elevated Formwork b. Structural Concrete Floor and Roof Decks	TBD
13	1. Horizontal Formwork a. Structural Concrete Floor and Roof Decks	1. Horizontal Formwork a. Elevated Deck Formwork	TBD
14	1. Horizontal Formwork a. Elevated Deck Formwork	1. Horizontal Formwork a. Elevated Decks	TBD
15	1. Horizontal Formwork a. Elevated Decks b. Shoring	1. Horizontal Formwork a. Shoring	TBD
16	1. Horizontal Formwork a. Specialty Form Systems	1. Wrap up 2. Final	TBD

**WITHDRAWAL POLICY:** The College's withdrawal schedule is followed. No withdrawals will be approved beyond the drop date.

**COMMUNICATION and FEEDBACK EXPECTATIONS:** Email is the best way to communicate with your instructor through the Canvas Inbox. You can expect to receive responses to emails within 24 business hours. Projects and exams will be graded and recorded within one week of when the assignment was submitted. Keep the line of communication open to avoid any misunderstandings.

**ELECTRONIC DEVICES IN THE CLASSROOM:** No video or audio recording in the classroom is allowed without written authorization from the instructor. Cell phones and other electronic devices should be silent and off the desk during class except to take notes if it is not distracting to classmates. In an emergency, exit the classroom to use your cell phones. Disruptive behavior will cause you to be excused from class and lose participation points. Please inform your instructor of any special circumstances at the start of the semester.