

Designing Concrete Structures Reinforced with GFRP Bars Using the ACI CODE-440.11-22 Certificate Program

ACI Certificate Programs are designed to provide concrete professionals with in-depth knowledge about particular topics in concrete materials, design, and/or construction by following a defined course of study. Once a course of study for a certificate program has been completed, the participant can request to receive a certificate through ACI University.

The primary purpose of the **Designing Concrete Structures Reinforced with GFRP Bars Using the ACI CODE-440.11-22** certificate program is to educate attendees on ACI CODE 440.11-22 and the application of Glass Fiber-Reinforced Polymer (GFRP) reinforced concrete in the construction industry. ACI 440.11-22 “Building Code Requirements for Structural Concrete Reinforced with Glass Fiber-Reinforced Polymer (GFRP) Bars” is a newly developed design code for new concrete structures reinforced with GFRP bars. It is based on ACI 318 code requirements for steel-reinforced concrete but modifies ACI 318 code requirements for the specific use of GFRP reinforcing bars as an alternative to steel reinforcing bars. It addresses construction and material requirements, structural systems, members, and strength and serviceability requirements. Among the subjects covered are design and construction for strength, serviceability, and durability; load combinations, load factors, and strength reduction factors; structural analysis methods; deflection limits; development and splicing of reinforcement; construction document information; and field inspection and testing.

This program will provide a basic overview of FRP reinforcing bar properties, where they are commonly used, and how other specifications and standards from ACI and ASTM provide the basic foundation on which the new code has been developed. A discussion on where the code puts limits on the types of structures that can be reinforced with GFRP and where the code does and does not apply will be presented. The program will then provide detailed discussion on the engineering of GFRP reinforced concrete for various member types (including beams, columns, slabs, walls, and connections); determining flexural, shear, torsional, and axial strength of members reinforced with GFRP; and detailing GFRP bars for serviceability and durability. In all presentations, specific differences in designing with GFRP reinforcement versus steel reinforcement will be highlighted.

This is a great opportunity for engineers, owners, contractors, consultants, students, and manufacturers to get familiar with the technical and engineering aspects of the ACI 440.11 code and learn more about designing and detailing with GFRP reinforcement.

A program certificate is awarded after completion of the following required courses (6 PDHs):

- [ACI CODE-440.11-22: Overview of GFRP Reinforced Concrete \(1 PDH\)](#)
- [ACI CODE-440.11-22: Serviceability and Flexural Design of GFRP Reinforced Concrete \(1.5 PDH\)](#)
- [ACI CODE-440.11-22: Shear and Torsion Design of GFRP Reinforced Concrete \(1.5 PDH\)](#)
- [ACI CODE-440.11-22: Requirements for GFRP Reinforced Concrete Columns, Fire, and Structural Analysis \(1 PDH\)](#)
- [ACI SPEC-440.5-22: Handling and Placing of GFRP Reinforcement \(1 PDH\)](#)


Program Guidelines:

- Completion of each course requires an 80% passing score on the course exam.
- All course completion certificates must be earned within a maximum period of 2 years.
- Courses that are updated will still count toward the certificate program as long as they have been completed within the 2-year timeframe.


- Any course completed outside the 2-year timeframe must be retaken using the current version of the course.
- Courses must be completed by one individual using the same username.
- Access to ACI documents not included with the course may be required.
- Once the course of study has been completed, a program certificate can be requested through ACI University (My Courses tab).
- ACI reserves the right to update courses and change certificate program requirements at any time.
- ACI reserves the right to revoke a certificate or discontinue a certificate program for any reason.

To Obtain Certificate:

My Courses Certificates Transcripts Redeem Code 

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	Designing Concrete Structures Reinforced with GFRP Bars Using the ACI CODE-440.11-22 - Program Details	Launch
	Designing Concrete Structures Reinforced with GFRP Bars Using the ACI CODE-440.11-22 - Request Certificate	Launch

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