

Foreword

Design Principal of Concrete Structures is one of the core courses of civil engineering major, mainly introduces the basic mechanical properties (bending, compression, shear, torsion) and the design principles of basic elements (beam, column, slab and wall) of concrete structures. Including mechanical properties of materials for concrete structures, the basic principles of concrete structure design, normal section flexural capacity and inclined section shear capacity of beams, axial and eccentric compressed column design, torsion capacity of beams, checking of deflection and crack width, etc. Through this course, students can master the basic theory of concrete structures, carry out structural design based on appropriate national and regional structural design codes or specifications. This course can provide students a solid foundation for further study and solving complex scientific and engineering problems encountered in engineering design and construction after graduation.

This book takes the newly published *Code for Design of Concrete Structures* (GB 50010—2010), *General Code for Concrete Structures* (GB 55008—2021), and *Unified Standard for Reliability Design of Building Structures* (GB 50068—2018) as benchmarks. Introduce the development history of concrete structure in China and the great achievement China has made in civil engineering.

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