

Construction & Building Engineering Courses (CB)

Construction Materials & Reinforced Concrete Structures Courses Group

CB 354 – Design of Reinforced Concrete Structures 1

COURSE INFORMATION

Course Title: Design of Reinforced Concrete Structures 1

Code: CB 354

Hours: Lecture – 4 Hrs. Tutorial – 2 Hrs. Credit –3.

Prerequisite: CB 343

GRADING

Class Performance/Attendance: 10%

Midterm # 1/Assignments – (7th Week): 30%

Midterm # 2/Assignments – (12th Week): 20%

Final Exam: 40%

COURSE DESCRIPTION

Introduction and material properties, Elastic Method: Analysis and design of beams considering flexure. Limit state Design Method: Analysis and Design of beams considering flexure and shear. Development length and anchorage. Design of one- way at two-way solid slabs. Analysis and design of short columns.

TEXT BOOK

Design of Reinforced Concrete Structures "Volume 2" by Ghoneim, Mashhour and El-mihilmy, Mahmoud Publisher: 2005.

Egyptian Code of Practice for Reinforced Concrete Structures, 2007/203.

REFERENCE BOOKS

Reinforced Concrete Design by W.H.Moslay, R.Hulse, J.H.Bungey Publisher: MacMillan, 1990.

Design of Reinforced Concrete Structures "Volume 1" by Ghoneim, Mashhour and El-mihilmy, Mahmoud Publisher: 2005.

APPENDIX A-95

Reinforced Concrete Design by C. Wang and C.G.Salman Publisher: Harpor Row, 1998.

Design of Reinforced Concrete Structures by J.C.McCarmac Publisher: Harper Collins, 1993.

Design of Reinforced Concrete Structures by Ghoneim, M, and El-Mihilmy, M Publisher: First Edition, Vol 1 and 2, 2005

COURSE AIM

The aim of this course is to describe the behavior of reinforced concrete components and structures, which leads to analysis and design.

SPECIFIC OUTCOMES OF INSTRUCTION

The student knows the concepts and philosophy of design and analysis of reinforced concrete structures.

COURSE OUTLINE

Week Number 1: Introduction to material properties.

Week Number 2: Elastic method: analysis of beams considering flexure.

Week Number 3: Elastic method: design of beams considering flexure.

Week Number 4: Limit state design method: analysis of beams considering flexure.

Week Number 5-7: Limit state design method: design of beams considering flexure.

Week Number 8: Principle of shear and torsion.

Week Number 9: Design of beams considering shear and torsion.

Week Number 10: Development length according to ECP 2000.

Week Number 11: Deflection.

Week Number 12: Design of two-way slabs.

Week Number 13-14: Design of two-way slabs.

Week Number 15: Design of short columns.

Week Number 16: Final Exam.

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr Adel M.Belal .

Course Demand: *Required*