Construction & Building Engineering Courses (CB)

Construction Materials & Reinforced Concrete Structures Courses Group

CB 558 – Special Topics in Reinforced Concrete Structures

COURSE INFORMATION

Course Title:	Special Topics in Reinforced Concrete Structures		
Code:	CB 558		
Hours:	Lecture – 2 Hrs.	Tutorial – 2 Hrs.	Credit –3.
Prerequisite:	CB 455		

GRADING

Class Performance/Attendance:	10%
Midterm # 1/Assignments – (7^{th} Week):	30%
Midterm # 2/Assignments – (12^{th} Week):	20%
Final Exam:	40%

COURSE DESCRIPTION

This course introduces the design of concrete structures for special tasks. These structures include bridges, halls, and storage structures. The design of contemporary R.C. bridges is achieved through learning the theory and basics behind pre-stressed concrete and the design of pre-stressed bridges. In addition, the design of halls in buildings or factories is applied through the design of saw-tooth (north light) structures, shell roof structures, and arched frame structures. Moreover, the design of special structures for storage such as elevated circular tanks, ground tanks, and silos are covered in the course.

TEXT BOOK

Prestressed Concrete Analysis And Design Fundamentals by Naaman,Antqine E. Publisher: McGraw-Hill Inc. 1992

REFERENCE BOOKS

Concrete Structures: Stresses and Deformations by Ghali, R. Favre, and M. Elbadry, Publisher: Taylor & Francis, Inc., 3rd edition 2004.

Prestressed Concrete: Analysis and Design by A.E. Naaman Publisher: McGraw-Hill, 1983.

Reinforced Concrete Design by C.K. Wang and C.G. Salmon Publisher: Harpor Row, 4th Edition 1998.

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

Reinforced Concrete Design by W.H. Mosley, R. Hulse, J.H., Bungey Publisher: McMillan, 1990

COURSE AIM

This course aims to provide an introduction for the students to the design of special structures for transportation as bridges, as well as special structures for workshops in factories or halls in administration buildings or theatres. In addition to the design of special structures for water or grain storage.

SPECIFIC OUTCOMES OF INSTRUCTION

The student should be Familiar with with professional design of structures that are required in transportation, industrial and community activities.

COURSE OUTLINE

Week Number 1-2: Design of north light (saw-tooth) structures.

Week Number 3-4: Design of shell roof and dome Structures.

Week Number 5: Design of arched frame structures.

Week Number 6-7: Design of elevated circular tanks.

Week Number 8-9: Design of ground tanks.

Week Number 10-11: Design of silos structures.

Week Number 12-15: Design of Pre-stressed Bridges (Working stress method/ Ultimate strength method).

Week Number 16: Final Exam.

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr Adel M.Belal .

Course Demand: *Elective*