

Construction & Building Engineering Courses (CB)

Structural Analysis & Metallic Structures Courses Group

CB 343 – Structural Analysis 2

COURSE INFORMATION

Course Title: Structural Analysis 2

Code: CB 343

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

Prerequisite: CB 242

GRADING

Class Performance/Attendance: 10%

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

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

Final Exam: 40%

COURSE DESCRIPTION

Introduction to statically indeterminate structures, Methods of structural analysis of statically indeterminate structures. Method of consistent deformations.

Method of three-moment equation for continuous beams. Virtual work method. Slope-deflection method. Moment distribution method. Stiffness method. Computer validations.

TEXT BOOK

Fundamental of Structural Analysis by WEST, HARRY H. Publisher: John Wiley & Sons, Inc., New York, USA, 1993.

REFERENCE BOOKS

Fundamental of Structural Analysis by SPENCER W.J. Publisher: W.J.Spencer, Macmillan Education LTD, USA, 1988.

Theory of Structures by RAMAMRUTHAN S. Publisher: Dh anpat Rai & Sons, 1981.

Analysis and Behavior of Structures by ROSSOW EDWIN C. Publisher: Prentice Hall, New Jersey, USA, 1996.

Structural Analysis by TARTAGLIONE LOUIS C. Publisher: McGraw-Hill Inc.,New York, USA,1991.

APPENDIX A-90

COURSE AIM

The course aims is to teach students the methods of the structural analysis of different statically indeterminate structural forms.

SPECIFIC OUTCOMES OF INSTRUCTION

The student should be capable to perform the structural analysis of different forms of statically indeterminate structures.

COURSE OUTLINE

Week Number 1: Introduction to statically indeterminate structures. Methods of structural analysis of statically indeterminate structures.

Week Number 2-3: Method of consistent deformations, Worked examples.

Week Number 4: Method of three- moment equation for continuous beams, Worked examples.

Week Number 5-7: Virtual work method for the analysis of statically indeterminate structures, Worked examples & 7th week examination.

Week Number 8-9: Slope-deflection method, Worked examples.

Week Number 10: Moment Distribution method, Worked examples.

Week Number 11-12: Stiffness method, Worked examples & 12th week examination.

Week Number 13-15: Computer validation

Week Number 16: Final Exam.

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr. Mostafa Khalifa.

Course Demand: *Required*