BenhaUniversity
Faculty of Engineering- Shoubra
Civil Engineering Department

1st Year Civil
Academic Year 2024   (1st Term)
Structural Analysis CVE110

Lecture Time: Wednesday 9:00-11:30 am   **Location: Hall A2-3**

Section Time: as per attached schedule
Online Hours: Sunday 9:00-10:00 pm   **Location: Microsoft Teams**

Text Book
1. Course Notes and Solved Examples Prepared by the Instructors
2. El.Dakhakhny, W.M., "*Theory of Structures*", Part I & II, 9th edition, Dar-Al-Maaref, Cairo, Egypt, 1995, ISBN: 977-02-4790-1
3. Beer, F., Johnston, R.E., Dewolf, J.T., and Mazurek D., "*Statics and Mechanics of Materials*", 3rd edition, Prentice Hall; 896 pages, ISBN 978-0132166744, 2010

Instructors: Ass. proff.Dr. Tarek El-Salakawy & Dr. Mosaad El-Diasity

Syllabus:

1. Overview of Structural Engineering (One Week)

1.1 Types of Structures and Members
1.2 Types of Construction Materials
1.3 Types of Loads including system loading and load path
1.4 Basic understanding of the structural analysis and design process, including the use of specifications and building codes
1.5 Course Contents
1.6 Revision of Plane Statics

2. Statically Determinate Beams and Frames (4 Weeks)

2.1 Supports and Reactions
2.2 Equations of Equilibrium
2.3 Computation of Reactions
2.4 Intermediate Hinge
2.5 Equation of Condition
2.6 Computation of Reactions for structures involving equation of condition
2.7 Introduction and Understanding of Structural Stability and Determinacy

3. Internal Forces for Determinate Beams and Frames (3 Weeks)

3.1 Normal Forces (N.F), Shearing Forces (S.F), and Bending Moment (B.M)

3.2 Sign Convention

3.3 N.F, S.F, and B.M for structures subjected to Concentrated and Uniform Distributed Loads

4. Statically Determinate Trusses (3 weeks)

4.1 Types of Trusses

4.2 Analysis of Trusses (Method of Joints)

4.3 Analysis of Trusses (Method of Sections)

Course Assessment
Assessment will be based on: assignments, quizzes, Midterm, and Final exams.

Marks: 120

Assignments + Attendance	= 15 Marks
Quizzes	= 20 Marks
Mid-Term Exam	= 25 Marks
Final Exam	= 60 Marks

Note: 75% of the lectures and tutorials must be attended