



Department of Architectural Engineering
College of Engineering
University of Cihan- Sulaimaniya

Subject: Structural Analysis

Course Book – Year 3

Lecturer's name: Diyari Burhan Hussein

Academic Year: 2024-2025

Course Book

1. Course name	Structural Analysis
2. Lecturer in charge	Diyari Burhan Hussein
3. Department/ College	Architectural/Engineering
4. Time (in hours) per week	Theory: 4 Practical: 0
5. Office hours	Saturday (8:30 am – 12:30 pm)
6. Course code	ARC083107
7. Teacher's academic profile	Earned the bachelors degree in civil engineering at university of Sulaimani, Sulaymaneyh/Iraq, and the master's degree in structural engineering at Budapest University of Technoly and Economicsthat, Budapest/Hungary, and individual thesis that was 'Comparative analysis of strengthening methods for RC monolithic columns'.
8. Keywords	
9. Course overview:	<p>This lecture is intended to provide the student with clear and through presentation of theory and application of structural analysis as is applies to beams, trusses and frames.</p> <p>We subdivide the various methods of structural analysis into two basic categories: classical and approximate. Each distinct method is described, the relationship of approaches is explained. Thus the distinct role of each method is clarified.</p>
10. Course objective:	<p>This course is to introduce the basic principles of structural analysis and The goal is to produce an efficiency constructed facilities.</p> <p>The major theme is the relationship between structural design and architectural design.</p>
11. Student's obligation	Students should be on the commitment with lectures, do their home works and prepare themselves for exams and quizzes.

Students will get a warning after absence 8% of the contact hours of theoretical lectures and will fail if they miss more than 10%.

12. Forms of teaching

- ✓ **Data show**
- ✓ **Whiyboard**

13. Assessment scheme

Midterm Examination	30 %
Paper, Quiz, Project	10%
Final theory exam	60%

14. Student learning outcome:

On successful completion of this module students will be able to:

1. describe loads of structure
2. analyse force systems and reactions
3. understand the concepts of equilibrium
4. analysis of stresses and deflections

design of members, subsystems, and their connections

15. Course Reading List and References:

Compulsory bibliography:

1. Russell C. Hibbeler "Structural Analysis".

Optional bibliography:

2. *Structural Analysis: (Using Classical and Matrix Methods) Jack C. McCormac*
3. Aslam Kassimali "Structural Analysis".
4. Ronald L. Sack "Structural Analysis".
5. Angus J. Macdonald "Structure and Architecture".

16. The Topics:

Lecture No	Topic
1	Introduction
2	Analysis of statically Determinate structures , { Axial Force, Shear Force, and Bending moment Diagrams }
3	Analysis of statically Determinate structures , { Axial Force, Shear Force, and Bending moment Diagrams }
4	Stability and Determinacy of Structures
5	Stability and Determinacy of Structures
6	Influence Line Diagrams for Statically Determinate Structures

7	Influence Line Diagrams for Statically Indeterminate Structures, Moving Loads
8	Approximate Analysis for Statically Indeterminate Structures
9	Elastic Deformations for Statically Determinate Structures
10	Analysis of Statically Indeterminate Structures (beam, frame and truss)
11	■ Consistent – Deformation
12	■ Least - Work theorem
13	■ Slope- Deflection Equations
14	■ Moment- Distribution Method
15	Suspension Bridges
16	An Introduction to Matrix Analysis
Final Examination	
17. Peer review	
<p>Main Lecturer incharge Diyari Burhan Hussein</p> <p style="text-align: right;">Head of The Department Mrs. Tara Azad Rauof</p>	