

University of Engineering and Technology, Taxila
Department of Civil Engineering

Course Title:	Theory of Structures-II (CE-301)
Pre-requisite(s):	Theory of structures-I
Credit Hours:	3 + 1
Contact Hours:	3 + 3
Text Book(s):	1. Structural Analysis. Hibbeler, R. C., 6th Edition. 2. Structural Analysis. Aslam Kassimali., 2 nd Edition.
Reference Book(s):	1. Analysis of Structures. West, H. H: An Integration of Classical and Modern Methods. John Wiley and Sons Ltd; 2nd Edition (August 23, 1989).

Catalog Data:

Analysis of Indeterminate Structures Using Force Approach; Analysis of Indeterminate Structures Using Stiffness Approach

Course Objectives:

To familiarize students with various methods of analysis of indeterminate structures.

To develop the skills for using the state-of-the-art methods of structural Analysis.

Course Learning Outcomes:

At the end of this course, the student will:

CLO:1 Have a skill to apply basic methods of analysis of indeterminate structures.

CLO:2 Have a skill to apply advanced methods of analysis of indeterminate structures.

Course Contents:

- **Analysis of Indeterminate Structures Using Force Approach**
 - Compatibility methods for beams and frames with and without support settlement.
 - Analysis of indeterminate trusses.
- **Analysis of Indeterminate Structures Using Stiffness Approach**
 - Moment distribution for beams and frames for prismatic and non-prismatic members with and without side-sway and support settlement
 - Slope deflection method for beams and frames with and without support settlement

- **Influence Lines for Indeterminate Structures.**
- **Introduction to Plastic Analysis of structure.**
- **Approximate analysis of Indeterminate Structures.**

Grading Policy:

Sr. No.	Grading	% of Total Marks
1	Assignments	10
2	Quizzes	10
3	Midterm Exam	20
4	Final Exam	40
5	Practical	20
Total		100

Students Learning Outcome:

Students who pass the course will be able to apply modern tools and state-of-the-art methods for design of structures.

Course Professional Outcome/Industrial Usage:

Students appreciate the need to become advanced structural engineers.

PLOs	CLOs	
	CLO-1 (Basic Methods)	CLO-2 (Advanced Methods)
PLO 1 (Engineering Knowledge)		
PLO 2 (Problem Analysis)	✓	✓
PLO 3 (Design/Development of Solutions)		
PLO 4 (Investigation)	✓	✓
PLO 5 (Modern Tool Usage)		
PLO 6 (The Engineer and Society)		
PLO 7 (Environment and Sustainability)		
PLO 8 (Ethics)		
PLO 9 (Individual and Team work)		
PLO 10 (Communication)		
PLO 11 (Project Management)		
PLO 12 (Lifelong Learning)		

Assessment Modules	CLOs	
	CLO 1	CLO 2
Assignments		✓
Quizzes	✓	✓
Midterm Exam	✓	✓
Final Exam	✓	✓