MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY
JAMSHORO
Department of Civil Engineering

LESSON PLAN

COURSE TITLE: **Theory of Structures**	COURSE CODE: **CE222**	CREDIT HOURS: **02**	MINIMUM CONTACT HOURS: **32**
COURSE INSTRUCTER: **Engr. Samar Hussain Rizvi (A+D) / Engr. Masroor Ali Jatoi (B+C)**			
Batch: **22CE**	Semester: **3rd**	Semester Starting Date: **20-11-2023**	Semester Suspension Date: **29-03-2024**

COURSE LEARNING OUTCOMES:

CLO No.	Description	Taxonomy level	Associated PLO
1	ANALYSE shear force and bending moment in beams and frames.	C4	2
2	EVALUATE axial Forces in Trusses; axial force, shear force and bending moment in arches; buckling of columns; and influence lines and moving loads.	C5	2

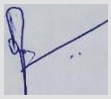
LESSON CONTENTS AND ASSOCIATED CLO(s)

Contents	CLO No.	Marks Assigned	Delivery Methods	Assessment Methods (Marks)
• **Introduction – Basics of Structures** – Introduction to subject, syllabus, and reference books – Types of structures, Loads on structures. – Types of beams, supports and Loadings – Determinate and Indeterminate structures. • **Reactions, Shear force and bending moment in beams and frames** – Support reactions for different beams – Reactions of combined beams with internal hinges. – Concept of Shear Force and Bending moment – Shear Force (SF) and its sign conventions – Bending Moment (BM) and its sign conventions – SF and BM diagrams of determinate beams. – SF and BM of beams carrying Point loads – SF and BM of Uniformly Distributed Load – SF and BM of Uniformly Varying Load – Relationship between loading intensity, SF and BM. – Maximum shear and moment calculations. – • **Determinate Plane Frames** – Frames- its types-Equilibrium of Frames – Analysis of Forces in Gable Frames – SF and BM diagrams of Frames. **No. of lectures: 16**	**1**	**25**	• Class Lecture • Discussion • Q/A • Problems Solving	• Assignment (05) • Class Test (05) • Mid semester Exam (15)

• **Trusses** – Introduction to trusses and its method of solution – Method of Joints – Method of Sections – Analysis of forces in trusses • **Arches** – Arches and its components. – Forces acting on Arches. – Analysis of Three hinged arches. • **Columns** – Introduction to Columns, – Short and Long Columns – Euler's Formula for Buckling load. – Design Loads on Columns • **Influence lines and moving loads** – Moving Loads on Beams – Influence lines – Influence lines for reactions, shear force and bending moment **No. of lectures: 16**	**2**	**25**	• Class Lecture • Discussion • Q/A • Problems Solving • Design Practice	• Final Exam (25)

ASSESSMENT DETAILS

S. No.	Assessment Activities	Marks	Activities		CLO(s) to be assessed
1	Sessional	**10**	Assignment(s)	1	1
			Class Test	1	1
2	Mid Semester Exam	**15**	1		1
3	Final Semester Exam	**25**	1		2

Prepared by: **Engr. Samar Hussain Rizvi** Signature:  Dated: 14-11-2023	Reviewed by: **Curriculum Review Committee**  Signature: Dated: 12-12-2023	Approved by: **Chairman, CED**  Signature: Dated: 12-12-2023