



# MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY JAMSHORO

## Department of Civil Engineering

### LESSON PLAN

COURSE TITLE: <b>Reinforced and Prestressed Concrete</b>		COURSE CODE: <b>CE336</b>	CREDIT HOURS: <b>03</b>	MINIMUM CONTACT HOURS: <b>48</b>	
COURSE INSTRUCTOR: <b>Prof. Dr. Fareed Ahmed Memon(B+C)/Prof. Dr. Naeem Aziz Memon(A+D)</b>					
Batch: <b>20CE</b>	Semester: <b>6<sup>th</sup></b>	Semester Starting Date: <b>03-07-2023</b>	Semester Suspension Date: <b>20-10-2023</b>		
<b>COURSE LEARNING OUTCOMES:</b>					
<b>CLO No.</b>	<b>Description</b>	<b>Taxonomy level</b>	<b>Associated PLO</b>		
1	DESIGN various reinforced concrete structural members	C6	3		
2	DESIGN various prestressed concrete members	C6	3		
<b>LESSON CONTENTS AND ASSOCIATED CLO(s)</b>					
<b>Contents</b>		<b>CLO No.</b>	<b>Marks Assigned</b>	<b>Delivery Methods</b>	<b>Assessment Methods (Marks)</b>
<ul style="list-style-type: none"><li>• <b>DESIGN OF REINFORCED CONCRETE MEMBERS:</b></li><li>- Doubly reinforced concrete beams</li><li>- Analysis and design of simply supported doubly reinforced concrete beams</li><li>- Shear in reinforced concrete beams</li><li>- Design of shear reinforcement for simply supported beams</li><li>- Column, types of columns, design considerations</li><li>- Analysis and design of short columns</li><li>- Footing, types of footing</li><li>- Design of isolated square &amp; rectangular footing</li><li>- Design of combined &amp; strap footing</li><li>- Design of raft/mat footing</li><li>- Two-way slabs, design considerations</li><li>- Design of two-way solid slabs</li><li>- Staircase, design of staircases</li><li>➤ <b>No. of lectures required: 29</b></li></ul>		<b>1</b>	<b>60</b>	<ul style="list-style-type: none"><li>• Class Lecture</li><li>• Discussion</li><li>• Design practice</li></ul>	<ul style="list-style-type: none"><li>• Mid semester Exam (20)</li><li>• Assignment-1 (05)</li><li>• Class test-1 (05)</li><li>• Final Exam (30)</li></ul>
<ul style="list-style-type: none"><li>• <b>DESIGN OF PRESTRESSED CONCRETE MEMBERS:</b></li><li>- Prestressed concrete, Basic concept of prestressed concrete</li><li>- Advantages and applications of prestressed concrete</li><li>- Classification and methods of prestressing</li><li>- Properties and importance of high strength materials used in prestressed concrete</li><li>- Analysis of prestress, Basic assumptions</li><li>- Analysis of prestress based on stress concept and load balancing concept</li><li>- Losses of Prestress</li><li>- Lump sum &amp; detailed estimation of prestress losses</li><li>- Design of prestressed concrete members for flexure and shear</li><li>➤ <b>No. of lectures required: 19</b></li></ul>		<b>2</b>	<b>40</b>	<ul style="list-style-type: none"><li>• Class Lecture</li><li>• Discussion</li><li>• Design practice</li></ul>	<ul style="list-style-type: none"><li>• Assignment-2 (05)</li><li>• Class test-2 (05)</li><li>• Final Exam (30)</li></ul>

### ASSESSMENT DETAILS

S. No.	Assessment Activities	Marks	Activities		CLO(s) to be assessed
1	Class Test/Assignment/Project Design/Presentation/Quiz/Field Report	20	Assignment(s)	2	1,2
			Class test(s)	2	1,2
2	Mid Semester Exam	20	1		1
3	Final Semester Exam	60	1		1, 2

Prepared by: **Prof. Dr. Fareed A. Memon**

Signature :

Dated: 10.04.2023



Reviewed by: **Curriculum Review Committee**

Signature:

Dated: 18-04-2023



Approved by: **Chairman, CED**

Signature:

Dated: 18-04-2023

