SARDAR RAJA COLLEGE OF ENGINEERING,

ALANGULAM

DEPARTMENT OF CIVIL ENGINEERING

MICRO LESSON PLAN

SUBJECT NAME : DESIGN OF RC & BRICK MASONRY STRUCTURES

SUBJECT CODE : CE 2401

YEAR/SEM : IV Year / VIII SEM

BRANCH : CIVIL ENGINEERING

STAFF NAME: Prof.R.MURUGESHWARI,

A.P, DEPT. OF CIVIL ENGG.

CE 2401 DESIGN OF REINFORCED CONCRETE & BRICK MASONRY STRUCTURES

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OBJECTIVE:

This course covers the design of Reinforced Concrete Structures such as Retaining Wall, Water Tanks, Staircases, Flat slabs and Principles of design pertaining to Box culverts, Mat foundation and Bridges. At the end of the course student has a comprehensive design knowledge related to structures, systems that are likely to be encountered in professional practice.

UNIT I RETAINING WALLS 12

Design of cantilever and counter fort retaining walls

UNIT II WATER TANKS **12**

Underground rectangular tanks – Domes – Overhead circular and rectangular tanks – Design of staging and foundations

UNIT III SELECTED TOPICS **12**

Design of staircases (ordinary and doglegged) – Design of flat slabs – Design of Reinforced concrete walls – Principles of design of mat foundation, box culvert and road bridges

UNIT IV YIELD LINE THEORY **12**

Application of virtual work method to square, rectangular, circular and triangular Slabs

UNIT V BRICK MASONRY **12**

Introduction, Classification of walls, Lateral supports and stability, effective height of wall and columns, effective length of walls, design loads, load dispersion, permissible stresses, design of axially and eccentrically loaded brick walls

TUTORIAL: 15 TOTAL: 60 PERIODS

TEXT BOOKS

1. Krishna Raju, N., “Design of RC Structures”, CBS Publishers and Distributors, Delhi, 2006
2. Dayaratnam, P., “Brick and Reinforced Brick Structures”, Oxford & IBH Publishing House, 1997

3. Varghese, P.C., “Limit State Design of Reinforced Concrete Structures ”Prentice hall of India Pvt Ltd New Delhi, 2007.

REFERENCES

1. Mallick, D.K. and Gupta A.P., “Reinforced Concrete”, Oxford and IBH Publishing Company
2. Syal, I.C. and Goel, A.K., “Reinforced Concrete Structures”, A.H. Wheelers & Co. Pvt. Ltd., 1994
3. Ram Chandra.N. and Virendra Gehlot, “Limit State Design”, Standard Book House.2004.

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This subject deals with

- Retaining Walls
- Water Tanks
- Staircases
- Flat slabs
- Box culverts
- Mat foundation
- Bridges

MICRO LESSON PLAN

WEEK	LECT.NO	TOPICS TO BE COVERED	TEXT/REFERENCE BOOK
UNIT I - RETAINING WALLS			
I	1	Introduction	TEXT BOOK 1
	2	Principles of Retaining walls (AV CLASS)	
	3	Design procedure for Cantilever Retaining walls	
	4	Design of Cantilever Retaining walls	
	5	Problems	
II	6	Problems	
	7	Problems	
	8	Principles of Counterfort Retaining wall	
	9	Design procedure for Counterfort Retaining wall	
	10	Design of Counterfort Retaining wall	
	11	Problems	
	12	Problems	
UNIT II - WATER TANKS			
III	13	Design procedure for Underground water tanks	TEXT BOOK 1
	14	Design of Underground water tanks	
	15	Problems	
	16	Design procedure for rectangular water tanks	
	17	Design of rectangular water tanks	
	18	Problems	
IV	19	Design of Domes (AV CLASS)	
	20	Problems	
	21	Design of Overhead circular Tanks	
	22	Problems	
	23	Design of Overhead rectangular Tanks	
	24	Design of staging and foundations	
UNIT III - SELECTED TOPICS			
V	25	Design procedure for flat slabs	TEXT BOOK 1
	26	Design of flat slabs	
	27	Problems	
	28	Design of Reinforced concrete walls (AV CLASS)	
	29	Principles of mat foundation	
	30	Design of mat foundation	
	31	Problems	
	32	Box culvert and road bridges	

VI	33	Design of staircases - ordinary	
	34	Problems	
	35	Design of staircases - doglegged	
	36	Problems	
UNIT IV - YIELD LINE THEORY			
VII	37	Introduction	TEXT BOOK 1
	38	Yield line Pattern (AV CLASS)	
	39	Derivation for square slab by virtual work method	
	40	Application of virtual work method - square	
	41	Problems	
	42	Derivation for rectangular slab by virtual work method	
VIII	43	Application of virtual work method - rectangular	
	44	Problems	
	45	Derivation for triangular slab by virtual work method	
	46	Application of virtual work method – triangular Slabs	
	47	Problems	
	48	Application of virtual work method - circular Slabs	

UNIT V - BRICK MASONRY			
IX	49	Introduction	REFER BOOK 1
	50	Classification of walls (AV CLASS)	
	51	Design of reinforced Brick work	
	52	Problems	
	53	Problems	
	54	Problems	
X	55	Design of axially loaded brick walls	
	56	Problems	
	57	Problems	
	58	Design of eccentrically loaded brick walls	
	59	Problems	
	60	Problems	

PREPARED BY,

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AP/CE.