

Course Number and Name												
BCE602 - REINFORCED CONCRETE STRUCTURES – II												
Credits and Contact Hours												
4 & 60												
Course Coordinator's Name												
Ms.R.J.Rinu Isah												
Text Books and References												
TEXT BOOKS:												
1. N.Krishnaraju, Design of R.C.Structures, CBS Publishers and Distributors. Delhi, 1989												
REFERENCE BOOKS:												
1. Mac Ginley, T.J. Reinforced Concrete Design, Theory and Examples, E and N.Spon. United London, 1978												
2. Jaikrishna and Jain O.P, Plain and Reinforced Concrete Vol. I & II",Nem Chand & Bros., 1958												
3. Krishna Raju N, Bridge Engineering" Oxford and IBH Publishing,2010												
4. Park R. and Paulay T. Reinforced Concrete Structures John Wiley and Sons, 1975.												
5. Neville A.M. Properties of Concrete, Pitman Pub., 1981												
Course Description												
<ul style="list-style-type: none"> To give an exposure to the design of continuous beams, slabs, staircases, walls and bridge structures and to introduce yield line theory 												
Prerequisites						Co-requisites						
Reinforced Concrete Structures – I						NIL						
required, elective, or selected elective (as per Table 5-1)												
Course Outcomes (COs)												
CO1	Design counter-fort and cantilever retaining walls											
CO2	Design underground and overhead water tanks											
CO3	Design bridges and flat slab											
CO4	Different methods and systems – uniform and non-uniform pre-stressing design											
CO5	Design Slab using yield line theory											
Student Outcomes (SOs) from Criterion 3 covered by this Course												
COs/SOs	a	b	c	d	e	f	g	h	i	j	k	
CO1			H	M								
CO2			H	M								
CO3			H	M								
CO4			H	M								
CO5			H	M								

List of Topics Covered		
UNIT I	RETAINING WALLS	12
Retaining Walls – Design of cantilever and counter fort types using working stress method.		
UNIT II	WATER TANKS	13
Water Tanks – Underground rectangular tanks – Domes – overhead circular and rectangular tanks – Design of staging and foundations.		
UNIT III	BRIDGES	13
Bridges – slab Bridge – Distribution of concentrated loads by effective width and Pigeaud’s method. Load distribution in interconnected girders by Courbon’s method – T – Beam Bridge.		
UNIT IV	PRE STRESSED CONCRETE	11
Principles of Pre–stressing – Materials for pre–stressed Concrete – Different methods and systems – uniform and non-uniform pre-stressing – losses in pre-stress – Analysis of simply supported beams with straight and parabolic tendons.		
UNIT V	YIELD LINE THEORY	11
Yield Line Theory: Application of virtual work method to square, rectangular, and Triangular slabs.		