

B. E. CIVIL ENGINEERING			
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)			
SEMESTER - VII			
DESIGN OF RCC AND STEEL STRUCTURES			
Course Code	18CV72	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
Course Learning Objectives: This course will enable students to			
<ol style="list-style-type: none"> 1. Provide basic knowledge in the areas of limit state method and concept of design of RC and Steel structures 2. Identify, formulate and solve engineering problems in RC and Steel Structures 3. Give procedural knowledge to design a system, component or process as per needs and specifications of RC Structures like Retaining wall, Footing, Water tanks, Portal Frames and Steel Structures like Roof Truss, Plate Girder and Gantry Girder. 4. Imbibe the culture of professional and ethical responsibilities by following codal provisions in the analysis, design of RC and Steel Structures. 5. Provide factual knowledge on analysis and design of RC Structural elements, who can participate and succeed in competitive examinations. 			
Module -1			
<p>Footings: Design of rectangular slab, slab-beam type combined footing. Retaining Walls: Design of cantilever Retaining wall and counter fort retaining wall. Water Tanks: Design of circular water tanks resting on ground (Rigid and Flexible base). Design of rectangular water tanks resting on ground. As per IS: 3370 (Part IV). Design of portal frames with fixed and hinged based supports.</p>			
Module -2			
<p>Roof Truss: Design of roof truss for different cases of loading, forces in members to given. Plate Girder: Design of welded plate girder with intermediate stiffener, bearing stiffener and necessary checks Gantry Girder: Design of gantry girder with all necessary checks.</p>			
Course Outcomes: After studying this course, students will be able to:			
<ol style="list-style-type: none"> 1. Students will acquire the basic knowledge in design of RCC and Steel Structures. 2. Students will have the ability to follow design procedures as per codal provisions and skills to arrive at structurally safe RC and Steel members. 			
Question Paper Pattern:			
<ul style="list-style-type: none"> • Two questions shall be asked from each module. There can be maximum of three subdivisions in each question, if necessary. • One full question should be answered from each module. • Each question carries 50 marks. • Code books – IS 456, IS 800, IS 3370 (Part IV), SP-16, SP (6) – Steel Tables, shall be referred for designing. The same will be provided during examination. 			
Textbooks:			
<ol style="list-style-type: none"> 1. N Krishna Raju, “Structural Design and Drawing of Reinforced Concrete and Steel”, University Press 2. Subramanian N, “Design of Steel Structures”, Oxford university Press, New Delhi 3. K S Duggal, “Design of Steel Structures”, Tata McGraw Hill, New Delhi 			
Reference Books:			
<ol style="list-style-type: none"> 1. Charles E Salman, Johnson & Mathas, “Steel Structure Design and Behavior”, Pearson Publications 2. Nether Cot, et.al, “Behavior and Design of Steel Structures to EC -III”, CRC Press 3. P C Verghese, “Limit State Design of Reinforced Concrete”, PHI Publications, New Delhi 4. S N Sinha, “Reinforced Concrete Design”, McGraw Hill Publication 			