



GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma of Vocation (D.Voc) , 3rd Semester

Branch: Architectural Assistantship

Subject Name: Structure-II

Subject Code: 1230602

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	P	OJT	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
3	-	-	3	50	-	-	-	50

L-Lecture; P-Practical; OJT – On Job Training; C – Credit; ESE – End Semester Examination; PA – Progressive Assessment

SEMESTER III		
<p>Focus: To give an insight into the structural behavior of columns and beams. To provide an introduction to design of reinforced concrete structures. The role of structures in architecture should be taught.</p>		
Sr no	Contents:	Hr
1	<ul style="list-style-type: none"> ● Concrete: Composition, mix design, water cement ratio, strength, durability, workability requirements. 	6
2	<ul style="list-style-type: none"> ● Relevance of RCC in architectural practice advantages of RCC over other conventional structural practices. 	6
3	<ul style="list-style-type: none"> ● Steel for RCC– Plain & twisted bars, is 456 code provisions 	6
4	<ul style="list-style-type: none"> ● Limit state method – Basic concept, types of loads, assumptions, calculation for singly RC beam (only) 	6
5	Basic concepts of pre-stressed concrete,	6
6	<ul style="list-style-type: none"> ● Introduction to special structural form and basic structural concepts about: Shells, folded plates, domes, grid structures, flat slabs (RCC), space frames, tensile structures and pneumatic structures (no problems to be solved) 	6
7	<ul style="list-style-type: none"> ● Reinforcement details for footing, column , beam , slab and staircase 	6
	Total	42
<p>Project: Various thumb rules to decide the dimension of the structural element, importance of soil bearing capacity.</p>		
<p>Course Outcome: Develop an understanding of concrete materials and mix design concept, reading and understanding of structural drawing.</p>		
<p>Method: Structural drawing of footing, beam, slab, column, PPT, lectures, documentary, reinforcement sketches.</p>		
<p>References: Khurmi R.S.- Strength of Materials</p> <ul style="list-style-type: none"> ● Norris & Wilbur-Elementary Structural Analysis ● Parikh J.P.-Fundamentals of Structural Analysis & Design ● Parikh J.P.-Understanding Concept of Structural Analysis Design ● Punamia B.C.-Strength of Materials 		



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Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
5	20	15	5	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above levels (Bloom's Taxonomy)