GUJARAT TECHNOLOGICAL UNIVERSITY

BRANCH NAME: B. Arch.

Subject Name: Building Construction Drawing – V

Subject Code: 2X55002

3rd Year: Semester – V

Prerequisite:

It is assumed that the students have the understanding and the clarity on the topics of RCC Construction, Hollow walls, Cause of defects in buildings, temporary support systems, building joints, principles of electric installation, study of electrical services, daylighting and daylight factor, electrical layout and all other topics covered in Building Construction Drawing I – IV.

Rationale:

This course tries to explore the study of PCC elements, precast elements, types of RCC column foundations, steel column footings, advance shallow and deep foundations, types of slabs & vaults, general connections. I

Teaching and Assessment Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks	University Exam type
				External Exam		Internal Exam			
Field Work	Lectures	Studio	C	(ESE) Theory	(ESE) Viva	(PA) Theory	(PA) Viva		
2	2	2	6	40	NA	20	40	100	Drawing / Theory Exam (3 Hrs)

Content:

Sr. No.	Content	Total Hours*	% Weightage*
1	Materials: Steel & Concrete – RCC Elements, PCC Elements, Precast Elements	8	10%
2	Introduction to advance shallow and deep foundations	6	40%
3	RCC Column foundation: Retaining walls, raft, pile foundations, cantilever and combined footing.	18	
4	Introduction to footings for steel columns	6	
5	Different types of slabs and vaults	6	5%
6	Introduction to structural steel & rolled steel sections	6	20%
7	Conceptual study of general connections – Beam to beam connections – Beam to column connections – column to column connections – column to foundation connection.	10	
8	Concept of built up beams and columns – recommended uses.Concept of lacings, battening & importance of bracings.	10	
9	Introduction to HVAC – Understanding the concept and functioning of the HVAC.	14	15%
10	Concept of Elevators & Escalators and their types	12	10%

*: Indicative

Note: *In all the above contents, the pedagogy should be more stressed through theoretic and diagrammatic methods, which can be supported by modern and advancements in techniques related to the above contents. However,****calculation based problems/sums should not be dealt in the above content of this course****.*

- Contd. -

References:

- Building Construction, N. K. R. Moorthy
- Building Construction, Ramanathan
- Building Construction, B. C. Punmia
- Design of Steel Structures, Arya &Ajmani

Course Outcome:

Upon completion of this course, the students should be able to

- Identify and select the different components in the practical field.
- They should be able to analyse and evaluate the components, so as to learn the advantages and disadvantages of the same.
- After studying the pros and cons, they should be able to propose the same in their studio projects as well as through some projects.

List of Projects / Assignments:

Lectures/Tutorial work shall consist of presentations on the above mentioned content, constructional details and the methodology of the same,their design and structural aspects. Assignments should cater to the theoretical part as well as more stress should be on the design part through diagrams for better comprehension by students.