GUJARAT TECHNOLOGICAL UNIVERSITY
BRANCH NAME: B. Arch.
SUBJECT NAME: Building Construction – III
SUBJECT CODE: 2X35002
2nd Year, Semester: III

Prerequisite:
Students should have studied BC-I & II taught in semester-I & II

Rationale:
- Roofs and Roof coverings Introduction, characteristics of roof, types of roofs by the method of geometry and methods of construction.
- Introduction to fundamentals of water supply and drainage services required in a building. Learning about various fixtures and fittings available in the market. Preparing elementary design layout of these services with typical details

Teaching and Assessment Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks	University Exam Type
Field work	Lectures	Studio	C	External exam		Internal exam			
				(ESE)Theory	(ESE) Viva	(PA)Theory	(PA)Viva		
3	2	3	08	40	NA	60	NA	100	DRAWING EXAM

Content:

Sr. No.	Content	Total Hours*	% Weightage*
1	Unit I: Understanding of different types of flat roof construction in different materials: - Brick: Jack arch - RCC: One way and two way slabs Basic understanding of vernacular flat roofing systems in the country in mud, stone and brick	24	15%
2	Unit II: Basic understanding of all kinds of sloping roofs in different materials: - Lean-to, couple, closed couple, collar, scissor. - Detailed study of simple roof trusses: King Post Queen Post - Different types of roofing materials such as GI sheets, fiber glass, aluminum, polycarbonate, clay tiles, coir-based corrugated sheets etc. along with water proofing materials for roofs such as asphaltic sheets, kapchi finish etc. - Fixing details of roofing material to structural system. - Fixing details at ridge and gutter.	32	25%
3	Unit III: Basic understanding of water proofing and damp proof courses: Causes and defects of dampness. - Methods adopted for waterproofing and damp proofing at different levels of a building. - Admixtures and different materials (rigid, flexible) used in the process.	16	15%

	- Application of damp proof course and water proofing in our country (through enlarged section)		
4	Unit IV: Water supply and drainage: - Introduction to sanitation and its importance. - Pipes and fittings, materials, size and classification. - Different types of fixtures and fittings for washrooms and kitchens - Connection of lines to fittings - Underground, overhead and internal storage tanks and supply lines. - Pumping mechanisms. - Design layout of water supply for an apartment block, and calculation of Supply requirements based on standards. - Waste water drainage: traps of various types. Their details and use. - Roof drainage and rain water disposal. - Sewer details: construction of inspection chambers, traps and septic tanks.	48	45%

*: indicative

Reference Books:

- Construction of Building Vol.-I- R. Berry
- Building Construction Metric Vol.-II- W. B. Mckay
- Construction Technology Vol.-I- Chudley
- Building Construction Illustrated- Francis D. K. Ching
- Engineering Materials – S.C. Rangwala (course book)
- Building Materials – B.C. Punamia (Additional Reference)
- Time Savers Standards – Building Materials and Systems – Donald Watson (Advanced Reference)

List of Projects/Assignments*:

AV material, Lectures, Presentations, Model making, Site visits etc

*- this is suggestive for common purpose.