



Course Title: BUILDING CONSTRUCTION - III

Credit Units: 5

Course Level: UG

Course Code: ARCH 207

L	T	P/S	SW/F W	No. of PSDA	ARCH. STUDIO	TOTAL CREDIT UNITS
1	-	2	-	4	2	5

Course Objectives: Students shall be able to extend knowledge about specific building elements, their graphical representation and their functions. Moreover, to impart knowledge on building roofing system in timber, different types of surface finishes and detail study and of different types of staircases. As well, Students shall be able to understand latest and smart building materials employed in construction industry.

Pre-requisites: Building Construction I & II

Course Contents/Syllabus:

Course Contents/Syllabus:	Weightage
Module I: Detailed Building Section	20%
Detailed Building Section (External-Internal interface) for a simple two storied structure (with Balcony on the first floor) comprising Beam, Slab, Balcony, Plinth protection, DPC, lintel and chhajja, plaster, flooring, external cladding, coping, gola, Roof Water-proofing, Door/Window etc. with proper labelling and required dimensions.	
Module II: Roofing in Timber	20%
Concept of spanning and its extension in formation of timber roofs (Lean to roof, closed couple roof, collar roof etc.)	
Module III: Materials Used for Surface Finishes	30%
Wall finishes: Basic knowledge of Interior and Exterior Paints (Cement Paint, Acrylic Emulsion, Distemper, Enamel Paint etc.), various types of plasters, varnishes and texture paints. Cladding with natural & artificial stones, sizes, colors, properties and their fixing details.	
Floor & Roof finishes: Insulation, Water proofing and multi-layered integrated roof finishes, Tiles, Concrete tiles, Ceramic & Vitrified Tiles, Terrazzo, Stone Flooring, Tremix Flooring. Clay tiles, Wooden, Asbestos Cement Sheets, Aluminium Sheets, Galvanized iron (GI) Sheets etc. for sloped roofs.	
Classification of glass, types of glass, physical properties and uses of glass.	

Adhesives & Sealants: Introduction, Natural Adhesives, Modifiers & Plasticizers, Sealants, Non-shrink Grouts.	
Module IV: Vertical Transportation	20%
Introduction to different types of staircases – Types of staircases on the basis of geometry (Dog Legged Stairs, Circular, Open Well etc.). Plan, Section and Elevation. Different types of Ramps and it's governing gradient for vehicular and pedestrian transportation.	
Module V : Professional Skill Development Activities	
Introduction to the smart and intelligent materials employed in wall, roof and floor finish. Site and Industry visit to introduce the materials described in Module III	10%

Student Learning Outcomes:

- Students will be able to comprehend the structural and finishing elements of standard buildings and their graphic representation techniques through a composite building section (external-internal interface).
- Students will be able to gain knowledge on different finishing materials, their constituents, properties and application.
- Students will be able to gain knowledge about different types of staircases and draw plans, Elevations and Sections of the same.

Pedagogy for Course Delivery:

The course will be delivered by means of lectures, studio exercises, group presentation and domain specific, structured site visits. Market visits by students shall be instructed for their own assessment of availability and prices. Practical exercises on usage of various building materials shall be conducted in the construction yard. Guest lectures shall be organized to impart knowledge on the latest construction technology and materials. Industry and site visits to introduce the various materials.

List of Professional Skill Development Activities (PSDA):

1. Identification & classification of various contemporary materials used in wall finishes.
2. Market survey of contemporary materials used in floor and roof finishes material used in construction.
3. Photographic documentation of the field study of intelligent materials used in buildings.
4. Making models of various types of timber roofs.

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
50%	50%	EE + V

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment (50 %)						End Term Examination (50%)
Components (Drop down)	A	C	CT	P1	P2	EE
Weightage (%)	5	15	10	10	10	50

Lab/Practical/Studio Assessment

Continuous Assessment/Internal Assessment (50 %)						End Term Examination (50%)
Components (Drop down)	A	CP	P1(PSDA)	SW	P2	V
Linkage of PSDA with Internal Assessment Component, if any						
Weightage (%)	5	5	10	25	5	50

A – Attendance, C – Case Discussion/Analysis, CP – Class Performance, CT – Class Test (Theory Based), CT (PB) – Class Test (Practical Based), SW – Studio Works, P1 – Project, P2 – Presentation, V – Viva Voice, EE – End Term Exam.

Text Reading:

- Building Construction Materials by M.V. Naik
- Building Construction & Materials, S.C. Rangwala
- A text book of Building Construction, B.C. Punmia

References:

- Building Construction, Mackay WB Vol. 1-4
- Construction Technology, Chudley Vol. 1-6
- Structure in Architecture, Salvadori and Heller
- Building Materials & Construction, Shushil Kumar.