

AR-123 BUILDING MATERIALS – II :: C-16

Subject Title	:Building Materials – II
Subject Code	:AR-123
Periods / Week	:3
Periods / Semester	:54
Credits	:3
Internal Assignments & Mids	:50 Marks
External Examinations	:50 Marks
Total Marks	:100 Marks
Duration of Exam	:3 Hrs (University Exam)

TIME SCHEDULE

Sl. No	Major Topics	No. of periods	Weightage of Marks	Short Ans Questions	Essay Ans Questions
			End Exam	End Exam	End Exam
1.	Unit – I (Laminates & Veneers)	6	8		1
2.	Unit – II (Paints & Varnishes)	8	10	1	1
3.	Unit – III (Glass)	8	10	1	1
4.	Unit – IV (Plastics)	6	10	1	1
5.	Unit – V (Floorings)	10	18	1	2
6.	Unit – VI (Roof coverings)	8	8		1
7.	Unit – VII (Miscellaneous materials)	8	10	1	1
	Total:	54	74	5	8

Note: Final exam question paper consists as follows:

1. PART-A for 10 marks which consists 5 short questions all 5 to answer no choice and each one carries 2 marks &
2. PART-B for 40 marks which consists 8 essay questions out of which 5 to answer (3 are choice) and each carries 8 marks.

Course Overview:

The course is intended to provide information on the properties, uses, installation and costs of building materials. The course highlights on Mechanical and physical properties of various materials. Influence of various factors on these properties. Causes of defects, their prevention and remedies. Testing of materials.

Objectives of the Course:

To provide knowledge on the various types of building materials used while highlighting the current innovations and trends.

Expected Skills / Knowledge Transferred:

Knowledge required for specifying appropriate materials for various spaces in buildings.

Course Contents:**Unit – I**

Laminates and Veneers: Resin bonded ply wood, types of laminates, laminated wood, insulating boards and other miscellaneous boards, veneers from different varieties of timber, their characteristics and uses MDF & HDF Boards.

Unit – II

Paints and Varnishes: Protective coating, paints, constituents of paints, their functions, water paints, distempers, and cement based paints, emulsion paints, selection of paints, and storage of paints.

Types varnishes (oil and spirit): characteristics and uses of varnishes. French polish, anti-corrosive paint, damp proofing finishes.

Unit – III

Glass and glass products: Composition and fabrication of glass, types of glass, wired glass, fiber glass, rock wool, laminated glass, glass-crete blocks, structural glass, their properties and uses in buildings.

Unit – IV

Plastics: Polymer types, thermo setting and thermo plastics Resins, types of moldings, polymerization and condensation, Composite materials, classification, properties and uses - linoleum, plastic coated paper, reinforced plastic, PVC.

Unit – V

Floorings : Introduction, essential requirements of a floor, factors affecting selection of flooring material, Various natural as well as artificial flooring materials like brick, flag stone, tiled ,cement concrete, granolithic, terrazzo, marble, Shahabad stones timber flooring, timber floor supported on RSJ ,flag stone floor resting on RSJ., vitrified tiles, ceramic tiles, , Mosaic, rubber, Linoleum, and PVC and PVA flooring

Unit – VI

Roof Coverings: Introduction, requirements of good roof technical terms, classification, types of roof coverings for pitched roof. : Roofing tiles and roofing with cement products like A.C. sheet roofs, G.I. Sheets roofs, slates.

Unit – VIII

Special Treatments for Materials and Buildings: Properties and uses of Asbestos, cork, felt, mica, adhesive, Bakelite, china clay, fiber glass, leather, canvass, jute, rubber, Asphalt and Bitumen

Fire resistant, waterproofing, thermal insulation, acoustical treatment and anti-termite treatment.

Reference books:

- **Chowdary, K.P.** Engineering Materials are used in India, 7th ed. Oxford and IBH Pub. Ltd., New Delhi, 1990.
- **Moxley, R. Mitchell**'s Elementary Building Construction, Technical Press Ltd.
- **Rangwala, S.C.** Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.