

AR-114 BUILDING CONSTRUCTION- I :: C-16

Subject Title	:Building Construction - I
Subject Code	:AR-114
Studio Periods/Week	:4
Studio Periods / Semester	:72
Credits	:4
Internal Assignments & Mids	:50 Marks
External Examinations	:50 Marks
Total Marks	:100 Marks
Duration of Exam	:5 Hrs (University Drawing Exam)

TIME SCHEDULE

Sl. No	Major Topics	No. of periods	Weightage of Marks	Short Ans Questions	Essay Questions
			End Exam	End Exam	End Exam
1	Unit-I (Brick Work)	12	10	1	1
2.	Unit – II (Stone Masonry)	12	10	1	1
3.	Unit – III (a) Composite Masonry & (b) Cladding	8	8	-	1
4.	Unit – IV (c) Lintels & (d) Arches	12	18	1	2
5.	Unit – V (e) Ground & Upper floors & (f) Flooring Finishes	16	18	1	2
6.	Unit – VI (Flat Roofs)	12	10	1	1
	Total:	72	74	5	8

- Note:**
1. Duration of examination is for 5 hours Drawing & Theory Examination with no break
 2. Part A: 5 questions – each question carries 2 marks, all 5 to answer and no choice
 3. Part B: 5 questions have to be answered out of 8 questions each question carries 8 marks (3 are choice)

Course Overview:

The course introduces to the methods and techniques of construction of basic elements of a simple building.

Objectives of the Course:

To understand the elementary and simple construction methods, explaining basic principles and considerations in the construction of one roomed rectilinear building with verandah.

Expected Skills / Knowledge Transferred:

To understand the techniques of construction of a simple load bearing structure with simple material like brick, stone etc.

Course Contents:

Unit – I

Brickwork: Various types of bonds, stopped ends, junctions, piers, jambs, footings, foundations, corbelling, damp proof course, window sills, thresholds, copings, mortar joints and pointing.

Unit – II

Stone masonry: stone walls, rubble work, ashlar work, masonry joints, window sills, plinth, cornices, surface finishes.

Unit – III

(a) Composite masonry: Brick backed ashlar, rubble backed ashlar, concrete backed masonry, ashlar faced concrete walls, marble faced masonry; tile faced concrete, hollow block masonry.

(b) Cladding: Cladding of various materials-marble, granite, slate, tiles, metal etc.

Unit – IV

(c) Lintels: Lintels of wood, stone, brick.

(d) Arches: arches; terms defined; various forms of arches like segmental, semi-circular, elliptical, three-centered, flat and relieving arch, etc.

Unit – V

(e) Ground and upper floors: solid floor, brick flooring, floor finishing and floor coverings, Basement floor

(f) Flooring Finishes: Brick on edge, concrete, wood, Indian patent floor, granolithic, terrazzo, pitch mastic, Magnesium Oxide, Chloride, flag stone or shahbad stone flooring, etc.

Unit – VI

Flat roofs: Madras terrace, Jack arch, elementary knowledge about R.C.C roof and floor slabs.

The class work and home assignments should include appropriate site visits by the students. Student will maintain field observations / record books. At least two exercises to be done in the construction yard.

Reference books:

- Barry, R. The Construction of Buildings Vol. 2, 5th ed. East-West Press. New Delhi, 1999.
- Bindra, S P. and Arora, S P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub. New Delhi, 2000.
- Hailey and Hancock, D.W. Brick Work and Associated Studies Vol. 2. MacMillan, London, 1979.
- Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
- Rangwala, S.C. Building Construction, 22nd ed. Charotar Pub. House, Anand, 2004.
- Sushil Kumar. T.B. of Building Construction, 19th ed. Standard Pub, Delhi, 2003.