



School of Planning and Architecture: Vijayawada

(An institution of National Importance under the Ministry of Education, Govt. of India)
Survey No.4/4, ITI Road, Vijayawada-520008, Andhra Pradesh, India

Department of Architecture

Course:	ARC 112 Building Materials and Constructions I	Class: B.Arch 1st Year I-Semester 2026
Instructors:	Section A Dr. Kranti Kumar M. Ar. Komal Gilda Section B Ar. Thushara PT Dr. Tanaya Paul	Internal Assessment: 50 External Theory Exam: 50
Contact Periods/ week:	05 periods.(55 min each)	Total Marks: 100
Time Table:	Tuesday (05 periods)	Credits: 5
Attendance:	Min 75%	
Min. Passing Marks:	50% each in Internal & External	

Objective:

- To understand fundamental building material in the context of various construction methods.
- Focus on various building materials would be emphasized based on the performing standards and codes, wherein application of each material would be discussed in detail, both in the context of historical and contemporary methodology. With time, each topic can also focus on latest trends in practice and usage of new technology/materials. Enhancing the skills in developing a graphical language of architecture and modelmaking.
- Each material would be taught in a manner such that its application would be discussed in a sequential manner, starting from foundation level, followed by plinth & others (sill, lintel, sunshades, window/door openings, walling material, as a floor & flooring) and culminating at roof and parapet wall.

Week	Lecture Plan	Remarks/Topic of Assignment
Week 1 18 th Aug	Unit I: INTRODUCTION ✓ Importance of the subject for Architecture course ✓ Necessary drawing and drafting equipment, Stationery material ✓ Expectations and Learning outcomes	Lecture and Observations
Week 2 25 th Aug	Unit I: INTRODUCTION TO A BUILDING ✓ Parts of a Building – Horizontal and Vertical viz., Foundation, Plinth, Floor, Sill, Lintel, Floor, Column, Beam, Pier, Wall, Openings, Parapet, Stairs etc. ✓ Purpose and role of various parts of the building ✓ Materials used / required for various parts of a Building and for Construction in general ✓ Matrix of Building Parts and Building Materials	Lecture + Studio
Week 3 1 st Sep	Unit II: SAND and CLAY ✓ Physical and Chemical properties ✓ Uses of the materials in Building Industry.	Lecture + Studio
Week 4 8 th Sep	Unit II: STONE and LIME ✓ Physical and Chemical properties ✓ Types and availability of stone and Lime ✓ Manufacturing process of Lime ✓ Uses of the Materials in Building Industry	Lecture + Studio

Week 5 15 th Sep	Study Tour	
Week 6 22 nd Sep	Unit II: METAL ✓ Physical and Chemical properties ✓ Ferrous and Non Ferrous metals Introduction to the Market Survey	Lecture + Studio
Week 7 29 th Oct	Unit II: GLASS ✓ Physical and Chemical properties ✓ Manufacturing of Glass ✓ Types of Glass Uses of the Materials in Building Industry	Lecture + Studio
Week 8 6 th Oct	Unit III: TIMBER ✓ Physical and Chemical properties ✓ Types of Timber ✓ Defects of Timber	Lecture + Studio
Week 9 13 th Oct	Mid Term	
Week 10 20 th Oct	Holiday	
Week 11 27 th Oct	Unit III: TIMBER ✓ Seasoning of Timber ✓ Preservation of Timber ✓ Types of Joints ✓ Uses of the Materials in Building Industry	Lecture + Studio
Week 12 3 rd Nov	Unit IV: CEMENT ✓ Physical and Chemical properties ✓ Types of Cement ✓ Manufacturing of Cement	Lecture + Studio
Week 13 10 th Nov	Unit IV: CEMENT ✓ Manufacturing of Cement ✓ Uses of the Materials in Building Industry	Lecture + Studio
Week 14 17 th Nov	Presentation of the Market Survey	Presentation
Week 15 24 th Nov	Presentation of the Market Survey	Presentation
Week 16 1 st Dec	Revision and Submission of assignments	

S. No.	Stages of Evaluation	Weightage
1	First Assignment: Assignments 1-5	15
2	Mid Term	20
3	Third Assignment: Assignments 6-8	15
	Total	50

References:

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5thEd. New Delhi : East-West Press.
2. Foster, J. and Mitchell, S. (1963). Building Construction: Elementary and Advanced, 17thEd. London : B.T. Batsford Ltd.
3. Hailey and Hancork, D. W. (1979). Brick Work and Associated Studies Vol. II. London : MacMillan.
4. McKay, W. B. (2005). Building Construction Metric Vol. I–IV. 4thEd. Mumbai : Orient Longman.
5. Moxley, R. (1961). Mitchell's Elementary Building Construction. London : B. T. Batsford.

6. Rangwala, S. C. (1963). Building Construction: Materials and types of Construction. 3rdEd. New York : John Wiley and Sons.
7. Chudley, R. (2008). Building Construction Handbook. 7thEd. London : Butterworth- Heinemann.
8. Sushil-Kumar, T. B. (2003). Building Construction. 19thEd. Delhi : Standard Publishers.

Course Instructors: sd/- Section A Dr. Kranti Kumar M. Ar. Komal Gilda Section B Ar. Thushara PT Dr. Tanaya Paul	Head of Department : sd/- (Dr. Amitava Sarkar)
--	--