



School of Planning and Architecture: Vijayawada

(An autonomous institution under Ministry of Education, Govt. of India)
Survey No: 4/4, ITI Road, Vijayawada – 520008, Dist. Krishna, A.P., India

Department of Architecture

Course: **BC-2 Building Materials and Construction II**

Class: **II Semester B.Arch, 2023-24 A.Y**

Instructors: **Dr. Kranti Kumar M, Ar. Renuka W, Ar. Kapil N, Ar. Manali Basu**

Contact Periods/week: **05 [02 Lecture + 03 Studio]**

Internal Assessment Marks: **50**

External Assessment (Theory Examination): **50**

Total Marks: **100**

No of Credits: **05**

Attendance: **75%** Minimum Passing Marks: **50% each in Internal & External Assessment, 50% in Aggregate**

Building Construction - Course Objective

Focus on various building materials and construction techniques would be 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. Emphasis is given on load bearing building construction.

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.

TEACHING PLAN

S.NO	WEEK	TOPIC	REMARKS
1	Week 1	INTRODUCTION <ul style="list-style-type: none">✓ Importance of the Materials and Components to be discussed in the Semester✓ Necessary drawing and drafting equipment, Stationery material✓ Expectations and Learning outcomes Brick Masonry: <ul style="list-style-type: none">✓ Types of bricks✓ Uses of the Materials in Building Industry <u>Drawing Assignment-1</u> : Types of Bricks	Lecture and Observations
2	Week 2	Brick Masonry: <ul style="list-style-type: none">✓ Manufacturing Process✓ Types of Bonds	Lecture + Studio;
3	Week3	Brick Masonry: <ul style="list-style-type: none">✓ Types of Bonds✓ Workshop on Brick Bonds <u>Drawing Assignment-2</u> : Types of Brick Bonds (Header, Stretcher, English, Flemish, T-Junctions and Cross Junctions)	Lecture + Studio Drg. Submission of Assignment -1
4	Week 4	Brick Masonry: <ul style="list-style-type: none">✓ Physical and Chemical properties.	Lecture + Studio

S.NO	WEEK	TOPIC	REMARKS
5	Week 5	Stone Masonry: <ul style="list-style-type: none"> ✓ Geological Classification of stones ✓ Types and availability of stones ✓ Types of Stone Masonry ✓ Uses of the Materials in Building Industry 	Lecture + Studio Drg. Submission of Assignment -2
6	Week 6	TEST – 1	Internal Assessment -1
7	Week 7	Stone Masonry: <ul style="list-style-type: none"> ✓ Properties and application ✓ Preservation of Stones Drawing Assignment-3: Types of Stone Masonry	Lecture + Studio
8	Week 8	Foundations: <ul style="list-style-type: none"> ✓ Purpose of Foundation ✓ Types of Foundation ✓ Methods of Exploration ✓ Testing of soil Drawing Assignment-4: Load bearing Foundations(Stone and Brick)	Lecture + Studio Drg. Submission of Assignment -3
9	Week 9	✓ Site Visit	
10	Week 10	Cement Concrete: <ul style="list-style-type: none"> ✓ Specifications ✓ Types of Concrete ✓ Grades of Concrete ✓ Properties ✓ Equipment's Used ✓ Uses of the Materials in Building Industry 	Lecture + Studio Drg. Submission of Assignment -4
11	Week 11	TEST - 2	Internal Assessment -2
12	Week 12	Roofs and Roof Coverings: <ul style="list-style-type: none"> ✓ Characteristics of Roof ✓ Types of Roofs ✓ Materials used Drawing Assignment-5: Types of Trusses	Lecture + Studio;
13	Week 13	Roofs and Roof Coverings: <ul style="list-style-type: none"> ✓ Types of Trusses 	Drg. Submission of Assignment -5
14	Week 14	TEST - 3	Internal Assessment -3

Tentative Break-up of Internal Assessment Marks

S. No.	Stages of Evaluation	Weightage	Note
1	Drawing Assignments^^ (1)	20	1. The Marks allotted at each stage are tentative 2. New stages or categories of evaluation may be included if and when the need arises
2	Test ##	30	
	Total	50	

Appearing for Test-1,Test-2 and Test-3 is mandatory

^^ Drawing Assignments must be done in the Studio only

Reference Books:

1. Barry, R. (1999). The Construction of Buildings Vol. 2. 5th Ed. New Delhi : East-West Press.
2. Bindra, S.P. and Arora, S.P. (2000). Building Construction: Planning Techniques and Methods of Construction, 19th Ed. New Delhi : Dhanpat Rai Publications.
3. Ching, F. D. K. (2000). Building Construction Illustrated. 3rd Ed. New York : Wiley.
4. Edward, A. and Piano, J. (2009). Fundamentals of Building Construction: Materials and Methods. 5th Ed. Hoboken : John Wiley & Sons.
5. Foster, J. S. (1963). Mitchell Building Construction: Elementary and Advanced. 17th Ed. London : B.T. Batsford Ltd.
6. Hailey and Hancork, D. W. (1979). Brick Work and Associated Studies Vol.II. London : MacMillan.
7. McKay, W. B. (2005). Building Construction Metric Vol. 1–IV, 4th Ed. Mumbai :Orient Longman.
8. Moxley, R. (1961). Mitchell's Elementary Building Construction. London : B. T. Batsford.
9. Rangwala, S. C. (1963). Building Construction: Materials and types of Construction, 3rd Ed. New York : John Wiley and Sons.
10. Rangwala, S. (2004). Building Construction. 22nd Ed. Anand.: Charotar Pub. House.
11. Sushil-Kumar, T. B. (2003). Building Construction, 19th Ed. Delhi : Standard Publishe

Course Instructors:

Sd/-
(Dr.M. Kranti Kumar)

Sd/-
(Ar. Renuka W)

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(Ar. Kapil N)

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(Ar. Manali Basu)