

**Building Planning & Drawing**
**01CI1302**
**Objective of the Course**

Objectives of introducing this subject at second year level in civil branches are:

- To understand the fundamental principles and concepts of planning and architecture for buildings.
- To study about different views of layout.
- To learn the development controls covered by building bye laws and national building code for buildings.

**Credits Earned: 3**
**Students Learning Outcomes**

After studying this subject, students will be able to:

1. Discuss various aspects of principles of planning and architecture in planning building and mass composition.
2. Describe the technical terminologies related to planning and various conventional signs and symbols used in drawing the plans.
3. Prepare working drawings, foundation plans, and other executable drawings with proper details for residential buildings.
4. Sketch perspective, orthographic, cross-sectional, and elevation drawing of the building by imagination.

**Teaching and Examination Scheme**

| Teaching Scheme (Hours) |          |           | Credits | Theory Marks |        |         | Tutorial/ Practical Marks |                | Total Marks |
|-------------------------|----------|-----------|---------|--------------|--------|---------|---------------------------|----------------|-------------|
| Theory                  | Tutorial | Practical |         | ESE (E)      | IA (M) | CSE (I) | Viva (V)                  | Term Work (TW) |             |
| 02                      | 00       | 02        | 03      | 50           | 30     | 20      | 25                        | 25             | 150         |

**Detailed Syllabus**

| Sr. No.                          | Topic Name                                                                               | Hours     |
|----------------------------------|------------------------------------------------------------------------------------------|-----------|
| <b>PART A: BUILDING PLANNING</b> |                                                                                          | <b>16</b> |
| <b>1</b>                         | <b>Introduction:</b>                                                                     | <b>2</b>  |
|                                  | 1.1 Basics of Building, major components and building types.                             |           |
|                                  | 1.2 Preliminary planning concepts of building planning and architectural considerations. |           |

|                                 |                                                                                                                                                                                      |           |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>2</b>                        | <b>Principles of planning:</b>                                                                                                                                                       | <b>4</b>  |
|                                 | 2.1 Requirements of a good building planning.                                                                                                                                        |           |
|                                 | 2.2 Factors affecting building planning.                                                                                                                                             |           |
|                                 | 2.3 Detail study on elements of building planning.                                                                                                                                   |           |
|                                 | 2.4 Sun and building relationship.                                                                                                                                                   |           |
|                                 | 2.5 Types of basic services in buildings: Brief introduction                                                                                                                         |           |
| <b>3</b>                        | <b>Building Bye-laws:</b>                                                                                                                                                            | <b>4</b>  |
|                                 | 3.1 Role, need, and importance of building bye-laws.                                                                                                                                 |           |
|                                 | 3.2 Structuring of bye-laws: Inclusion of National Building code and legal aspects.                                                                                                  |           |
|                                 | 3.3 Scope of bye-laws and                                                                                                                                                            |           |
|                                 | 3.3 Case study of bye-laws of a local authority.                                                                                                                                     |           |
| <b>4</b>                        | <b>Planning of buildings:</b>                                                                                                                                                        | <b>6</b>  |
|                                 | 4.1 Functions of building according to types.                                                                                                                                        |           |
|                                 | 4.2 Planning aspects of a residential building.                                                                                                                                      |           |
|                                 | 4.3 List of components and functions of a residential building.                                                                                                                      |           |
|                                 | 4.4 Area requirements and arrangement for various components.                                                                                                                        |           |
|                                 | 4.5 Minimum dimensions and standards as per bye-laws.                                                                                                                                |           |
|                                 | 4.6 Introduction to plans and sketches of building components.                                                                                                                       |           |
|                                 | 4.7 Case studies of planning of Commercial buildings, Hospitals and Educational buildings.                                                                                           |           |
| <b>PART B: BUILDING DRAWING</b> |                                                                                                                                                                                      | <b>12</b> |
| <b>1</b>                        | <b>Building Drawings:</b>                                                                                                                                                            | <b>6</b>  |
|                                 | 1.1 Meaning, need and importance of building drawings.                                                                                                                               |           |
|                                 | 1.2 Types of building drawings, standard sizes, scales, formats, line types and hatching.                                                                                            |           |
|                                 | 1.3 Information to be included in a typical building drawing.                                                                                                                        |           |
|                                 | 1.4 List of common types of standard symbols.                                                                                                                                        |           |
|                                 | 1.5 Case study of a typical standard residential building drawing: list of drawings, detailing requirements, importance of a particular types and interpretation of drawing on site. |           |
|                                 | 1.6 Case study of a typical standard public building drawing: list of drawings, detailing requirements, importance of a particular types.                                            |           |
| <b>2</b>                        | <b>Developing the building drawing (Drawing exercises)</b>                                                                                                                           | <b>6</b>  |
|                                 | 2.1 Drawing exercise of a scaled residential building: Plans, Elevations and Sections in standard formats.                                                                           |           |
|                                 | 2.2 Perspective, Isometric and orthographic drawing of a building                                                                                                                    |           |
| <b>Total</b>                    |                                                                                                                                                                                      | <b>28</b> |

**Laboratory Work Contents**

1. Symbols for Materials of Construction
2. Symbols for Sanitation and Water Supply Installation
3. Symbols for types of Shutters of Doors
4. Symbols for Furniture
5. Symbols for Electric Fitting
6. Miscellaneous Symbols
7. Objectives, Scope and Applicability as per Local (GDCR) and National authority (NBC).
8. Aspect, Prospect, Privacy, Circulation, Roominess
9. Grouping, Elegance, Sanitation, Flexibility, Economy.
10. Residential plan
11. Prospective: Staircase
12. Prospective: Security Cabin
13. Components of Hospital Buildings
14. Components of Post Office Buildings

**Drawing Sheets (A1 Size)**

- Residential Planning: Two storied Building: Plans, elevation, section, lay-out plan, key plan, site plan, area table, schedule of opening. Scale-1:100. (Furniture plan, Drainage lay out, Toilet Detail, Wood work detail, Kitchen detail, Electrical plan etc).
- Perspective Drawing: Two point perspective drawing.

**Suggested Theory Distribution**

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

| Distribution of Theory for course delivery and evaluation |            |       |         |          |        |
|-----------------------------------------------------------|------------|-------|---------|----------|--------|
| Remember                                                  | Understand | Apply | Analyze | Evaluate | Create |
| 5%                                                        | 50%        | 40%   | 5%      | 00%      | 00%    |

**Instructional Method and Pedagogy**

1. Prerequisite of the course and its pattern shall be discussed on the commencement of the course.
2. Lectures shall be conducted in class room using various teaching aids.
3. Presence in all academic sessions is mandatory which shall carry 5% marks of the total internal evaluation.
4. At the end of each unit/topic an assignment based on the course content shall be given to the students which shall carry 5% weightage for timely completion and submission of the assigned work.
5. The laboratory experiments are planned in such a way that it covers the practical aspects of the course contents. The performance of these experiments shall bring the clarity of the theoretical concepts which the students have studied during the academic sessions.

**Recommended Study Material**

1. Planning, designing building by Y. S. Sane, Allies Book Stall
2. Building Drawing by M. G. Shah, C. M. Kale and S. Y. Patki, Tata Mc Graw Hill, New Delhi
3. Building Planning, Designing and scheduling by Gurucharan Singh, Standard Book House, New Delhi National Building Code-2005, New Delhi Ss
4. National Building Code-2005, New Delhi
5. GDCR: General Development control regulations published by RMC and RUDA.
6. General Development Control Regulations published by AUDA and GICEA