01CI0302: Building Planning and Drawing

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: 4

Students Learning Outcomes

After studying this subject students will be able to:

- Interpret the technical terminologies related to planning and various conventional signs and symbols used in drawing the plans
- Draw plan for building (Mass Composition, Residential, Industrial and Public) by making use of various aspects of principles of planning, architecture and as per standard bye laws
- Draw perspective, isometric, orthographic, cross-sectional and elevational drawing of the building by imagination
- Draw, edit and print the plan of the building by using computer application like AutoCAD

Teaching and Examination Scheme

Subject Name	Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
	Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Internal (I)	Viva (V)	Term Work (TW)	
Building Planning & Drawing	2	0	2	3	50	30	20	25	25	150

Sr. No.	Topic Name	Hours
PART A: BUILDING PLANNING		**16**
1	**Introduction:**	**2**
	1.1 Basics of Building, major components and building types.	
	1.2 Preliminary planning concepts of building planning and architectural considerations.	
2	**Principles of planning:**	**4**
	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	
3	**Building Bye-laws:**	**4**
	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.	
4	**Planning of buildings:**	**6**
	4.1 Functions of building according to types.	
	4.2 Planning aspects of a residential building.	
	4.2.1 List of components and functions of a residential building.	
	4.2.1 Area requirements and arrangement for various components.	
	4.2.2 Minimum dimensions and standards as per bye-laws.	
	4.3 Introduction to plans and sketches of building components.	
	4.4 Case studies of planning of Commercial buildings, Hospitals and Educational buildings.	
PART B: BUILIDING DRAWING		**12**
1	**Building Drawings:**	**6**
	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.	
2	**Developing the building drawing (Drawing exercises)**	**6**
	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	
	Total	**42**

Laboratory Work Contents

Sr. No.	Topic Name	Hours
1	**Signs and Symbols:** 2.1 Symbols for Materials of Construction 2.2 Symbols for Sanitation and Water Supply Installation 2.3 Symbols for types of Shutters of Doors 2.4 Symbols for Furniture 2.5 Symbols for Electric Fitting 2.6 Miscellaneous Symbols	**6**
2	**Building Bye Laws:** 2.1 Objectives, Scope and Applicability as per Local (GDCR) and National authority (NBC).	**2**
3	**Application - Principles of planning:** 3.1 Aspect, Prospect, Privacy, Circulation, Roominess 3.2 Grouping, Elegance, Sanitation, Flexibility, Economy.	**4**
4	**Perspective Drawing:** 4.1 Staircase 4.2 Security Cabin	**2**
5	**Components of Building:** 5.1 Components of Hospital Buildings 5.2 Components of Post Office Buildings	**2**
6	**Practicing for Different drawings – Manual Drawing and Software Application** 6.1 Residential plan 6.2 shopping or commercial center 6.3 Educational building plan or Institutional building plan	**12**
	TOTAL	**28**

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%

List of Experiment & Projects

- Individually students have to maintain a sketch book.
- Students have to maintain soft copy of different plans individually, and final plan needs to be submitted in hard copy group wise.
- Under the Practice plan, 2 hours will be allocated for planning and remaining time will be allocated for application of software.

Drawing Sheets (A1 Size)

1. 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).
2. Public Building: Ground Floor plan, typical floor plan, elevation, section, lay-out plan, key plan, site plan, area table, schedule of opening.
3. Perspective Drawing: Two point perspective drawing.

Assignments

1. Assignment -1: Principles of planning.
2. Assignment -2: National building code and local bye-laws.
3. Assignment -3: Building drawings.

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