

2/4 B.Tech. FOURTH SEMESTER

CE4T5

BUILDING PLANNING AND DRAWING

Credits: 3

Lecture : 1 periods/week
Practice: 3 periods/week

Internal assessment: 30 marks
Semester end examination: 70 marks

Pre-requisites: Building materials and constructions, engineering drawing

Learning objectives:

- To visualize, sketch and accurately draw shapes and objects to communicate information to specific audiences
- To interpret, design, produce and evaluate a variety of graphical presentations using a range of manual based techniques
- To use graphical conventions, standards and procedures in the design.

Course outcomes:

At the end of course the student will be able to:

1. Apply the building byelaws and regulations for planning a building
2. Plan the individual rooms in residential buildings and public buildings with reference to functional and furniture requirements
3. Develop the skills of drawing sign conventions and bonds
4. Prepare working drawings for individual components like doors and windows etc.
5. Develop the skills of drawing plans, sections and elevations of different houses and various buildings with the given data

PART-A

UNIT – I

PRINCIPLES OF PLANNING OF A BUILDING

Aspect-Prospect - Privacy-Furniture requirement – Roominess – Grouping – Circulation – Sanitation -Lighting - Ventilation-Cleanliness-Flexibility-Elegance-Economy-Practical Considerations

BUILDING BYELAWS AND REGULATIONS:

Introduction – Terminology – Objectives of building byelaws – Floor Area Ratio (FAR) – Floor Space Index (FSI) – Principles underlying building byelaws – classification of buildings – Open space requirements – built up area limitations – Height of Buildings – Wall thickness – lighting and ventilation requirement.

UNIT – II

RESIDENTIAL BUILDINGS:

Minimum standards for various parts of buildings – requirements of different rooms and their grouping – characteristics of various types of residential buildings.

PUBLIC BUILDINGS:

Planning of Educational institutions, hospitals, dispensaries, Office buildings, banks, industrial buildings, hotels and motels, buildings for recreation.

PART-B

UNIT –III

SIGN CONVENTIONS AND BONDS:

Brick, Stone, Plaster, Sand filling, Concrete, Glass, Steel, Cast iron, Copper alloys, Aluminum alloys etc., Lead, Zinc, tin, white lead etc., Earth, Rock, Timber and Marble. English bond & Flemish bond odd & even courses for one, one and half, two and two and half brick walls in thickness at the junction of a corner.

UNIT - IV

DOORS, WINDOWS, VENTILATORS AND ROOFS:

Paneled Door – paneled and glazed door, glazed windows – paneled windows – Swing ventilator – Fixed ventilator-Couple roof – Collar roof – Kind Post truss – Queen post truss.

UNIT – V

PLANNING OF BUILDINGS:

Draw the line diagrams and plans for the following as per National Building Code.

- a) Single storied residential building
- b) Primary School Building
- c) Primary Health Centre
- d) Commercial Building

DRAWING OF BUILDINGS:

Preparation of plan, elevation and section of residential buildings-single storey (load bearing structures), double storey (R.C.C.Framed structure) by using principles of planning and local building bye- laws.

FINAL EXAMINATION PATTERN:

The end examination paper should consist of Part A and Part B. Part A consist of five questions in planning portion out of which three questions are to be answered. Part B should consist of two questions from drawing part out of which one is to be answered in drawing sheet. Weight age for Part – A is 60% and Part- B is 40%.

Learning resources

Text books:

1. Building planning designing and scheduling, (5th Edition) by Gurucharan Singh and Jagadish Sing, Standard Publications Distributers, Delhi, 2010.
2. Building planning and drawing, (3rd edition) by Kumara Swami N., Anand Charotar Publishing House Pvt Ltd, 2010.
3. PERT and CPM, (4th edition) by Dr. Punmia, B.C. and Khandelwal, Laxmi Publications, 2009.

Reference books:

1. Building byelaws by state and Central Governments and Municipal corporations, 2011.
2. 'A' Series & 'B' Series of JNTU Engineering College, Anantapur, 2012.

e-learning resources:

<http://nptel.ac.in/courses.php>

<http://jntuk-coeerd.in>