



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering

Subject Code: 3130609

Semester – III

Subject Name: Building and Town Planning

Type of course: Civil Engineering

Prerequisite: Elements of drawing, primary knowledge of surveying, leveling and computer

Rationale: A Civil Engineer has to be conversant with building and town planning and their development controls, skill of preparing drawings of various types like, orthographic, perspective, working drawings etc. using software application

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	ESE (V)	PA (I)		
2	0	4	4	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Introduction to buildings, detailed study of Principles of building planning (with case study), Orientation of building, Principles of architecture composition, Fundamentals of Building Information Modelling (BIM)	05
2	Building by-laws as per National Building Code, Building by-laws of local authority, Standards for Residential, Public, Commercial, Industrial And Institutional Buildings Planning, Planning of Earth Quake Resistant Building, overview of RERA (Real Estate Regulatory Authority) and ODPS (Online Development Permission System)	05
3	Elements of Building Drawing, Planning and Preparing working drawing of Residential Building with scale proportion, Layout of Public Building, Industrial Building etc., Methods of making line drawing and detailed drawing. Site plan, floor plan, elevation and section drawing of small residential buildings. Foundation plan. Roof drainage plans. Provision of Building services (like water supply, drainage, electrification, etc.), software application in building planning and building Drawing for 2D model generation,	05
4	Elements of perspective views, Types of perspective views, software application in building planning and building Drawing for 3D model generation	04
5	Historical aspects and origin of Town Planning in the World and in India, Necessity of Civic surveys for Planning purpose, types, data and its presentation and analysis, Fundamental principles of Town Planning. Use of GIS tools for Town Planning.	04
6	Components of town such as Land use, Zones, Road Network, CBD, Neighbourhood planning, Development controls for new town planning schemes for growth negotiation, Formation of Slums, Causes of Slum formation, remedial measures for avoiding slum	05



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formation, Slum Clearance and Rehabilitation.	
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Suggested Specification table with Marks (Theory): (For BE only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10%	40%	30%	5%	5%	10%

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

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
4. Architecture- Form, Space and Order by Francis D.K. Ching
5. Architectural Graphics by Francis D.K. Ching
6. National Building Code of India - 2016: Vol.-1 & Vol.-2, Bureau of Indian Standards, New Delhi
7. General Development Control Regulations published by Development Authority
8. Town Planning by G. K. Hiraskar
9. Town Planning by S.C. Rangwala, Charotar publishing House, Anand
10. Corresponding set of CAD Software Theory and User Manuals.
11. Guide to RERA with RERA check list by Texman publications.

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Comprehend local building bye-laws and provisions of National Building Code in respect of building and town planning resulting in functionally efficient, economically viable and legally acceptable buildings.	30 %



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CO-2	Discuss and apply various aspects of principles of building planning and town planning	10%
CO-3	Understand and implement various aspects of Principles of Architectural composition	10%
CO-4	Explain the principles of planning and design considerations to construct earthquake resistant building	15%
CO-5	Understand, interpret and prepare working drawings, foundation plans, perspective drawing and other executable drawings and prepare the drawing using software	35%

List of Experiments:

Term Work:

(A) Four A1 Size Drawing sheet (Hand drafted) and one Print of 2D & 3D model:

- (1) Residential Planning: Two storied Building: Plans, elevation, section, lay-out plan, key plan, site plan, area table, schedule of opening. Scale-1:100.
- (2) Working Drawing: sheet should accommodate min. six types with sectional details of Sheet -1 Planning. (Furniture plan, Drainage lay out, Toilet Detail, Kitchen detail, Electrical plan etc.)
- (3) Perspective Drawing: Two point perspective of Sheet -1 Planning.
- (4) Public Building: Ground Floor plan, typical floor plan, elevation, section, lay-out plan, key plan, site plan, area table, schedule of opening.
- (5) Prepare Building Drawing (2D, 3D model) of Sheet -1 Planning using Software

(B) Assignments:

- (1) Assignment -1: Principles of Planning & Architecture
- (2) Assignment -2: Building Bye laws
- (3) Assignment -3: Town Planning
- (4) Assignment -4: Different commands of CAD/Software



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List of Open Source Software/learning website:

FreeCAD, Fusion 360, Onshape, nanoCAD, OpenSCAD, 3D Slash, LibreCAD, DraftSight, QCAD, QGIS

List of Software:

AutoCAD, Revit, SketchUp, SketchUp, Civil 3D, SmartDraw, Draft it, Floorplanner, RoomSketcher, PlanningWiz, Roomle, 3D Max, Tekla,