

**B. Tech. II Semester III**

**Subject Name:** Building and Town Planning

**Subject Code:** BTCL13301

**Type of course:** PCC-III

**Prerequisite:** Principles and regulations of building and town planning, primary knowledge of various types of building planning.

**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				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	150
3	0	2	4	60	25	15	30	20	

**CA1:** Continuous Assessment (assignments/projects/open book tests/closed book tests) **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CA3:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

**Content:**

Sr. No.	Topics	Teaching Hrs.	Module Weightage (%)
1.	<b>Approach of Building Planning:</b> 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)	5	10
2.	<b>Building Regulations:</b> Building by-laws as per National Building Code, Building by-laws of local authority, GDCR, Standards for Residential, Public, Commercial, Industrial And Institutional Buildings Planning, Planning of Earthquake Resistant Building, overview of RERA (Real Estate Regulatory Authority) and ODPS (Online Development Permission System)	5	10
3.	<b>Planning for Residential and Non Residential Building:</b> Plan preparation for residential units - Structure, space forms and analysis- Activity space - Elements of human scale - Size and dimension decisions - Furniture layouts, Approach of activity analysis for public buildings, hostels, schools, offices, primary health centers - Space norms, basic areas, functional setting areas	10	30

**PCC-III: Professional Core Course**

4.	<b>Building Drawing</b> Key plan - Site plan and working drawings - Perspective drawings - Foundation and plumbing layouts - Building drawing softwares	5	10
5.	<b>Introduction of Town Planning</b> History of Town Planning - Definitions and Objectives of Planning - Examples of planned and unplanned cities - Retrofitting medieval towns and existing cities - Healthy city planning, 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.	7	20
6.	<b>Components of Town:</b> 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 formation, Slum Clearance and Rehabilitation.	5	10
7.	<b>Smart Cities:</b> Smart city developments across the world - Specific priorities for Smart Cities in India - Leveraging recent technologies in enhancing urban living: internet of things (IoT) - Recreation -Renewable energy - Green corridors, green space and green buildings - Safety and security of urban population	5	10

**Suggested Specification table with Marks (Theory/Practical):**

% Distribution of 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, **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 Text Books:**

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	Planning, designing building	Y. S. Sane	Allies Book Stall	1990	2 <sup>nd</sup>
2	Building Drawing	Shah M. G. Kale C. M., and S. Y. Patki	Tata Mc-Graw Hill Pub. Co. Ltd, New Delhi	1997	5 <sup>th</sup>
3	General Development	SUDA, Surat.	-	2006	-

	Control Regulations				
4	Architectural Design	Ernest Pickering	Literary Licensing, LLC	September, 2013	1 <sup>st</sup>
5	National Building Code of India	Bureau of Indian Standards	-	2016	Vol.-1 & Vol.-2
6	Town Planning	G. K. Hiraskar	Dhanpat Rai Publication	January, 2018	2 <sup>nd</sup>
7	Guide to RERA with RERA checklist	-	Texmann publications	September, 2017	3 <sup>rd</sup>
8	Town Planning	S.C. Rangwala	Charotar publishing House, Anand	January 2013	-

**Course Outcome:**

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % weightage
CO-1	Understanding the approach and process of planning of residential and nonresidential buildings (R,U,A - Cognitive Level)	20%
CO-2	Understand the building planning principles of building designs (R,U,E - Cognitive Level)	20%
CO-3	Understand the prevailing regulations & Bye-Laws (R,U,E,N,A - Cognitive Level)	20%
CO-4	Describe the importance of proper town planning for a healthy city (R,U,A,C, - Cognitive Level)	20%
CO-5	Explain the steps involved in planning of a city using remote sensing and GIS (R,U,A,E,C,N- Cognitive Level)	20%

**Mapping with POs:**

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO-1	1	3	3	1	1	2	1	1	2	2	1	3	2	2	1
CO-2	1	2	2	1	1	2	3	2	3	2	3	2	3	3	3
CO-3	2	1	2	1	1	3	2	3	1	2	1	3	2	1	3
CO-4	1	1	3	1	2	3	3	1	3	2	3	1	3	3	2
CO-5	1	2	3	3	3	1	2	1	3	1	2	3	3	3	2

<b>Rationale*</b>	6	9	13	7	8	11	11	8	12	9	10	12	13	12	11
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**Rationale\*:**

All the COs are satisfying the well-defined POs and PSOs upto certain extent. Building and town planning subject will help to do development controls, skill of preparing drawings of various types like, orthographic, perspective, working drawings etc. using manually as well as software application.

**LIST OF PRACTICALS:**

**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

**Major Equipment:**

1. Computers
2. Softwares related to planning

**List of Open Source/learning website:**

- <http://tcpo.gov.in/>
  - Detail of regulations of town planning
- <https://gujrera.gujarat.gov.in/>
  - Detail of RERA and ODPS
- <https://www.sudaonline.org/gdcr/>
  - Detail of Building general Development Control Regulation

**List of Open Source Software:**

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