



# GUJARAT TECHNOLOGICAL UNIVERSITY

**Bachelor of Civil and Infrastructure Engineering**  
**Subject Code: 3154011**

**Semester – V**  
**Subject Name: Building and Town Planning**

**Type of course:** Professional Elective Course

**Prerequisite:** Preliminary knowledge of Building drawing.

### **Rationale:**

After food and clothing, the residential building is the most essential requirement for human being. Its planning, designing and construction are important stages to be considered for safe, economic and elegant structures. Besides the buildings other than residential are also having almost similar considerations. The job of planning, designing and construction is done effectively by Civil Engineers and Architects, by following the guiding standard principles of planning and architecture. It is also necessary to provide healthy, comfortable and pleasant living environment to society by better town planning. Keeping in view these points, this subject is framed to provide knowledge of principles of planning and architecture, building bye-laws and town planning. Moreover, building drawing skill of students may also be enhanced with this subject. State-of-the-art rules and regulations of multi storeyed buildings and public buildings, concept of earth quake resistant buildings, smart cities are also included in this subject.

### **Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	ESE (V)	PA (I)		
3	0	2	4	70	30	30	20	150

### **Content:**

Sr. No.	Content	Total Hrs
1	<b>Building Planning:</b> <ul style="list-style-type: none"><li>• Study of general principles of Planning and Architecture.</li><li>• Typical Building Byelaws as per National Building Code and General Development Control Regulation.</li><li>• Planning of residential buildings, Public buildings and Multi- storied structure.</li></ul>	11
2	<b>Preparation of Drawings:</b> <ul style="list-style-type: none"><li>• Perspective views, one point and two point problems, drawings.</li><li>• Planning of Earthquake resistant buildings considering symmetry, simplicity, continuity, staircase, water tank etc.</li><li>• Preparing Working Drawings of Residential and Public Buildings. Various types, Scale selection, Material description, Utilities like water supply, drainage lines, rain water harvesting arrangements, gas supply lines, electric and internet installations, air</li></ul>	10



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	conditioning, solar panels.	
3	<b>Town &amp; Infrastructure Planning:</b> <ul style="list-style-type: none"><li>• Origin and Growth of towns, Satellite Town, Ribbon development</li><li>• Definitions of town planning and urban design, levels of planning and steps for preparation of a town plan, survey techniques in planning and urban design, concepts, functions, components and preparation of a development plan.</li><li>• Elements of City Planning, Circulation, Zoning and land use, Housing, Landscape pattern, Master plan, Town Center, Civic centers, Shopping Center, Town Planning Schemes, CBD.</li></ul>	11
4	<b>Urban area planning:</b> <ul style="list-style-type: none"><li>• Urban Design principles and criteria, Urban Scale and Spaces. Design for the Pedestrians. Waterfront Development. Principles of Urban Conservation. Principles of Streetscape Design. Urban design regulations and control, the comprehensive role of urban design in town planning process.</li><li>• Slum: definition, Slum improvements.</li><li>• Introduction to Smart City, its Characteristics as per present scenario.</li></ul>	10

### Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	30	15	5	20

**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:

- Building drawing by M.G.Shah, C.M. Kale and S.Y.Patki, Tata Mcgraw Hill, New Delhi
- Building planning, designing and scheduling by Gurcharan Singh, Standard Book House. New Delhi
- Planning and designing building by Y.S. Sane, Allies Book Stall.
- Town Planning by G.K.Hiraskar, Dhanpatrai & Sons Delhi.
- National Building Code-2005 , New Delhi.
- Town Planning by S.C. Rangwala, Charotar Publishing House, Anand.
- General Development Control Regulations published by AUDA and GICEA
- Peter Hall and M.Tewdwr-Jones, Urban and regional planning, Routledge, Fifth Edition, 2010



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- Peter Hall, Urban and regional planning, Routledge, 4th Edition, 2002
- K. V. Sundaram, Urban and regional planning in India, Vikas Pub. House, Fifth Edition, 1977

**Course Outcomes:** After completion of this subject, students will be able to

Sr. No.	CO statement	Marks % weightage
CO-1	Understand principles of building planning and architecture	10
CO-2	Plan different types of residential and public buildings considering building bye-laws	20
CO-3	Derive the plan, elevation, sectional elevation, perspective view of different types of residential and public buildings for given conditions	40
CO-4	Understand concepts, principles, necessity and components of town planning and smart city	30

### Term Work:

(A) Four A1 Size Drawing sheet:

- (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) Public Building: Ground Floor plan, typical floor plan, elevation, section, lay-out plan, key plan, site plan, area table, schedule of opening.
- (3) Working Drawing: sheet should accommodate min. six types with sectional details. (Furniture plan, Drainage lay out, Toilet Detail, Wood work detail, Kitchen detail, Electrical plan etc.)
- (4) Perspective Drawing: Two point perspective of sheet -1 planning.

(B) Assignments:

- (1) Assignment -1: Principles of Planning & Architecture
- (2) Assignment -2: Building Bye laws
- (3) Assignment -3: Town Planning

**Major Equipment: Nil**