

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2021 (COGC-2021)

IV– Semester

Course Title: **TOWN PLANNING**

(Course Code: 41046303)

Diploma programme in which this course is offered	Semester in which offered
Architecture	FOURTH

1. RATIONALE

The area of Town Planning encourages the incentive of improving living environments with the goal of making the world a better place. Whether this is for sustainable, economic or aesthetical reasons, this course is designed to create awareness among a learner for improving our essentially urban, planned and built environment.

This course is developed to acquaint the learner with the evolution, relevance and application of town planning. It is necessary for learner to realize and expand their knowledge regarding town planning. They should also be aware of its origin and the factors leading towards the development of a modern town. Student will gain awareness of tools of town planning prevalent in the modern world.

2. COMPETENCY

The course content should be taught and implemented with the aim to develop different types of skills leading to the achievement of the following competency:

- **Understanding and appreciation of towns and their components with respect to planning concepts**

3. COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge and the relevant soft skills associated with this competency are to be developed in the student to display the following COs:

- a) Characterize the elements of town planning.
- b) Identify different components of a town from its development plan.
- c) Recognized various elements of residential, industrial, public building and open spaces.
- d) Identify various components of road networks.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
L	T	P	C	CA	ESE	CA	ESE	Total Marks
2	-	-	2	30*	70	0	0	100

(*): Out of 30 marks under the theory CA, 10 marks are for assessment of the micro-project to facilitate integration of COs and the remaining 20 marks is the average of 2 tests to be taken during the semester for the assessing the attainment of the cognitive domain UOs required for the attainment of the COs.

Legends: *L*-Lecture; *T* – Tutorial/Teacher Guided Theory Practice; *P* -Practical; *C* – Credit, *CA* - Continuous Assessment; *ESE* -End Semester Examination.

5. SUGGESTED PRACTICAL EXERCISES

The following practical outcomes (PrOs) that are the sub-components of the COs. *Some of the PrOs marked “*” are compulsory, as they are crucial for that particular CO at the ‘Precision Level’ of Dave’s Taxonomy related to ‘Psychomotor Domain’.*

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
Not Applicable			

Note

- i. *More Practical Exercises can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The above table is only a suggestive list.*
- ii. *The following are some sample ‘Process’ and ‘Product’ related skills(more may be added/deleted depending on the course)that occur in the above listed Practical Exercises of this course required which are embedded in the COs and ultimately the competency..*

S. No.	Sample Performance Indicators for the PrOs	Weightage in %
Not Applicable		

6. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

These major equipment with broad specifications for the PrOs is a guide to procure them by the administrators to usher in uniformity of practical in all institutions across the state.

S. No.	Equipment Name with Broad Specifications	PrO.No.
Not Applicable		

7. AFFECTIVE DOMAIN OUTCOMES

The following *sample* Affective Domain Outcomes (ADOs) are embedded in many of the above mentioned COs and PrOs. More could be added to fulfil the development of this competency.

- a) Work as a leader/a team member.
- b) Follow ethical practices.
- c) Participates in class discussions.

The ADOs are best developed through the laboratory/field based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl’s ‘Affective Domain Taxonomy’ should gradually increase as planned below:

- i. ‘Valuing Level’ in 1st year
- ii. ‘Organization Level’ in 2nd year.
- iii. ‘Characterization Level’ in 3rd year.

8. UNDERPINNING THEORY

Only the major Underpinning Theory is formulated as higher level UOs of *Revised Bloom's taxonomy* in order development of the COs and competency is not missed out by the students and teachers. If required, more such higher level UOs could be included by the course teacher to focus on attainment of COs and competency.

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
Unit — 1 Basics of Town planning	1a. Describe the evolution of town planning. 1b. Differentiate the stages in town development. 1c. Explain the present position of town planning in India. 1d. Explain the Objects, Principles and Necessity of Town Planning. 1e. Describe the origin and growth of towns. 1f. Differentiate between forms of planning. 1f. Explain features in a modern town plan.	1.1 Introduction – Evolution, Stages in Town Development, Present position of town planning in India 1.2 Objects, Principles and Necessity of Town Planning 1.3 Origin and Growth of Towns. 1.4 Forms of Planning 1.5 Distribution of Land Uses 1.6 Features embodied in a modern town plan
Unit— 2 Development Plan, Zoning & Town Planning Schemes	2a. Describe the aspects involved in Development Plan 2b. Provide the various features of Zoning 2c. Develop awareness of Town Planning Schemes. 2d. Demonstrate the Planning of Planned cities with the help of neat sketch.	2.1 Development Plan or Master Plan <ul style="list-style-type: none"> • Definition, Objects and Necessity of Development Plan • Data to be collected and Drawings to be prepared • Stages of Preparation of Development Plan 2.2 Zoning <ul style="list-style-type: none"> • Objects, Principles, Advantages and Importance of Zoning • Aspects of Zoning 2.3 Town Planning Schemes <ul style="list-style-type: none"> • Definition & Basic concept of Town Planning Schemes • Introduction of the Gujarat Town Planning & Urban Development Act, 1976 2.4 Planned Cities <ul style="list-style-type: none"> • Chandigarh • Gandhinagar, Gujarat • GIFT City, Gujarat

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
Unit—3 Town components	3a. Explain various aspects of Housing 3b. Clarify various features of Open spaces. 3c. Describe the facts relating to the industrial areas of a town. 3d. Explain different aspects of Public buildings with emphasis on Town Center	3.1 Housing & Slums <ul style="list-style-type: none"> • Classification of Residential Building • Requirement & Design of Residential Areas • Agencies for housing • Slums & Causes of Slums • Characteristics of slums • Prevention of slum formation 3.2 Parks and Playgrounds <ul style="list-style-type: none"> • Types of Recreation • Classification of Parks • Location of Urban Green Spaces & Green belts 3.3 Industries <ul style="list-style-type: none"> • Classification of Industries • Concentration of Industries • General requirement of Industries • Measures to control location of Industries 3.4 Public Buildings <ul style="list-style-type: none"> • Location of public buildings • Town Centres • Grouping of Public Buildings
Unit — 4 Urban Roads & Traffic Management	4a. Explain various aspects of Urban roads. 4b. Describe with sketches types of street systems. 4c. Explain different features of Traffic management 4d. Illustrate categories of road junctions with sketches. 4e. Awareness about other urban transport systems	4.1 Urban Roads <ul style="list-style-type: none"> • Objects and requirements of a good city road • Factors to be considered while designing town road • Classification of urban roads 4.2 Types of street systems 4.3 Other type of roads — Through and Bypass roads, Outer and Inner ring roads, Expressways, Freeways. 4.4 Traffic Management <ul style="list-style-type: none"> • Objects of Traffic management • Traffic Congestion, Control and Problems • Principles to be

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
		<p>observed in the design of Road Junctions</p> <p>4.5 Road junctions and Intersections</p> <ul style="list-style-type: none"> • General Principles for Design of Road Junctions • Categories of Road Junctions <p>4.6 Other urban transport systems</p> <ul style="list-style-type: none"> • Rapid Transit Systems (Bus & Rails) • Metro Rails • Tram

Note: The UOs need to be formulated at the 'Application Level' and above of Revised Bloom's Taxonomy' to accelerate the attainment of the COs and the competency.

9. SUGGESTED SPECIFICATION TABLE FOR QUESTIONPAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A	Total Marks
I	Basics of Town planning	06	08	06	00	14
II	Development Plan, Zoning & Town Planning Schemes	08	12	06	04	22
III	Town components	06	08	04	00	12
IV	Urban Roads & Traffic Management	08	12	02	08	22
Total		28	40	18	12	70

Legends: R=Remember, U=Understand, A=Apply and above (Revised Bloom's taxonomy)

Note: This specification table provides general guidelines to assist student for their learning and to teachers to teach and question paper designers/setters to formulate test items/questions assess the attainment of the UOs. The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary slightly from above table.

10. SUGGESTED STUDENT ACTIVITIES

Following is the list of proposed student activities like: course/topic based seminars, internet based assignments, teacher guided self-learning activities, and course/library/internet/lab based Mini-Projects, etc. These could be individual or group-based. i) Visit historical sites and draw sketches of monuments and surroundings ii) Interactive sketching workshops with other institutes iii) Visit art exhibitions iv) Undertake a visit of planned and unplanned Town/City.

11. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

- Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
- Guide student(s) in undertaking micro-projects.
- Different types of teaching methods that are to be employed by teachers to develop the outcomes.
- About **20% of the topics/sub-topics** which are relatively simpler or descriptive in nature is to be given to the learners for **self-learning**, but to be assessed using different assessment methods.

12. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-projects are group-based. However, in the fifth and sixth semesters, it should be preferably be **individually** undertaken to build up the skill and confidence in every student to become problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should **not exceed three**.

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than **16 (sixteen) student engagement hours** during the course. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. This has to match the competency and the COs. Similar micro-projects could be added by the concerned course teacher:

- Document the historical town and its town planning (Duration: 8-10 hours)**
- Study the report of development plan of Indian cities.**
- Make presentation on modern town planning and urban planning project i.e Smart cities, Riverfront, Urban Transport etc.**

13. SUGGESTED LEARNING RESOURCES

S. No.	Title of Book	Author	Publication with place, year and ISBN
1	Town Planning	S.C.Rangwala	Charotar Publishing house Pvt.Ltd.,Anand,2015,ISBN:978-8192869285
2	Fundamentals of Town Planning	G.K. Hiraskar	Dhanpat Rai Publication,2018,ISBN: 978-8189928896
3	Urban Planning in India	Amiya Kumar Das	Rawat Pubns,2007,ISBN: 978-8131600948

14. SOFTWARE/LEARNING WEBSITES

- <https://mohua.gov.in/>
- <https://udd.gujarat.gov.in/ctp.php>
- <http://tcpo.gov.in/>

- d) <https://www.sudaonline.org>
 e) <https://www.suratmunicipal.gov.in>
 f) <https://auda.org.in>
 g) <https://www.adb.org/sites/default/files/publication/539736/adbi-wp1037.pdf>
 h) <https://hcp-com.b-cdn.net/wp-content/uploads/2021/06/7692303.pdf>
 i) <https://townplanning.gujarat.gov.in/planning-development-policies/town-planning-history.aspx>
 j) <https://www.giftgujarat.in/>
 k) www.nptel.iitm.ac.in
 l) www.khanacademy

15. PO-COMPETENCY-CO MAPPING

Semester II	Town Planning (Course Code: 4345003)						
	POs and PSOs						
Competency & Course Outcomes	PO 1 Basic & Discipline specific knowledge	PO 2 Problem Analysis	PO 3 Design/ development of solutions	PO 4 Engineering Tools, Experimentation & Testing	PO 5 Engineering practices for society, sustainability & environment	PO 6 Project Management	PO 7 Life-long learning
Competency	<ul style="list-style-type: none"> Understanding and appreciation of towns and their components with respect to planning concepts 						
Course Outcomes							
CO a) Characterize the elements of town planning.	2	2	-	-	1	-	1
CO b) Identify different components of a town from its development plan.	2	2	-	-	2	-	1
CO c) Recognized various elements of residential, industrial, public building and open spaces.	3	3	-	-	1	-	2
CO d) Identify various components of road networks.	3	3	-	-	1	-	1

Legend: '3' for high, '2' for medium, '1' for low or '-' for the relevant correlation of each competency, CO, with PO

16. COURSE CURRICULUM DEVELOPMENT COMMITTEE

GTU Resource Persons

S. No.	Name and Designation	Institute	Contact No.	Email
1	Shri Bhaskar J Iyer (HOD in Arch, Coordinator & Associate Dean)	Government Polytechnic for Girls, Ahmedabad	9879474833	bhaskariyer2004@gmail.com
2	Shri Bhavesh M Patel (Lecturer in Arch.)	Government Polytechnic for Girls, Ahmedabad	9427462830	bhavesh0arch222@gmail.com
3	Shri Pratik M. Bagul, (Lecturer in Arch.)	Government Polytechnic for Girls, Surat	9687879139	Pratikbagul1375@gmail.com
4	Shri Rahul K. Ghoniya, (Lecturer in Arch.)	Government Polytechnic for Girls, Surat	8469361929	ghoniyaarch@gmail.com