



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Specialization / Minor Degree in Next Generation Smart
Village Subject Code: N115AD01
Semester – V (w.e.f. AY 2025-26)
Subject Name: Smart Village Surveys

Type of course: Minor Degree

Prerequisite: Basic Concept of Smart Village

Rationale: To develop basic understanding about various surveys to be carried out for gap analysis in terms of infrastructural requirements and Socio- economic

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	4	5	70	00	30	00	100

Content:

Sr. No.	Content	Total Hrs
1	Introduction: Need and Objective of Surveys, Domains and Dimensions of Inquiries, preparation of survey and interview forms Pre-Execution of Survey: Planning and scheduling surveys, Sampling Plans, Trainings to staff	3
2	Land Survey & Measurements: Use of tapes, sensors and EDM for measurement, Infrastructure measurements and collection of land records, Housing Survey, Aerial Photography, Geoinformatics	8
3	Socio-Economic Survey: Education and Entrepreneurship, Healthcare and life enrichment, Tourism and Entertainment, Agriculture and Enterprises, Logistic and Public Transport, Smart Banking Technology	8



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4	Environmental Survey: Building and Housing, Sources of Drinking water & its distribution pattern, Water Conservation, Energy and Smart Grids. Pollution control and Waste Management, Sanitation and cleanliness, Public Places with Green Zones	8
5	Public Services Survey: Interaction with Stakeholders for Public Infrastructures and GAP analysis, Urban Apps and Open platform using ICTs	8
6	Surveillance, safety and General Awareness: Monitoring, Managing and Regulating Village Flows and Processes, Public Safety and Emergency Response, Participation in policy making, Awareness for Government Schemes and Disasters, E-governance	7

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10%	25%	20%	20%	15%	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. International Handbook of Survey Methodology edited by Edith D. de Leeuw, Joop Hox, Don Dillman, Lawrence Erlbaum Associates Inc, Taylor and Francis Group
2. How to Create Smart Villages: Open Innovation Solutions for Emerging Markets By Solomon Darwin, Werner Fischer, Henry Chesbrough, Peaceful Evolution Publishing
3. Development Programme 2020-21, Government of Gujarat, General Administration Department Planning Division Sachivalaya, Gandhinagar.
4. <https://planning.gujarat.gov.in/images/pdf/DP-Eng-20-21.pdf>



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Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-01	Students will be able to demonstrate and carry out surveys related to various Socio-Economic domains; Environmental domains, Public services, surveillance and safety domains.	25%
CO-02	Students will be able to understand and apply various computing architectures for collecting various data	50%
CO-03	Students will be able to identify and demonstrate various challenges to be addressed for developing smart villages	25%

Indicative list of Experiments/ Assignments:

1. Use of EDM (Electronic Distance Measurement) and GIS (Geographic Information System)
2. Survey activities in villages in the form of personal interview or online feedback and GAP analysis
3. Proposals making for Surveillance and Public safety
4. Socio-economic Surveys
5. Infrastructure measurement and mapping with existing records
6. REPORT (PART-2): Surveys to explore GAP analysis