



# GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering (Semester 7)

Minor Degree : Next Generation Smart Village

Subject Code : N117AD01 (w.e.f. AY 2026-27)

Subject Name : Sustainable Smart Village Model

Type of Course : Compulsory

Prerequisite : Basic Concept of Green & Smart Village and technologies to be applied to develop the same.

Rationale : To inculcate basic understanding about planning, policies and commitments for integrated smart village development.

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	00	30	00	100

Content :

Sr. No.	Content	Total Hrs.
1	<b>Policies and Commitments :</b> Strategy to connect rural communities to economic opportunity, planning and implementation efforts for infrastructure development.	02
2	<b>Planning and Prioritization for infrastructure :</b> Infrastructure development priority for education, health & housing, agriculture, transportation, etc. Need & scope of improvements, Scale of improvement, Benefits, etc., Finance and revenue generation, Analyzing the new infrastructures required.	08
3	<b>Improved Services :</b> Services related to drinking water, health, sanitation, electricity etc. at the point of delivery. Involvement of Government, NGOs and Local organization.	08
4	<b>Improvement in Human Development Index (HDI) :</b> Increase in per capita income, health and education, Life expectancy, Year of schooling, social & economic development, addressing poverty rate, etc., woman empowerment, etc.	08
5	<b>E-Governance :</b> IT enabled digital transformation, Wireless communication for wide-area network in IT, Applications: Irrigation, Dairy and Livestock monitoring, Smart Surveillance, Asset monitoring, Water and Waste Management.	08
6	<b>Holistic Approach for Smart Village Development :</b> Smart mobility, Smart Infrastructure, Smart Land Resources management, Smart governance, integrated rural development programme, Planning and organizing Rural development, Financing rural Development, Implementation, Monitoring and Evaluation.	08



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## Suggested Specification table with Marks (Theory) :

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10%	25%	25%	20%	10%	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. Rural Development: Principles, Policies and Management By Katar Singh, Sage Publication
2. Mission 2030 Smart India – Khushhaal Bharat, By Dr K P Agrawal, Sankalp Publication
3. Sustainable Regional Development edited by Vinita Yadav, Studera Press, India
4. Planning, Housing and Infrastructure for Smart Villages By Hemanta Doloi, Ray Green, Sally Donovan, Routledge Publication
5. Affordable Housing for Smart Villages By Hemanta Doloi, Sally Donovan
6. Smart Villages: Bridging the Global Urban-Rural Divide, V. I. Lakshmanan, Arun Chockalingam, V. Kumar Murty, S. Kalyanasundaram, Springer International Publishing
7. India's Changing Villages By S.C. Dube, Routledge Publication

## Course Outcomes :

Sr. No.	CO statement	Marks % weightage
01	Students will be able to understand Policies and commitments for developing Smart Village infrastructures as per their priority and importance.	10%
02	Students will know about involvement of various government and non-government organizations for improving services.	25%
03	Students will able to analyse, measure and improve the HDI for developing smart village.	45%
04	Students will recognize use of IoT in e-governance.	10%
05	Students will learn holistic approach for integrated rural development.	10%



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## Indicative list of Experiments/ Assignments :

1. Study related to Policies and commitments for infrastructure development.
2. Mapping Prioritization for infrastructure.
3. Study related to measurement of HDI.
4. Case studies related to involvement of Government, NGO and Local authorities in services improvement.
5. **COMPILE REPORT** : Compile Report of Integrated Smart village.

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