FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

Programme: **Bachelor of Technology (Automobile Engineering)**

Semester: **VI**

Course Code: **202030622**

Course Title: **Smart Cities Planning and Management**

Course Group: **Open Elective-II**

Course Objectives: The objectives of the course are to understand the basic concept of various types of Infrastructure and Smart cities and its associated challenges. Students will learn the process of planning system and to apply the basic need to solve various Infrastructure problems.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
				Theory		J/V/P*		Total
Lecture	Tutorial	Practical		Internal	External	Internal	External	
3	0	0	3	50/18	50/17	NA	NA	100 / 35

* **J**: Jury; **V**: Viva; **P**: Practical

Detailed Syllabus:

Sr.	Contents	Hours
1	**Introduction to Smart Cities:** Definition, Concept, Need and importance, Benefits of smart cities, History of Smart city in India, Features & components of a smart city, Characteristics and factors of smart cities, Smart structures, Classification of smart structures, Challenges faced in developing smart cities, Scope of smart cities, Worldwide Policies for Smart City. Government of India: India "100 Smart Cities" Policy and Mission, Smart Cities in India, Case Studies of Smart City.	13
2	**Infrastructure Management System:** Infrastructure Management in India, Challenges, Objectives, Various types of Infrastructure Services, Applications for Existing Smart City.	7
3	**Planning and Management of Smart Cities:** Dimension of Smart Cities, Smart Construction, Planning & Design, Theory and principles, Sustainable Building- Housing, Introduction to Green Buildings, Features of green building rating systems in India: LEED, GRIHA, Energy Saving System, Solar Energy for Smart City, Project Management.	11

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4	**Smart Technologies:** **Transportation System Management in Smart Cities:** Smart Vehicles and Fuels, **Intelligent Transportation System:** Weigh –In motion, Variable Message Signs, GIS, GPS, Navigation System, Traffic Safety Management, Mobility Services, E-Ticketing etc. **Water Resource Management and Infrastructures in Smart Cities** Storage and Conveyance System of Water, Sustainable Water And Sanitation, Sewerage System, Flood Management, Conservation System Methods etc.	**11**

Reference Books:

1	Jo Beall (1997); "A city for all: valuing differences and working with diversity"; Zed books limited, London (ISBN: 1-85649-477-2).
2	UN-Habitat; "Inclusive and sustainable urban planning: a guide for municipalities"; Volume 3: Urban Development Planning (2007); United Nations Human Settlements Programme (ISBN: 978- 92-1-132024-4).
3	Arup Mitra; "Insights into inclusive growth, employment and wellbeing in India"; Springer (2013), New Delhi (ISBN: 978-81-322-0655-2).
4	William J. V. Neill (2004); "Urban Planning and cultural identity"; Routledge, London (ISBN:0- 415-19747-3).
5	Giffinger, Rudolf; Christian Fertner; Hans Kramar; Robert Kalasek; Nataša Pichler-Milanovic; Evert Meijers (2007). "Smart cities – Ranking of European medium-sized cities".
6	"Draft Concept Note on Smart City Scheme". Government of India - Ministry of Urban Development (http://indiansmartcities.in/downloads/CONCEPT_NOTE_3.12.2014_REVISED_AND_LATEST_.pdf).

Supplementary learning Material:	
1	https://smartcities.gov.in/.
2	Re-conceptualizing Smart Cities: A Reference Framework for India https://www.niti.gov.in/writereaddata/files/document_publication/CSTEP%20Report%20Smart%2 0Cities%20Framework.pdf.
3	Draft Concept Note on Smart City Scheme". Government of India - Ministry of Urban Development smartcitiesoftomorrow.com/wpcontent/uploads/2014/09/CONCEPT_NOTE_3.12.2014__REVISED_AND_LATEST_.pdf /.

Pedagogy:

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Continuous assessment
- Interactive methods

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Internal Evaluation :

The internal evaluation comprised of written exam (40% weightage) along with combination of various components such as Certification courses, Assignments, Mini Project, Simulation, Model making, Case study, Group activity, Seminar, Poster Presentation, Unit test, Quiz, Class Participation, Attendance, Achievements etc. where individual component weightage should not exceed 20%.

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						**R**: Remembering; **U**: Understanding; **A**: Applying; **N**: Analyzing; **E**: Evaluating; **C**: Creating
R	**U**	**A**	**N**	**E**	**C**	
35%	45%	20%	0%	0%	0%	

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.

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	Understand the concept of smart cities and understand national and global policies to implement for smart city development.	**30**
CO-2	Analyse the necessity of infrastructural development for smart cities. Identify components of infrastructure and Prepare infrastructure plan for smart city.	**20**
CO-3	Apply planning and design techniques to different smart housing system.	**25**
CO-4	Evaluate smart transport system and water resources systems for smart cities and its application.	**25**

Curriculum Revision:	
Version:	2
Drafted on (Month-Year):	June-2022
Last Reviewed on (Month-Year):	
Next Review on (Month-Year):	June-2027

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