SARVAJANIK UNIVERSITY
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SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Bachelor of Technology
Civil Engineering

B. Tech. - IV Semester VII

Subject Name : Smart Transportation Planning **Subject Code:** BTCL15703

Type of course : OE - III
Prerequisite : -
Rationale : To explore the recent advancements in Transport Systems

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	100
3	0	0	3	60	25	15	-	-	

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CA3:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Content:

Sr. No.	Topics	Teaching Hrs.	Module Weightage
1	**Introduction to Intelligent Transport System** Definition, Role and Responsibilities, Advanced traveler Information System, Fleet Oriented ITS Services, Electronic Toll Collection, Critical issues, Security, Safety, Vehicle Detection, Toll Collection (Fastag)	09	20%
2	**Intersection Management** Video Detection, Virtual Loop , Cameras, IR Lighting, Integrated Traffic Management, Control Centre, Junction Management Strategies	14	30%
3	**Advanced Transport Management System** ATMS, Route Guidance, Issues, Travel Information, Pre Trip and Enroute Methods, Historical, Current, Predictive Guidance, Data Collection, Analysis, Dynamic Traffic Assignment (DTA)	10	25%
4	**Advanced Traveler and Information System** Basic ATIS Concepts, Smart Route System, Data Collection, Process – Dissemination to Travelers – Evaluation of Information – Value of Information	12	25%

Suggested Specification table with Marks (Theory/Practical):

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

Legends: R: Remembrance, **U:** Understanding; **A:** Application, **N:** Analyze, **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.

OE- III: Open Elective – III

Reference Text Books:

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	Intelligent Transport Systems	Intelligent Transportation Primer	Washington, US	2001	1st
2	Public Transport Planning with Smart Card Data	Fumitaka Kurauchi, Jan-Dirk Schmöcker	CRC Press (ISBN: 9780367782641)	2017	1st
3	Decision Support Systems – Theory and Application	Cycle W.Halsapple and Andrew B.Winston	Springer Verlog, New York	1987	1st
4	Smart Growth and Sustainable Transport in Cities	Amir Shakibamanesh, Mahshid Ghorbanian, Seyed Navid Mashhadi Moghadam	Routledge (ISBN: 9780367262242)	2019	1st
5	Informed Urban Transport Systems: Classic and Emerging Mobility Methods toward Smart Cities	Joseph Chow	Elsevier (ISBN: 978-0128136133)	2018	1st

Course Outcome:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % weightage
CO-1	Identify and learn about the principles and aspects of intelligent transport system. *(R, U, A....cognitive level)*	20
CO-2	Discover the concept of intersection management. *(R, U, A, N, C....cognitive level)*	10
CO-3	Explore the basics of advanced transportation Planning. *(R, U, A, N, C....cognitive level)*	20
CO-4	To comprehend the use of smart traffic control device, techniques, management and visual aids in the traffic operation. *(R, U, A, N, E, C....cognitive level)*	30
CO-5	Explore the different techniques of advanced traveller and information system. *(R, U, A....cognitive level)*	20

OE- III: Open Elective – III

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO-1	2	1	1	-	1	1	-	1	1	1	-	2	1	2	3
CO-2	1	1	-	-	-	1	-	1	1	1	-	2	2	2	2
CO-3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2
CO-4	2	1	2	2	1	1	2	2	2	2	1	2	2	2	2
CO-5	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2
Rationale*	**9**	**6**	**7**	**6**	**6**	**7**	**6**	**8**	**8**	**8**	**5**	**10**	**9**	**11**	**11**

Rationale*: After learning the basic theories and design criteria about the transportation planning students will be able to understand the advances in transportation planning.

List of Open Source/learning website:

- https://link.springer.com/article/10.1007/s10109-020-00342
  - GIS in ITS
- https://www.sciencedirect.com/science/article/pii/S2666691X20300142
  - Smart transportation planning: Data, models, and algorithms
- https://www.digi.com/blog/post/introduction-to-smart-transportation-benefits
  - Introduction to smart transportation.

OE- III: Open Elective – III