**Name of Course: Smart Mobility** (MTIP304)

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| Programme & Sem: | Masters in Transport Planning, Semester three |
| Course Duration: | July 4, 2023 to Nov 22, 2023 |
| Course Coordinator: | Dr. M.N.V Pavan Kumar, Assistant Professor, Dept. of Planning, (pavanmachavarapu@spav.edu.in) |
| Number of Credits: | 03 |
| Subject Category: | Theory |
| Total Periods/Week: | 03 (See Timetable for details) |
| Internal Assessment | 50 (minimum pass marks 50%) |
| End Evaluation | 50 (minimum pass marks 50%) – Written Exam. |
| Total Marks | 100 (to be converted to CGPA credit pattern as per regulations) |

**Subject Objective:** To provide a comprehensive overview of the intelligent transport systems (ITS) and traffic control systems for providing versatile and smart mobility solutions to cater future travel demand.

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| **Week** | **Lecture / Session Topic (Teaching-Learning Objective aimed)** | **Unit and Assignment** |
| Week 1  (3 Aug) | Concepts and components of smart mobility, role of ITS in smart mobility and smart cities; | Unit 1: Smart Mobility  Assignment 1: Review on research articles related to application of smart mobility. |
| Week 2  (10 Aug) | PPPs as a tool  to implement smart mobility projects; smart mobility solutions for differently-abled; Integration of smart  and green mobility. | Unit 1: Smart Mobility  Assignment 1: Review on research articles related to application of smart mobility. |
| Week 3-4  (19 Aug - 2 Sep) | Field Trip |  |
| Week 5  (7 Sep) | Definition, concepts, types of Intelligent Transport System (ITS); ITS technology, software, equipment, | Unit 2: Intelligent Transport System |
| Week 6  (11-15 Sep) | Mid- Semester Assessment week |  |
| Week 7  (28 Sep) | Traffic management, emergency and incident management, public transport system, terminal and depot  management system, | Unit 2: Intelligent Transport System |
| Week 8  (5 Oct) | parking infrastructure management, commercial vehicle management, | Unit 2: Intelligent Transport System |
| Week 9  (12 Oct) | Highway  surveillance, case studies. |
| Week 10  (19 Oct) | Available and emerging traffic control system technology, Area traffic control, urban traffic control  system technology, transportation system management, highway control and incident management, | Unit 3: Application of ITS in-Transport Infrastructure |
| Week 11  (26 Oct) | Intelligent vehicle highway system, highway surveillance, Traffic regulation and enforcement;  optimisation of public transport for smart mobility; terminal management; parking management. |
| Week 12  (2 Nov) | Costing of ITS, ITS benefits assessment, economic and financial analysis of ITS. Implementation | Unit 4: Performance, Implementation and Evaluation of ITS  Unit 5: Regional Transport Policy  Assignment 2:  Case studies on application of ITS systems |
| Week 13  (9 Nov) | Case studies, institutional and organizational issues. |
| Week 14  (16 Nov) | Application of ITS in demand management, transport supply provision, shared mobility. |

Reference books:

1. Button, K. J., Hensher, D. A. (2001), *Handbook of Transport Systems and Traffic Control,* Elsevier Science, United Kingdom.

2. Sarkar, P., Jain, A.K. (2017), *Intelligent Transport Systems,* PHI Learning Private Limited, New Delhi.

Note:

1. Any other closed holidays as declared by SPAV shall supersede the above lecture plan. Holidays shown above may alter as per Notice from time to time.
2. Assessment Sessions may be re-scheduled, with prior intimation.
3. Reading lists provided is not exhaustive and is subject to addition – students are advised to follow progression of class to keep abreast of the new reading lists, if any.