1. Title of the course

Urban Mobility and Smart City Infrastructure

2. Content of the course

No.	Topic	Detailed description	Number of hours
1	**Fundamentals of Smart City Transportation Planning**	This introductory course focuses on principles and frameworks for planning smart city transportation systems, emphasizing the integration of technology and sustainability: • Introduction to Smart Cities • Assessing urban mobility needs • Sustainable transport planning principles	3
2	**Multimodal Transportation Systems and Information Technology for Urban Mobility**	This lecture focuses on the role of new technologies and Intelligent Transportation Systems (ITS) in the planning and integration of multimodal transportation systems. This lecture focuses on IT applications in urban traffic management, exploring software and tools that can enhance urban mobility. Students will learn how innovative solutions can enhance seamless mobility and reduce congestion: • **Emerging Technologies in Multimodal Transportation -** Overview of the latest ITS applications that support the integration of various transportation modes, including public transit, cycling, walking, and ride-sharing. • **Strategies for Integrating Multiple Modes Using ITS -** Examination of technology-driven approaches for creating efficient and cohesive multimodal transit networks, such as mobile applications, real-time data sharing, and coordinated traffic management. • **Impact of ITS on Urban Mobility -** Discussion of how ITS enhances the user	6

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		experience by providing real-time information, optimizing routes across different modes, and improving overall operational efficiency. • **Case Studies of Successful Multimodal Systems Utilizing ITS -** Analysis of real-world examples showcasing the implementation of ITS in multimodal transportation systems, highlighting best practices and lessons learned. • Overview of IT applications in transport • Smart tools and platforms for urban mobility • Data-driven decision making in traffic management	
3	**Pedestrian and Bicycle Traffic Management**	This lecture focuses on the application of Intelligent Transportation Systems (ITS) in managing pedestrian and bicycle traffic in urban environments. It will cover the technologies and services that support the safety and comfort of non-motorized road users. Key Topics: • **Importance of Pedestrian and Bicyclist Traffic in Smart Cities -** The role of pedestrians and cyclists in transportation systems and the benefits for sustainable urban development. • **ITS Services Supporting Infrastructure for Pedestrians and Bicyclists -** Examples of technologies such as pedestrian information systems, smart lighting, and adaptive traffic signals that cater to the needs of pedestrians and cyclists. • **Safety and Traffic Management for Non-Motorized Users -** The application of data from ITS to monitor and analyse safety on bicycle routes and in areas with high pedestrian traffic, including detection and response to hazardous situations. • **Integration of Traffic Management in ITS -** How ITS services can integrate pedestrian and bicycle traffic with other components of the transportation infrastructure to enhance the coherence and effectiveness of the urban mobility system.	7