URBAN TRANSPORT PLANNING FOR THE DIGITAL AGE

COURSE OVERVIEW
Transport researchers and planners have realised the shortcomings of the traditional methods for transport planning in the digital age where historical and real-time data from various digital sources, such as GPS, smartphones, smart cards and Bluetooth sensors, are more readily available for better transport planning. Moreover, compared to traditional transport modes (e.g. bike, car, bus and train), more options (like autonomous vehicle, electric vehicles, connected vehicle, and scooter) are emerging to provide solutions to unsolved problems as well as to pose new challenges in planning for their impacts on the demand for urban transport. It is therefore necessary to revisit the essentials of urban transport planning to understand the effective use of digital data and new technologies, and how they can be used for providing smarter mobility solutions. This course will provide transport researchers and planners with knowledge about modern urban transport planning in the digital age.

COURSE BENEFITS
By the end of this course you will understand how:
• Traditional methods are applied to transport planning
• Modern technology-based developments have led to change in transport planning over the last several decades. There are new data points and more means to receive the data. How will we use the data to manage our cities better? What roles will citizens have in using the information to improve their lives?
• Trends in society, environment and technology are likely to impact mobility, transport demand changes and supply. What are the possible impacts and outcomes from our actions today? Tomorrow?
• Transport estimates need to reflect above changes, how transport models need to be adapted to include all modes of travel, possible new modes, new technology and even new ways of urban living shaped by the transportation supply
• Innovative approaches can improve urban mobility at the digital age

WHAT IS UNIQUE ABOUT THIS COURSE?
• You will learn more about Designing Urban Transport Planning
• You will gain an in-depth understanding of the application of Smart Mobility and new technologies in Transport Planning
• You will learn from real-life applications in cities around the world
• The course is delivered by experts doing applied research on how infrastructure and social behaviour intersect to ensure more liveable cities and regions

WHO SHOULD TAKE THIS COURSE?
Transport planners, professionals in the urban transportation sector and students interested in transportation planning would find this course useful to learn about tools and methods in implementing smarter mobility solutions.

COURSE PRE-REQUISITE
Basic knowledge of Transport Planning and Data Analytics is preferred but not required.

The course is being delivered in conjunction with UOW SMART Infrastructure Facility, which is an international leader in applied infrastructure research helping to address the challenges of infrastructure planning and management both now and into the future.
The 18-hour course will include:

### COURSE OUTLINE

#### TRADITIONAL CONCEPTS OF TRANSPORT PLANNING
- Trip generation
- Trip distribution
- Mode choice
- Traffic assignment
- Advantages and disadvantages of the classic 4-step method
- Case Study 1 - A transport planning example using 4-step method

#### RECENT INNOVATIONS AND CHANGES TO URBAN TRANSPORT PLANNING
- Trends in demand for urban mobility and choice preferences - Access and Mobility placed on a spectrum
- Urban transport technology and mode specific supply options - Frequency, directness, identity, capacity, passenger throughput and the limitations of the land-use generated demand
- Estimating cost of urban mobility and its impact on economic competitiveness and environment - Wider Economic Benefits and agglomeration economics with examples from several cities. Car alone versus transit rich versus walk/bike cities
- Framework for generating sustainable solutions for short-, medium- and long-term implementation - Strategy to financing, budgeting and demand creation for supply implementation
- Using digital data for urban transport innovations and improving urban liveability - examples
- Case Study 2 - Vancouver Canada and Perth Australia: similarities and differences

#### SMART MOBILITY AND NEW TECHNOLOGIES
- Improved urban mobility, Internet of Things and digital technologies: CROW/NACTO to Sidewalk Lab experiment in Toronto
- Traffic generation from land use - New South Wales transport demand guide and others. Compare contrast and discuss
- Case Study 3 - Rotterdam Netherlands and London UK: similarities and differences
- Big data in transport planning and operation
- Case Study 4 - Using smart card data to support public transport planning and operation
- Smart mobility - now and future

#### COURSE FACILITATORS

**DR BO (BOBBY) DU**

Dr Du’s research interests focus on better understanding people’s travel behaviour and practically improving transport systems using modelling, optimisation, simulation and data analytics tools. At SMART, Dr Du is leading the Future Transport & Mobility group in transport research and projects. As the coordinator of the SMART Teaching Program, Dr Du is contributing to the development and coordination of new teaching programs within SMART, across UOW’s faculties, and beyond.

**DR COLE HENDRIGAN**

Dr Hendrigan received his PhD in ‘Land-use and transport integration including the process of urban land use change, transport network and capacity modelling’. Professionally, Dr Hendrigan has a decade in human-scaled public-realm design and active transport practice as a Landscape Architect. He has also lead public participation decision-making in diverse rural and urban settings with indigenous, newcomer communities and advocates while working in local governments.

**DR IOANNIS MANIKAS**

Dr Manikas is an Associate Professor at the University of Wollongong in Dubai (UOWD). He has ten years of post-doctorate experience working as an academic and consultant in the UK and the UAE, as well as ten years of pre-doctorate experience, working as a researcher, consultant, and adjunct lecturer in Greece and the UK.

Dr Manikas has a keen research interest in the areas of Supply Chain Management for the Agrifood Sector, Urban Sustainability and Resilience (with a focus on Urban Farming commercialisation, Food and Nutrition Security, and Urban Freight mobility), Sustainable Supply Chains, Lean and Green Integration, and Traceability Management for the Agrifood industry.

For more information, please visit www.uowdubai.ac.ae or contact Maria Manuel at MariaManuel@uowdubai.ac.ae or +971 4 2781907

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