

Urban Transport Planning for the Digital Age

Course Overview

Traditional methods for transport planning have been widely used for the past age, however more and more transport researchers and planners have realized the shortcomings of classic methods in the digital age where historical and real-time data from various digital sources, such as GPS, smartphone, smart card and sensor, are more readily available to support better transport planning. Moreover, compared to traditional transport modes (e.g., bike, car, bus and train), more options (e.g., electric/autonomous/connected/shared vehicle, on-demand transport and e-scooter) are emerging to provide solutions to unsolved problems as well as to post new challenges in multimodal transport planning and operation. It is 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 to develop smarter mobility solutions. Especially, the COVID-19 related changes to transport have highlighted the need for innovative mobility solutions. This short course will provide transport researchers and planners with basic knowledge of transport planning process, as well as major innovations and changes in the digital age with potential to address current issues. Real case studies worldwide will be shared with audiences as references for modern urban transport planning.

Course Outline

This 21-hour course consists of 6 afternoon sessions (3.5 hours per session, Sydney time 1:30pm-5:00pm) in June 2022.

Session 1 - Classic Transport Planning Method (6 June, Monday, Bobby)

- Trip generation
- Trip distribution
- Mode choice
- Traffic assignment
- Advantages and disadvantages of the classic 4-step method

Session 2 - Recent Innovations and Changes to Urban Transport Planning (8 June, Wednesday, Amal)

- Transport models - past development and future prospects; types of data
- Understanding trends and changes in urban transport; methods of forecasting; tools of transport demand management; use of high-frequency data in forecasting
- Transport innovations for improving urban liveability; use of big data.

Session 3 – Modern Urban Transport Planning and post-COVID-19 Planning (10 June, Friday, Amal)

- Improving urban liveability, reducing urban mobility cost and motorization, improving economic competition in post-COVID-19 context, fuel economy, and air quality.
- Sustainable Transport Planning, KPIs of urban transport, managing motorization, electric vehicles, population density and public transport share, micro-mobility, and modal integration.
- Case Study - Post COVID-19 urban transport planning
- Case Study - Jaffna Sri Lanka

Session 4 – Sustainable and Flexible Public Transport Planning (13 June, Monday, Bobby)

- New technologies and emerging services enable sustainable transport system
- Planning and operation of sustainable public transport
- Flexible public transport service design
- Case Study – Charging solution to support zero-emission bus operation

Session 5 – Integrated Planning of Transport and Land use (15 June, Wednesday, Thivya)

- The influence of land use on mobility and accessibility
- The influence of transportation on land use
- Land use and Transport Integrated Models (LUTI) - History of effects and challenges of implementation
- Case Study – Application and Prospects for smart growth

Session 6 – Vision of Future Transport (17 June, Friday, Bobby)

- Urban transport - now and future

- Case Study – How COVID-19 affects our daily life and travel
- Case Study – The next-generation urban transport system
- Case Study – Using smart card data to support public transport planning and operation

Course Benefits

By the end of this course, you will appreciate how:

- Traditional methods are applied to transport planning
- Modern technology based developments have led to change in how transport planning has been done over the last several decades
- Trends in society, environment and technology are likely to impact mobility, transport demand changes and supply
- Transport estimates need to reflect above changes, how transport models need to be adapted
- Innovative approaches can improve urban mobility and reduce the overall cost

Course Type

Introductory course: introducing concepts, methods or tools to relevant students or professionals

Course Pre-Requisite

Basic knowledge of Transport Planning and Urban Planning is preferred but not required.

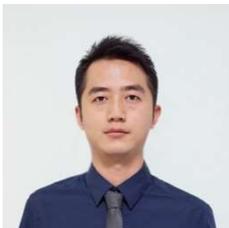
Course Format

This course will be delivered online via Zoom. Relevant Zoom links will be sent to audiences before the course starts.

Course Assessment

Online quiz will be conducted upon completion of this course.

Course Conveners



Dr. Bo (Bobby) Du

Dr. Du's research activities aim to better understand people's travel behaviour and practically improve transport system using modelling, optimization, simulation and data analytics tools. Dr. Du is the theme leader of Future Transport & Mobility at the SMART Infrastructure Facility. As the Coordinator of SMART Short Courses, Dr. Du is contributing to the development and coordination of SMART short courses with academics and communication team within SMART, across UOW's faculties, and beyond.



Prof. Amal S. Kumarage

Prof. Amal S. Kumarage is a former International Vice President of CILT and a past Chairman of the Chartered Institute of Logistics and Transport (CILT) Sri Lanka. He is a senior academic at the University of Moratuwa and International Consultant on Transport and former Advisor to the Governments of Sri Lanka and Maldives. Prof. Kumarage has also served as the Chairman of the National Transport Commission the apex transport regulatory body and the Chairman of the Transport Board, which operated 6000 buses in Sri Lanka.



Mrs Thivya P. Amalan

Thivya is currently a visiting researcher at the SMART Infrastructure Facility, University of Wollongong, Australia, and a Lecturer at the Department of Transport and Logistics Management at the University of Moratuwa in Sri Lanka. Thivya has successfully delivered a great number of projects to improve the transportation system in Sri Lanka. Her research is mainly focused on developing land use and transportation integrated models using higher frequency proxy data.

Fee and Discount

The standard registration fee for this course is \$1,800. However, discount codes are available for the following:

- 10% discount for UOW staff, students and alumni
- 10% discount for 2 or more course enrolments from the same person
- 10%, 15%, 20% discount for group booking with 5-9, 10-15 and 15+ enrolments, respectively, from the same organisation.

Contact

For any inquiry please contact:

Dr. Bobby Du

Coordinator of SMART Short Courses

Email: bdu@uow.edu.au