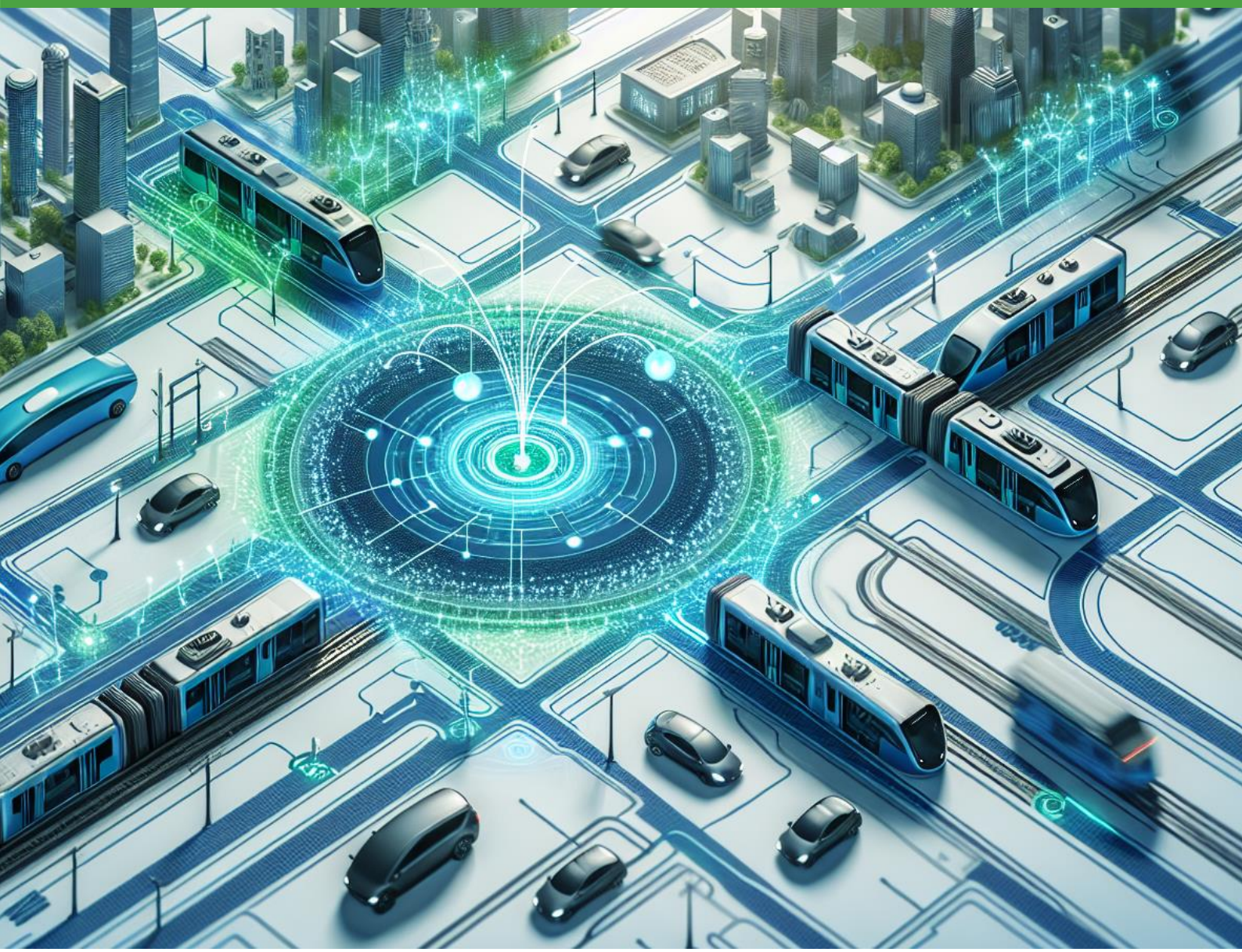
FACULTY OF
ENGINEERING &
THE BUILT ENVIRONMENT

CPD
CONTINUING PROFESSIONAL DEVELOPMENT



Dept. of Civil Engineering | Masters module | CPD course

Transport Systems Simulation

25 - 29 August 2025

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Introduction

The Master's Programme

The master's programme offers degrees specialising in transport studies, with a specific focus on the planning and management or urban passenger transport systems. The primary aim is to produce graduates from a range of undergraduate disciplines with the necessary knowledge and skills to engage effectively with the challenge of creating affordable, efficient, sustainable, safe, equitable and environmentally sound urban transport systems, and to contribute to the implementation of new and demanding policy directives. Curriculum content is crossdisciplinary in orientation and exposes students to a broad range of the analytical, evaluative, planning and management issues they are likely to encounter in the field. For further information on the master's programme please see the website: [Transport Studies | University of Cape Town (uct.ac.za)]

Continuing Professional Development

Modules of this master's programme are offered to Continuing Professional Development delegates. Ten individual block release modules are offered in 2025. Continuing Professional Development students may take each module as a separate certificate course. CPD students are required to attend the lectures but are not required to submit assignments or write the exam.

Who Should Attend

The programme has been designed to be accessible to people in full-time employment as well as fulltime students. Applicants may register for the individual master level courses offered by the programme as Continuing Professional Development students. These students will be awarded a digital Certificate of attendance. University credits will not be awarded to CPD students. Courses are typically attended by consultants or government officials working within the transportation field.

Format

Each module is structured in the following way: a week of intensive contact time at UCT, comprising formal lectures, class assignments and seminars/tutorials.

Please note: these courses are currently planned to be presented face-to-face over 5 days, but it may be necessary to change the format of a course to an online or hybrid format.

Course Content

This course introduces methods of simulating the functioning of complex and dynamic transport systems. The purpose of these simulations is to support decision-making in relation to how such complex and dynamic systems are designed, managed, and regulated. Course modules will cover: the foundations and motivation of decision-making by different actors (from users, to operators, to transport authorities); the fundamentals of simulation modelling in support of decision-making; the data requirements of such simulation models; and the varying application of different models to transport system components such as the network, service operation, and travel behaviour. Some of the topics that will be covered include the basics of Simulation, behavioural modelling and Activity-based modelling, using tools AnyLogic and MATSim. Practical exercises and case studies will also be presented.

Course Presenter

Dr Obiora Nnene is a senior lecturer in UCT's Department of Civil Engineering, specialising in transportation planning and engineering. He previously worked as a highway design engineer in road design and infrastructure provision and is passionate about improving transportation systems using data-driven approaches. His research interests are big data applications in transport, public transport network design and optimisation, agent-based transport modelling, transport emissions, and energy modelling. He teaches courses in urban transportation engineering and transportation planning at the undergraduate and postgraduate levels. He has also been involved in many projects focused on improving transportation systems.

Prof Johan W Joubert is a professor of operations research for logistics planning at the KU Leuven Institute for Mobility and the Centre for Industrial Management (CIB) in the Department of Mechanical Engineering, KU Leuven, Belgium. He is an extraordinary professor at the University of Pretoria. He has held visiting professorships at the Swiss Federal Institute of Technology (ETH Zurich) in Switzerland and the University of Natural Resources and Life Sciences (BOKU) in Vienna, Austria. He was also a Fellow of the Mobility Cultures in Megacities program, hosted by the Technical University of Munich and the Institute for Mobility Research (ifmo), a research facility of the BMW Group. He focuses on developing appropriate decision-support tools in transport planning and modelling. He develops behaviourally sensitive people and urban freight movement models using activity—and agent-based transport models. These models assist in policy evaluation and improved infrastructure planning. Be it logical and intertwined business processes on paper, interactive computer simulation models, or notation-bombarded stochastic programs, the models are known to be reliable and accurate representations of reality.

Overview

Course Dates	25 – 29 August 2025
Delivery format	PG Seminar Room, NEB, Upper Campus, University of Cape Town **or** online
CPD	5 CPD points, ECSA registration number: *UCTTSPTSS25*
Fees	Standard fee: R17 300 UCT student fee: R8 650
Transport CPD courses 2025	Transport Modelling CIV5133Z: 3 - 7 Feb Discrete Choice Modelling and Stated Choice Survey Design CIV5127Z: 3 - 7 Mar Transport Demand Analysis and Project Assessment CIV5132Z: 24 - 28 Mar Integrated Land Use-Transport Planning CIV5038Z: 19 - 23 May Local Area Transport Planning, Management & Design CIV5036Z: 28 Jul - 1 Aug Transport Systems Simulation; CIV5165Z: 25 - 29 Aug Management of Transport Supply & Demand CIV5035Z: 1 - 5 Sep Public Transport System Design CIV5071Z: 6 - 10 Oct Big Data Analytics and Transport CIV5164Z: 20 - 24 Oct Public Transport Policy and Regulation CIV5070Z: 17 - 21 Nov

Registration

Registration and Cancellation

- Register for this course
- Registration covers attendance of all sessions of the course and course material.
- Registrations close one week before the start of the course. Confirmation of registration will be sent on receipt of a registration form.
- Cancellations must be received one week before the start of a course, or the full course fee will be charged.
- For more information on application and registration procedures, please visit our website: www.cpd.uct.ac.za

Certificates and CPD Points

A digital certificate of attendance will be awarded to CPD participants. Participants need to attend 80% of the lectures to qualify for an attendance certificate. For further information on digital certificates please visit Digital Certificates at UCT

According to guidelines set out by the Engineering Council of South Africa, attendance of this course will earn participants 5 points towards Category 1 (Developmental Activities). The ECSA validation number for this course is *UCTTSPTSS25.*

Please note: If you are interested in attending this course for credit purposes, you will need to register for the Master's Programme or as an occasional student. If you attend the course as a CPD participant, credit cannot be claimed in retrospect.

Contact details

For more information or details on CPD courses, visit our website or contact us.

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