



Dept. of Civil Engineering | Masters module | CPD course

Big Data Analytics and Transport

20 – 24 October 2025



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

SPES BONA

Introduction



The Master's Programme

The master's programme offers degrees specialising in transport studies, with a specific focus on the planning and management of 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 \(uct.ac.za\)](https://transportstudies.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 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 aims to introduce students to the essential connection between planning and managing mobility systems and big data. It bridges the gap between big data, data science, and transportation systems analysis, focusing on how transport and mobility experts can draw meaningful insights from big data to make informed decisions about the management of mobility systems. Furthermore, the course introduces new techniques and advances in big data analytical frameworks, modelling paradigms and their applications to concepts in mobility analysis and transportation systems. The modules will cover types of transport data, big data capturing and warehousing, big data modelling and optimisation, big data analytics and prediction with machine learning techniques and visualising big data. Ultimately the course will help students bridge the gap between data analysis and decision making, providing the knowledge and tools to effectively interrogate transport data and understand what questions to ask to make informed decisions for the future.

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.

Overview

Course Dates	20 – 24 October 2025
Delivery format	PG Seminar Room, NEB, Upper Campus, University of Cape Town or online
CPD	5 CPD points, ECSA registration number: <i>UCTTSPBDAT25</i>
Fees	Standard fee: R17 300 UCT student fee: R8 650
Transport CPD courses 2025	<p>Transport Modelling CIV5133Z: 3 - 7 Feb</p> <p>Discrete Choice Modelling and Stated Choice Survey Design CIV5127Z: 3 - 7 Mar</p> <p>Transport Demand Analysis and Project Assessment CIV5132Z: 24 - 28 Mar</p> <p>Integrated Land Use-Transport Planning CIV5038Z: 19 - 23 May</p> <p>Local Area Transport Planning, Management & Design CIV5036Z: 28 Jul - 1 Aug</p> <p>Transport Systems Simulation; CIV5165Z: 25 - 29 Aug</p> <p>Management of Transport Supply & Demand CIV5035Z: 1 - 5 Sep</p> <p>Public Transport System Design CIV5071Z: 6 - 10 Oct</p> <p>Big Data Analytics and Transport CIV5164Z: 20 - 24 Oct</p> <p>Public Transport Policy and Regulation CIV5070Z: 17 - 21 Nov</p>

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 *UCTTSPBDAT25*.

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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