SHORT COURSES ON PUBLIC TRANSIT

AUG 11-14, 2025

COURSE 1
TRANSIT PLANNING & ITS
AUGUST 11-12, 2025

COURSE 2
TRANSIT ANALYTICS & MODELLING
AUGUST 13-14, 2025

ENROLL NOW

TAL TRANSIT ANALYTICS LAB

UTTRI

University of Toronto
Galbraith Building, Room 202
35 St. George Street

QUICK RIDE TO BOOST YOUR CAREER

High quality public transit is the linchpin of liveable cities. Not only does it enhance mobility, accessibility, economic productivity, and help address climate change, but the recent COVID pandemic also illustrated its critical role in public health and ensuring the mobility of essential workers. Transit has always faced challenges in our auto-dominant society, but now faces an environment that is increasingly uncertain and turbulent. The last few years have highlighted the strategic importance of data, sophisticated analytics, and advanced technology such as Intelligent Transportation Systems (ITS), that enabled transit systems to respond more nimbly to the dynamic situation and the changing needs of customers. These tools are playing an increasingly critical role in the planning and operations of public transit, and need to be fully integrated into internal business processes.

The **Transit Analytics Lab at the University of Toronto Transportation Research Institute** is offering two back-to-back courses designed to provide participants with knowledge on key concepts and best practices related to public transit service planning and technology. The first course, Transit Planning and ITS, provides an overview of key concepts and best practices related to transit planning, network and service design, service standards, transit and land use, and the application of ITS technologies. The second course, Transit Analytics and Modelling, provides a complementary but more focused and advanced exploration of data analytics and modelling tools that can be used for performance analysis and optimization, forecasting demand at both the system and route levels, transit assignment, and microsimulation-based analysis.

New this year: the second course will be extended to two days, adding one session on transit data analytics and three labs for hands-on training involving real-world data and coding exercises using Python, open-source tools, and notebooks.

The courses will be taught by leading transit planning researchers and practitioners and will provide a balanced perspective on transit systems planning and ITS, including both state-of-the-art techniques (including data and AI driven tools) and practical perspectives.

ADDITIONAL INFO

Who Should Attend?
These courses are for public transit professionals and transportation planners looking to deepen their understanding of public transit planning, Intelligent Transportation Systems (ITS), and data analytics for decision-making. They are suitable for both newcomers and experienced professionals who want to refresh their knowledge. Ideal for planners, designers, and operators at all government levels, as well as consultants in traffic and public transit planning. Members of the public interested in transit are also welcome.

Registration Fees & Acknowledgment
The registration fees (inclusive of 13% HST) are $1,695.00 for the Transit Planning & ITS course; $1695.00 for the Transit Analytics & Modelling course; and $3,051.00 for both courses. All amounts are in Canadian dollars. Registration covers attendance, course notes, lunches, coffee breaks and course completion certificate. Accommodation costs are not included in the registration fee. Upon receipt of your completed registration form and payment, your registration will be acknowledged by email. **The following discounted fees (inclusive of 13% HST) are offered for early bird registration until July 30, 2025: $1,440.75 for the Transit Planning & ITS course; $1,440.75 for the Transit Analytics & Modelling course; and $2,593.35 for both courses.**
If you have to cancel your registration, your fee will be refunded in full provided that we receive your cancellation request in writing no later than August 4, 2025. After that date, no refunds are available. A replacement can always be nominated if you cannot attend.

Transportation Access
The venue is located at the intersection of St. George and College Streets in downtown Toronto. It is accessible via subway (Queen's Park Station) and the 506 Carlton Streetcar line. Paid parking is available nearby.

Suggestions for Accomodation
- Holiday Inn Toronto Downtown Centre, 30 Carlton Street, Toronto, ON M5B 2E9, (877) 660-8550 (416) 977-6655
- Chelsea Hotel – 33 Gerrard Street West, Toronto, Ontario, Canada M5G 1Z4, 1-800-243-5732, 1-416-595-1975

Accommodation booking should be made by the participants.

Transit Planning and ITS

Monday, August 11, 2025
8:45-9am Welcome and Course Introduction - Hemily
9-10:30 Setting the Context for Transit Planning - Hemily
10:30-11 Coffee Break
11-12:30pm Transit Network Planning - Shalaby
12:30-1:30 Lunch
1:30-3 Fundamentals of Line Analysis and Scheduling - Shalaby
3-3:30 Coffee Break
3:30-5 Transit ITS: Developments, Challenges, Opportunities & Future Directions - Hemily

Tuesday, August 12, 2025
8:30-10am Transit Signal Priority and Novel Route Management Concepts - Shalaby
10-10:30 Coffee Break
10:30-12pm Transit Performance Monitoring Using ITS Data - Wilson
12-1 Lunch
1-2:30 Transit Cost Modelling - Wilson
2:30-2:45 Coffee Break
2:45-4:15 Transit Fare Policy and Collection Technology - Hemily
4:15-4:30 Closing Session: Attendance Certificate Presentation

Transit Analytics and Modelling

Wednesday, August 13, 2025
8:45-9am Welcome and Course Introduction - Miller
9-10:30 Introduction to Transit Demand Forecasting & System Level Methods - Miller
10:30-11 Coffee Break
11-12:30pm Transit Assignment Models - Shalaby
12:30-1:30 Lunch
1:30-3 Ridership modelling (Lecture) - Shalaby
3-3:30 Coffee Break
3:30-5 Ridership modelling (Lab) – Othman

Thursday, August 14, 2025
8:30-10am Data Analytics for Reliability and Accessibility Analysis (Lecture) – Da Silva
10-10:30 Coffee Break
10:30-12pm Data Analytics for Reliability and Accessibility Analysis (Lab) – Da Silva
12-1 Lunch
1-2:30 Microsimulation Models of Transit Operations (Lecture) - Abdelgawad
2:30-2:45 Coffee Break
2:45-4:15 Microsimulation Models of Transit Operations (Lab) - Othman
4:15-4:30 Closing Session: Attendance Certificate Presentation

BRENDON HEMILY

Dr. Brendon Hemily is an independent consultant with more than 40 years of experience working with the transit industry in Canada and the US, and he serves as Senior Advisor for the Transit Analytics Lab.

He has been involved in a wide range of projects related to the implementation of innovative service concepts and the effective use of advanced technology. Previously, he was Manager of Research and Technical Services at the Canadian Urban Transit Association where he worked for 15 years.

KAREEM OTHMAN

Kareem Othman is a Postdoctoral Fellow at the Transit Analytics Lab (TAL), University of Toronto. Kareem has extensive experience in developing simulation models using a range of traffic software such as AIMSUN, Vissim, and Synchro.

He has been involved in multiple research projects that explore the benefits and impacts of emerging technologies, such as vehicle connectivity and electrification, on public transit operations with multimodal corridor control taken into consideration.

AMER SHALABY

Amer Shalaby is Bahen-Tanenbaum Professor in Civil Engineering and Founding Director of the Transit Analytics Lab at the University of Toronto, with more than 30 years of research and consulting experience in Canada and internationally in the areas of transit planning, scheduling and intelligent transit systems.

His research has been published widely in peer-reviewed journals and international conference proceedings. He has served on various transit committees of the Transportation Research Board, and he sits on the editorial boards of multiple scientific journals.

DIEGO DA SILVA

Diego Da Silva is a Postdoctoral Fellow at the University of Toronto, specializing in Public Transit Analytics and learning methods.

His research spans equity and accessibility, demand forecasting, electric bus operations, intelligent fare systems, open transit data architecture, and service reliability. With a PhD in Computer Science and prior consulting experience in Advanced Analytics and Digital Transformation, Dr. Da Silva bridges academic insight and practical transit innovation.

NIGEL WILSON

Nigel Wilson is Emeritus Professor of Civil and Environmental Engineering at MIT focusing on urban public transport.

He is Founding Director of the MIT Transit Lab, a major long-term collaborative research program with leading global public transport agencies including Transport for London (UK), MTR (Hong Kong) and the MBTA (US) which focuses on making better use of smart card and other automatically collected data to support decision-making throughout the agency. During sabbatical leaves from MIT, Professor Wilson worked in three large transit agencies, the MBTA, Metro Transit and TfL, and has served as consultant to a number of other North American transit authorities. He taught a short course in transit planning at MIT for twenty years which had a cumulative enrollment of over 400 transit professionals.

HOSSAM ABDELGAWAD

Dr. Hossam Abdelgawad has 20 years of experience in developing simulation models using a wide range of traffic software/tools.

He has ample experience in building models using AIMSUN, Vissim, UAF, DynusT, HCS, Synchro, SimTraffic, EMME and Dynameq.

ERIC MILLER

Professor Eric Miller is a recognized expert in integrated land use transportation modelling and demand forecasting.

He is the developer of GTAModel, a “best practice” regional travel demand modelling system used widely to forecast travel demand in the Greater Toronto Area. He is co-author of the textbook Urban Transportation Planning: A Decision-Oriented Approach.

CONTACT DETAILS

For inquiries about the course, please contact:

Diego Da Silva, Course Manager

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