



Advanced Choice Modelling Methods with Applications in Transportation and Urban Systems

Course Coordinators

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Course Dates: 3rd to 6th AUGUST 2026

Last day to apply: 20 JULY 2026

Mode of Instruction: Offline (IISc Campus). Limited accommodation spots available on or near IISc campus.

Who will benefit?

Bachelor's degree holders, Masters students, PhD Students, faculty, and industry professionals in the fields of transportation, urban planning, marketing research, economics, statistics and econometrics, geography, regional science, civil engineering, management/business studies, etc.

Registration link: <https://iisc.online/shortterm/home.html>

Contact Us

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Indian Institute of Science (IISc) Bangalore
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Phone: 080 2293 2055/2491/2247
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Scan here to apply



Course Fee per participant

- INR 8,500 + GST for students.
- INR 18,000 + GST for non-students from academic institutions and R&D units.
- INR 25,000 + GST for participants from industry.
- INR 45,000 + GST for participants from institutions outside India.



Course Objectives

This course covers the theory and advanced methods of choice modelling, with applications drawn from travel behaviour analysis in emerging urban settings with new modes such as shared mobility, ride hailing, integrated multimodal transit, and electric vehicles. Assuming familiarity with the basic choice modelling methods such as the multinomial logit and maximum likelihood estimation, the course will quickly delve into advanced model formulations and estimation methods. Equal emphasis will be given to empirical model specification and behavioural interpretation issues, including causality, and behavioural heterogeneity. In addition to theories and modelling methods, importance is given to hands-on estimation, specification, and interpretation of choice models on real-life empirical datasets.

Lectures in the course will include a mix of PowerPoint presentations and chalk-and-board sessions. The lectures will be accompanied by software laboratory sessions to provide hands-on experience with model formulations and estimation methods. **Open-source codes written in Python and other statistical packages will be provided for the software sessions.**

Course participants need to bring their laptops for hands-on software laboratory sessions involving estimation and interpretation of choice models. No computers or laptops will be provided at the site.

Course Contents

- Review of utility-based choice theories, multinomial logit, and maximum likelihood estimation
- Mixture models, Multinomial probit models, models with stochastic variables
- Multivariate dependent variable models
- Parameter identification in basic and advanced choice models
- Multiple discrete-continuous choice models (MDCEV, etc.)
- Advanced estimation methods
- Hands-on modelling lab sessions covering estimation, interpretation, and application