

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
COLLEGE OF ENGINEERING
DEPARTMENT OF TRANSPORT ENGINEERING AND LOGISTICS
ABET COURSE SYLLABI

ICT2213 TRAVEL DEMAND MODELLING

Credits and contact hours:	10 UC credits / 10 hours (3 h. Lectures; 1,5 h. Assistantship; 5,5 h. Independent learning experiences)
Instructor's name:	Juan de Dios Ortúzar
Course coordinator's name:	Juan de Dios Ortúzar
Textbook:	ORTUZAR, J. de D. (2012) Modelos de Demanda de Transporte. 3rd Edition, Ediciones Universidad Católica de Chile, Santiago.
Course Catalog Description:	This course provides students with the knowledge required: (i) to identify and use the basic techniques to predict travel demand; (ii) to build first-level demand models based on different theories about the behaviour of transport system users, and (iii) to identify and use the statistical techniques required to estimate and apply these models.
Prerequisite Courses:	ICT2904 Transportation Systems Engineering
Co-requisite Courses:	None
Status in the Curriculum:	Required
Course Learning Outcomes:	<ol style="list-style-type: none">1. Know the basic techniques (statistics and fieldwork) involved in collecting, correcting and expanding data appropriate to model travel demand.2. Know the fundamentals and the classic techniques used in practice to model travel demand in the context of a strategic aggregate supply-demand equilibration model.3. Know and be able to use the basic statistical and computational tools required to estimate/calibrate the main aggregate travel demand models (trip generation, trip distribution and modal split) and apply them to make forecasts in a strategic planning context.4. Know and be able to use the basic statistical and computational tools required to estimate first-level disaggregate mode choice models (multinomial and nested logit models) using both revealed and stated preference data, and to apply them to produce policy forecasts.

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- Relation of Course to ABET Criteria:**
- a. Knowledge of mathematics, science and engineering
 - b. Design and conduct experiments: analyze and interpret data
 - c. Design a system, component, or process
 - e. Identify, formulate, and solve engineering problems
- Professional and ethical responsibility
- g. Effective communication
 - h. Broad education necessary for global, economic, environmental and societal context
 - j. Knowledge of contemporary issues
 - k. Techniques, skills, and modern tools for engineering practice.

- Topics covered:**
- 1. Introduction and basic concepts
 - 2. Data collection methods
 - 3. Aggregate travel demand models
 - 4. Discrete choice models
 - 5. Further topics: car ownership forecasting and value of time.

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