Course Information	
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Course title	Traveler Behavior Analysis
Semester	109-2
Designated for	COLLEGE OF ENGINEERING DEPARTMENT OF CIVIL ENGINEERING
Instructor	YU-TING HSU
Curriculum Number	CIE5104
Curriculum Identity Number	521 U8850
Class	
Credits	3.0
Full/Half Yr.	Half
Required/ Elective	Elective
Time	Tuesday 2,3,4(9:10~12:10)
Remarks	Restriction: within this department (including students taking minor and dual degree program) The upper limit of the number of students: 20.
Ceiba Web Server	http://ceiba.ntu.edu.tw/1092CIE5104_TBA
Course introduction video	
Table of Core Capabilities and Curriculum Planning	Association has not been established

Course Syllabus

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Course Description	This course will discuss traveler behavior within and relative to transportation systems. One major focus is to read behavioral patterns from data using a variety of econometric tools. This course will also explore the cognitive process for travel decision-making at the level of psychological analysis, ultimately seeking to derive its implications in the planning, design and operation of a transportation system.
Course Objective	Traveler behavior is the fundamental issue for analyze the performance of a transportation system. Through this course, students will learn the econometric approaches to develop behavior models describing how travelers may behave within a transportation system and how they may evaluate the associated transportation services. Such capability involves the basic understanding of how people behave within transportation systems and relative to their characteristics, principles of questionnaire design, and the mathematic and statistic properties of different models. This course also aims to explore the psychology and cognitive process in travelers' minds, which enables more detailed and more precise interpretation of traveler behavior. Further, students will be trained to think, to analyze and to criticize existing problems and models during in-class discussion and presentation, which can help them build the proficiency to face future challenges.
Course Requirement	Integrity, professionalism, and engagement
Office	每週四 17:00~18:00

	Hours	
References		1. Discrete Choice Analysis (1985). Moshe Ben-Akiva and Steven R. Lerman; MIT Press. 2. Discrete Choice Methods with Simulation, 2nd Edition (2009). Kenneth Train; Cambridge University Press.
Designated reading		Statistical and Econometric Methods for Transportation Data Analysis, 2nd Edition (2011). Simon P. Washington, Matthew G. Karlaftis, and Fred L. Mannering; CRC Press.

Grading			

No.	Item	%	Explanations for the conditions
1.	Assignments	35%	
2.	In-class participation	10%	
3.	Mid-term examination	25%	
4.	Term project	30%	

Progress

Week	Date	Topic
Week 1	2/23	Course introduction
Week 2	3/02	Fundamentals of traveler behavior I: decision-making mechanisms
Week 3	3/09	Basic statistics and econometrics I: linear regression model
Week 4	3/16	Basic statistics and econometrics II: Poisson regression model
Week 5	3/23	Fundamentals of traveler behavior II: cognitive process and traveler psychology
Week 6	3/30	Discrete choice theory I: probit and logit models
Week 7	4/06	Spring break!
Week 8	4/13	Discrete choice theory II: nested logit model
Week 9	4/20	Survey and questionnaire design (Take-home mid-term examination)
Week 10	4/27	Ordered probit model
Week 11	5/04	Mixed logit model
Week 12	5/11	Tobit model
Week 13	5/18	Duration model and survival analysis
Week 14	5/25	Structure Equations Modeling
Week 15	6/01	Fuzziness and causality
Week 16	6/08	Paper critique I
Week 17	6/15	Paper critique II
Week 18	6/22	Exitlude (no class, just for you to complete the term project)