

UPP 562_SP11
Urban Transportation Planning III: Laboratory

Time: Mondays 6:00 – 9:00 PM
Class Room: ADH2236 or SEL2058 or other site (see attached schedule)
Instructor: Kazuya Kawamura
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Phone: (312) 413-1269
Office Hour: By appointment

Course Description

This course introduces students to various techniques commonly used in urban transportation planning. Usually, in the first half of each class, I will introduce and discuss the theoretical background of specific technique(s) used by transportation professionals. In the latter half, students will learn how the techniques are actually used by conducting actual analysis. Each lab is designed to introduce students to new techniques. There is no examinations or tests for this course.

Learning Objectives

The overarching goal of this course is to foster student's ability to analyze complex problems in an analytical and rational manner.

Students will learn:

- The fundamentals of 4-step travel demand forecasting techniques
- To conduct traffic impacts analysis and prepare a report
- To calculate social cost of a major transportation capital project
- To quantify network accessibility using ArcGIS Network Analyst
- To use time-space diagram and queuing model to analyze behavior of a transportation system

Text

There is no textbook for this course. Handouts will be given in the class or distributed via Couseinfo.

Useful References

- John Edwards ed.. *Transportation Planning Handbook*. Institute of Transportation Engineers, 1999
- John Dickey, *Metropolitan Transportation Planning*. Taylor & Francis, 1983
- Khisty and Lall. *Transportation Engineering: An Introduction*. Prentice Hall 1999
- Miller and Meyer. *Transportation Planning: A Decision Oriented Approach*. McGraw Hill 1984

Requirements

Each student will submit a report for each lab assignment. Grades will be based on lab assignments (90%), and class attendance/participation (10%). You may discuss the

material with other students, but work must be performed independently and reports must be produced and submitted individually. The grades will be based on the quality of analysis as well as organization and presentation of the analysis results.

This is not a difficult course to do well if you keep up with the material. However, there are considerable amount of work to be done each week and you have to be on your toes while you are in the classroom. Conversely, **missing a class will result in a dire consequence for most students.** If you have to miss a class for an unavoidable reason, it is your responsibility to make arrangements with other students or me so that you do not fall behind.

Tentative Schedule

1/10 ¹	Full cost of transportation	Some basic concepts
1/17, 1/24	No class	
1/31 ²	Review of Lab 1 Traffic impact study (part 1)	Overview, basic economic analysis (Economic base projection, location quotient technique)
2/7 ²	Traffic impact study (part 2)	Spatial-interaction model. Land use projection and Origin-Destination table.
2/14 ²	Traffic impact study (part 3)	Shortest path and incremental traffic assignment.
2/21 ²	Traffic impact study (part 4)	Analysis of traffic conditions
2/28 ²	Traffic impact study (part 5)	Analysis of traffic conditions and alternatives
3/7 ²	Traffic impact study (part 6)	Report writing, Wrap-up
3/14 ³	Demand forecasting using TransCAD	4-step travel demand forecasting using a computer software
3/21	Spring Break!	
3/28 ²	Corridor study (part 1)	Overview
4/4 ²	Corridor study (part 2)	Mode choice model
4/11 ²	Corridor study (part 3)	Emission analysis, cost effectiveness analysis
4/18 ³	Transit LOS analysis using ArcGIS (part 1)	Transit LOS method
4/25 ³	Transit LOS analysis using ArcGIS (part 2)	Gravity-type accessibility index method

1 - meet in ADH2236

2 - meet in 2058 SEL

3 - location to be determined