School of Community and Regional Planning (SCARP)
University of British Columbia
DRAFT COURSE OUTLINE

Course Number	**PLAN 548L**
Course Credit(s)	**3.0**
Course Title	**Urban Transportation Systems**
Term	**2018-2019 Winter Term 1**
Day/Time	**Wednesdays**

Cross-listed: CIVL 586

Instructor	Alex Bigazzi
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Office Hours	By appointment

Short Course Description

This course provides an overview of multi-modal urban transportation systems, including key characteristics, interactions, and analytical techniques. There are no prerequisites for the course, but some quantitative analysis is required and students should be comfortable working with spreadsheet software.

Course Format

This course is primarily lecture-based. There will be homework assignments, in-class exams, and a term project.

Course Overview, Content and Objectives

This course provides an overview of multi-modal urban transportation systems, including key characteristics, interactions, and analytical techniques. Concepts covered include transportation networks as systems, microeconomic theory for supply and demand of transportation services, social cost analysis for transportation, and decision making for transportation plans and projects. Specific applications include road pricing, transport market regulation, new fuel and vehicle technologies, urban transport infrastructure investments, traffic congestion, and advanced operations systems such as ITS. At the end of the course students should be able to apply an economic framework to evaluation of an urban transportation system and identify, calculate, and critique performance measures for a transportation system or project.

Learning Outcomes

After completing this course, students will be able to:

- Identify key components and characteristics of urban transportation systems
- Demonstrate understanding of important interactions among transportation system components and with other urban systems
- Demonstrate understanding of both technical and theoretical aspects of full social cost accounting for transportation systems
- Apply an economic framework to evaluation of an urban transportation system or project
- Identify, calculate, and critique performance measures for a transportation system or project

Additional Course Requirements
N/A

Attendance
Attendance is strongly encouraged. If a student misses a class session, it is their responsibility to check Connect for any materials and to check with a classmate for any announcements or other information not posted on Connect. No make-up exams will be given; if a mid-term exam is missed due to illness, the final exam will be weighted more in the final grade calculation. All students must take the final exam to pass the class.

Evaluation Criteria and Grading
Final course percentage grades will be calculated using the following approximate weights (subject to change until the first day of class – see syllabus on Connect):

Assignments	25%	Approximately 5 homework assignments will be posted on Connect
Term project	15%	Details will be provided the first week of class
Midterm exam	25%	Closed-book in-class written exam; 1-sided, entirely handwritten and original notes sheet allowed; students must comply with APEGBC policies for calculators
Final exam	30%	Comprehensive, closed-book in-class written exam; 2-sided, entirely handwritten and original notes sheet allowed; students must comply with APEGBC policies for calculators
Participation	5%	Participation is evaluated based on classroom civility and thoughtful questions and contributions to classroom discussions

Final course letter grades will be assigned as indicated on the UBC website: http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,42,96,0

Required Readings and Videos
Sinha and Labi, *Transportation Decision Making: Principles of Project Evaluation and Programming*, Wiley, 1st Ed., 2007, ISBN-13: 978-0471747321
(an electronic version is available on the UBC library website)

Recommended Readings
- Small, Kenneth, and Erik T. Verhoef. *The Economics of Urban Transportation*. New York, NY: Routledge, 2007. ISBN: 9780415285155.
- Gomez-Ibanez, Jose, William B. Tye, and Clifford Winston, eds. *Essays in Transportation Economics and Policy: A Handbook in Honor of John R. Meyer*. Washington, DC: Brookings Institution Press, 1999. ISBN: 9780815731818
- Cascetta, Ennio. *Transportation Systems Analysis: Models and Applications*. Springer Science & Business Media, 2009.
- Steinemann, Anne. *Microeconomics for Public Decisions*. Askmar publishing, 2011.
- Transportation Economics Wikibook (website): https://en.wikibooks.org/wiki/Transportation_Economics/Introduction
- Transportation Benefit-Cost Analysis (website): http://bca.transportationeconomics.org/
- Victoria Transport Policy Institute, *Transportation Cost and Benefit Analysis: Techniques, Estimates and Implications*, 2nd edition, 2009. http://www.vtpi.org/tca/

Course Schedule

This schedule is tentative

Week	Topic
1	Introduction to urban transportation systems
2	Performance measures for urban transportation systems
3	Performance measures continued
4	Urban transport demand estimation techniques
5	Demand estimation continued
6	Transportation costs: types of costs and cost estimation techniques
7	Cost estimation continued
8	The value of travel time: concepts and analysis techniques
9	Travel time value estimation continued
10	No class – university closed for Remembrance Day
11	Decision making frameworks and techniques for urban transportation systems
12	Decision making continued & student presentations
13	Student presentations and review

Special Needs

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.