

USP 544: Urban Transportation Planning Syllabus

Wednesdays, 1:00 p.m. to 3:50 p.m.

Room 220 Urban Center (URB)

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Course Overview

This course is an introduction to the fundamental concepts and methods used in urban transportation planning, primarily in the U.S., but with some references to advanced practices in other countries. Transportation planning is a multi-disciplinary field, characterized by interwoven elements of politics, legislation, engineering design, economics, sociology, finance, management, and marketing. This course is designed to expose students to each of these disciplinary perspectives and to develop the critical thinking skills necessary to effectively analyze urban transportation planning problems and formulate well-conceived solutions. Of particular emphasis will be development of the ability to digest and analyze moderately complex problems and distill them into the kind of information that can be used by busy decision makers. Because transportation planning covers such a wide array of activities there will not be enough time to cover any one topic in depth; however, additional depth can be acquired through other courses offered at USP and elsewhere at the university.

Course Pre-requisites

The expected preparation for this course are:

- a basic descriptive and inferential statistics, or completion of USP 535; and
- intermediate-level microeconomics course, or completion of USP 515.

Students without this preparation should consider taking USP 544 at a later date, after first remedying any deficiencies, or taking a different course to fulfill their degree requirements, such as USP 456/556 "Urban Transportation: Problems and Policies."

Course Materials

There is one required textbook for the class, with additional readings handed out by the instructor in class or via the course website, which utilizes the University's the Blackboard System. There is one required textbook for the course, *Transportation Decision Making: Principles of Project Evaluation and Programming*, by Kumares C. Sinha and Samuel Labi.

The course web site will include this syllabus, additional reading materials, assignments, and a class email message forum. It may be accessed from <http://www.psuonline.pdx.edu/>. Log on using your ODIN account name and password.

Goals and Objectives

This is a professionally-oriented course designed to cover the basics of urban transportation planning. We will be studying realistic examples of urban transportation planning problems. Throughout the course, we will be applying the lessons learned through class lectures and discussions by testing out our ideas through analysis of data. The flow of the course is to start with problem identification, and move to analytical studies, to creating project proposals, to project evaluation and selection, and finally to funding and programming.

Objectives of this course are for students to develop the following skills:

- Learn where to find and become comfortable working with the following types of information:
 - Legislation
 - Financial
 - Plans
 - Demographic
 - Economic
 - Engineering design
 - Marketing research
- Familiarity with travel forecasting and potentially other decision-support tools.
- Familiarity with basic numerical methods used in transportation planning:
 - System-level measures of effectiveness
 - Demographic and market analysis
 - Demand forecasting
 - Economic valuation methods
 - Basic level-of-service calculations
 - Basic investment cost calculations
- Ability to write technical memoranda and reports.

Assignments and Grading

In this class you will be evaluated and graded based on your performance in four different ways:

Individual Assignments (4) will consist of short exercises in which you will be asked to perform some type of analysis and report your results in a short technical memo. In most cases, the assignments will extend the exercise that we do in class. Latter assignments will be more challenging than earlier assignments; therefore, the grades earned on these latter assignments will carry more weight. (60% of grade)

Term Paper (1) The term paper will be assigned during Week 5. You will be assigned a topic of current interest in transportation planning and asked to write a 10-page white paper discussing the latest thoughts on policy and practice. Topics may be controversial, untested or involve advanced technologies, or they may involve a very specific facet of transportation planning. You will be asked to synthesize the pros and cons of the subject under consideration, and to conduct a professional literature search in which you cite as many peer-reviewed sources as possible. You will have the option to submit one preliminary draft by November 25 for review and comment. (20% of grade)

Mid-Term Quiz (1) will be approximately 60 minutes and will cover material found in the readings and lectures. In each quiz, you will be asked questions related to basic concepts, and you should be able to answer the questions without the aid of notes or books. (10% of grade)

Class Participation is expected to be on-going throughout the term. Do your best to attend class and to contribute to class discussions. “Satisfactory” participation means that you attend class regularly, pay attention, and ask questions. “Excellent” class participation means that you make an original contribution, such as sharing examples that relate to the topics covered in class and expanding the discussion. (10% of grade)

Grading Policies

According to the PSU Bulletin, “the grading system at the graduate level is defined as follows: A—Excellent; B—Satisfactory; C—Below graduate standard.” Therefore, simply doing the required work does not warrant an A grade. Your work must be excellent to receive an A grade. ***Incomplete grades.*** I will only assign an incomplete (I) grade when circumstances are consistent with PSU’s policy on incomplete grades, shown below. “Circumstances must be unforeseen or beyond [your] control.” In other words, I do not give incompletes for poor planning on your part, e.g. you got too busy with work and your other classes. If you do encounter unforeseen circumstances, approach me as soon as possible about entering into a written agreement for an incomplete grade.

From the PSU Bulletin:

“A student may be assigned an I grade by an instructor when all of the following four criteria apply:

- 1) Quality of work in the course up to that point must be C level or above.
- 2) Essential work remains to be done. “Essential” means that a grade for the course could not be assigned without dropping one or more grade points below the level achievable upon completion of the work.
- 3) Reasons for assigning an “I” must be acceptable to the instructor. The student does not have the right to demand an “I”. The circumstances must be unforeseen or be beyond the control of the student. An instructor is entitled to insist on appropriate medical or other documentation. In no case is an “Incomplete” grade given to enable a student to do additional work to raise a deficient grade.
- 4) A written agreement, signed by both the student and the instructor, should include a statement of the remaining work to be done to remove the “I” grade, and the date, not to exceed one year from the end of the term of enrollment for the course, by which work must be completed in order to earn credit toward the degree. The instructor may specify the highest grade which may be awarded upon completion; the grade awarded should not exceed the level of achievement attained during the regular course period.”

Late assignments will be marked down – one-third of a grade per day late. “One-third of a grade” is, for example, from A to A-, B+ to B, etc. (or 3.3% using the 100-point scale). As with incomplete grades, I generally do not allow students to turn things in late without assessing this penalty, except in unusual circumstances, e.g. medical emergencies. Having too much work in other classes or at work/internship does not count. All students have those challenges.

Tentative Course Outline – Fall 2009
USP 544: Introduction to Transportation Planning

Week	Topic Description	Class Dates	Readings	Assignments
1. Introduction and Overview	<ul style="list-style-type: none"> • Role and history of transportation planning and planners • Political economics of transportation planning 	09/30/09	Textbook Ch. 1 Readings on website: http://www.psuonline.pdx.edu/	Homework 1: (due 10/14) Legislation Interpretation
2. Analysis of Travel Behavior and Demand	<ul style="list-style-type: none"> • Studying travel behavior • Analyzing urban travel markets 	10/07/09	Readings on website: http://www.psuonline.pdx.edu/	Homework 2: (due 10/21) Market/Needs Analysis
3. Analysis of Facility and System Performance	<ul style="list-style-type: none"> • Studying transportation facility performance • Analyzing urban transportation systems 	10/14/09	Textbook Ch. 2 Readings on website: http://www.psuonline.pdx.edu/	Homework 1 Due
4. Demand Forecasting	<ul style="list-style-type: none"> • Network performance • Travel demand 	10/21/09	Textbook Ch. 3 Readings on website: http://www.psuonline.pdx.edu/	Homework 3: (due 10/28) Planning and Design Options Homework 2 Due
5. Planning and Design Options	<ul style="list-style-type: none"> • Facility cost and maintenance • Safety and security • Control strategies • Service planning 	10/28/09	Textbook Ch. 4-7 Readings on website: http://www.psuonline.pdx.edu/	Term Papers Assigned (due 12/09) Homework 3 Due

Topic	Description	Class Dates	Readings	Assignments
6. Mid-term	<ul style="list-style-type: none"> In-Class Mid-Term Quiz 	11/04/09		In-Class Mid-Term Quiz
7. NO CLASS	Veteran's Day--PSU Closed	11/11/09		Work on term papers!
8. Project Design and Costs	<ul style="list-style-type: none"> Project design and costing Environmental impacts of transportation projects 	11/18/09	Textbook Ch. 10-17 Readings on website: http://www.psuonline.pdx.edu/	In-class Project Design Charette Homework 4: (due 12/02) Economic Evaluation
9. Characterizing Benefits and Costs	<ul style="list-style-type: none"> Defining project alternatives Benefit-cost analysis Economic evaluation methods 	11/25/09	Textbook Ch. 8-9 Readings on website: http://www.psuonline.pdx.edu/	Submit term paper preliminary drafts for comment (optional)
10. Choosing an Investment Alternative	<ul style="list-style-type: none"> Multi-objective decision making Project and program financing 	12/02/09	Textbook Ch. 18, 20 Readings on website: http://www.psuonline.pdx.edu/	Homework 4 due
11. FINAL'S WEEK	<ul style="list-style-type: none"> No exam 	12/09/09	None	Final Term Papers Due 5 p.m. (No late submissions accepted)