SYLLABUS

Instructor information:
Kenneth Small, SSPB 2203
(949) 824-5658, ksmall@uci.edu

Class meetings:
Tues., Thurs. 2:00 – 3:20
Room: SSPB 3218

* Note: no class on Tues. Jan. 10

Description:
Microeconomic tools used in transportation analysis, and applications of them. Travel demand, cost functions, pricing, investment, and project evaluation.

Prerequisites:
Graduate standing in economics, transportation engineering, transportation science, or urban planning.
Suggested guideline: best if have any two of the following:
(1) intermediate undergraduate microeconomics;
(2) calculus including basics of matrix algebra and calculus of several variables;
(3) prior study of transportation

Course Requirements:
In addition to the readings, there will be several class presentations, four problem sets, two short essays (4-5 pages each), and a final exam. Final grades will be based on the following percentages:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Class participation</td>
<td>35%</td>
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<tr>
<td>Problem sets</td>
<td>20%</td>
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<tr>
<td>Essays</td>
<td>20%</td>
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<tr>
<td>Final exam</td>
<td>25%</td>
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WORKING TOGETHER: You may work together on problem sets in groups of up to 3; however, the solutions must be written up independently in your own words and style. Note: if you work in a group, write the name(s) of the other group member(s) on your problem set.

Required Texts:


Recommended Supplement:
**Handbook:** A. de Palma, R. Lindsey, E. Quinet, & R. Vickerman, eds., *A Handbook of Transport Economics*, Edward Elgar, 2011. A superb reference if you intend to use transportation economics in your future work; contain further details on many topics covered here. Available on Google eBook store for $48; also will be on reserve, Langston Library (after a few weeks).

Other readings are available on line from links in this syllabus; you may need to download them from a UCI computer or use a VPN in order to have UCI’s library subscription status.
COURSE OUTLINE AND READING LIST

* indicates optional reading

I. INTRODUCTION (Week 1b)

Small & Verhoef, ch. 2

Handbook, “Foreword” (by Daniel McFadden)

II. DEMAND (Weeks 1b-3)

Essays, ch. 2 (Small and Winston: “Demand”)

Small & Verhoef, ch. 2


* Handbook, ch. 8 (Walker & Ben-Akiva, “Advances in discrete choice: mixture models”)

* Handbook, ch. 7 (Hensher, “Valuation of travel time savings”)

* Handbook, ch. 10 (Pinjari & Bhat, “Activity-based travel demand analysis”)

III. COSTS (Weeks 4-5)

Essays, ch. 3 (Brauetigam: “Costs”)


Small & Verhoef, ch. 3. [Except for the following sections, which are optional: “Analysis of Shock Waves”; “Car-Following Models”; 3.4.2; 3.4.4; 3.5.1; 3.5.2.]


Essays, ch. 11 (Kain: “The Urban Transportation Problem”)


* Handbook, ch. 12 (Basso, Jara-Diaz, & Waters, “Cost functions for transport firms”)  

IV. PRICING & INVESTMENT (Weeks 6-8a)

Small & Verhoef, ch. 4 [except for the following sections: First-best Pricing for Networks of Bottlenecks; First-best Pricing with Alternative Dynamic Congestion Technologies; Two bottlenecks in parallel; Some Extensions; Sections 4.2.2 - 4.2.4].  
Small & Verhoef, sections 5.1.1, 6.1.1

Congested Highways

Essays, ch. 6, pp. 198-215 only (Mohring: “Congestion”)


Parking, Heavy Vehicles


* Handbook, ch. 31 (Arnott, “Parking Economics”)

**Investment & Induced Travel**


**Transit, Rail**


**Fuel Taxation**


V. PROJECT EVALUATION (Weeks 8b-10)

**Methods**

Essays, ch. 5 (Small: “Project Evaluation”)

**Examples**


**Incidence**


**Forecasting**


**Land-Use Impacts**

Baum-Snow, Nathaniel (2007) “Did Highways Cause Suburbanization?” Quarterly Journal of Economics, 122(2): 775-805. (If you have trouble getting the full pdf file, try this link in Internet Explorer.)

**External Benefits**


