

USP 537 ECONOMICS OF URBAN TRANSPORTATION – WINTER 2024

Instructor: Dr. Joe Broach

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Office Hours: Thurs 10a-11:30a, URBN 320B drop in; other times or Zoom possible by appointment

Class Time: W 10a-12:40p in Room URBN 304

Course Website: <http://web.pdx.edu/~jbroach/537>

Course Objectives

Economics, at its core, is the study of scarce resources and how various actors—individuals, firms, governments—make tradeoffs in allocating those resources. For those of us who have studied urban transportation systems, problems, and policies, issues of competition for scarce resources will sound familiar. Funding, street space, and of course time are just some of the constraints we face when trying to design and improve the ways people and goods move in and around cities. Economics provides many useful tools, measures, and theories that support urban transportation planning and policy.

The diligent student will leave this course with a new toolkit for approaching both practical and theoretical questions related to transportation planning and policy. They will learn to “speak the lingo” of economics as it applies to our field. They will be sharp and critical consumers and interpreters of economic analyses that they encounter. Most importantly, they will have a new lens through which to frame the urban landscape, one centered on balancing efficient and equitable outcomes over different time horizons.

Specific focus areas within transportation economics include:

- Demand and markets
- Supply and costs
- Pricing and externalities
- Project evaluation and cost-benefit analysis
- Financing transportation
- Government regulation and de-regulation

While the course is US-focused, we make use of international experience to understand alternative policies and outcomes.

Readings

Readings are taken from multiple sources, and a few slots may be reserved for potential “hot off the press” readings or updates to ongoing debates. Any course readings not in required textbooks will be made freely available to you.

- *Essays in Transportation Economics and Policy* by Gomez-Ibanez et al. (denoted as [GTW] below) – available as hard copy or online via PSU Library
- *Curb Rights* by Klein, Moore and Reja (denoted as [KMR] below) – hard copy to purchase or via course reserve at the PSU library

- The Economics of Urban Transportation by Small and Verhoef [SV] (hard copy only, not available at PSU library)
- *Still Stuck in Traffic* by Downs (available as a free e-book via PSU library, or hard copy from the bookstore or other seller); not an economic text *per se*, but a great example of “thinking economically” and of communicating economic concepts to a broad audience. Although optional, many concepts from the book will arise in class presentations, and I highly recommend reading the whole book when you have the time and inclination!
- Other academic journals and agency reports [denoted as “website” below]...

Each week’s assigned readings should be completed before class, and during some weeks select students will be assigned as special topic discussion leads. Discussion leads will come prepared with at least two topics, tools, or ideas they found particularly interesting (and/or confounding!) and will help guide class discourse around those topics.

Grading & Exams

There are two options for how to spend your scarce time and resources this term (our fist tradeoff!). Students who want to focus more on the general economic toolkit and methods will choose Option #2, while those wanting to take a deeper dive into a specific research topic will choose Option #1. You must choose a grading option *before* the midterm exam.

| Item | Date | Time | Option #1 (3 prob. sets, paper) | Option #2 (4 prob. sets, no paper) |
|---------------------|-----------|-----------------|---------------------------------------|--|
| Midterm Exam | 02/21 (W) | 10:00am-11:30am | 10% | 15% |
| Final Exam | 03/19 (T) | 8:00am-9:30am | 15% | 25% |
| Problem Sets | | Various | 15% | 30% |
| Class Participation | | Various | 30% | 30% |
| Research Paper | 3/21 (R) | 12:00pm | 30% | -- |

USP 537 Course Calendar

| I. Introduction & Microeconomic Foundations - Week 1 (01/10) & Week 2 (01/17) |
|---|
| <p>***No class in Week 1 (01/10)*** – independent reading and review of syllabus. No special topics or discussion leaders in Weeks 1-2.</p> <ul style="list-style-type: none"> <input type="checkbox"/> [GTW] Chap 11 – “The Urban Transportation Problem: A Reexamination and Update” <input type="checkbox"/> [KMR] Chap 1 – “Introduction” <input type="checkbox"/> [KMR] Chap 2 – “The Triumph of the Automobile” <input type="checkbox"/> [KMR] Chap 3 – “The Fizzle of Traditional Transit” <input type="checkbox"/> [website] “Cities on three continents: A study of post-COVID ridership” <p><u>Supplementary readings:</u> [AD] Intro & Chapters 1-2</p> |
| II. Demand for Transportation - Week 3 (01/24) & Week 4 (01/31) |
| <p>***Due: Problem Set #1 (01/31)*** (<i>moved to next week due to weather delay</i>)</p> <ul style="list-style-type: none"> <input type="checkbox"/> [GTW] Chap 2 – “The Demand for Transportation: Models and Applications” <input type="checkbox"/> [GTW] Chap 10 – “Determinants of Motorization and Road Provision” <input type="checkbox"/> [website] Litman, T. (2007). Understanding Transport Demands and Elasticities: How Prices and Other Factors Affect Travel Behavior. Victoria Transport Policy Institute. <p><u>Supplementary readings:</u></p> |

[website] Button, K. (2010) *Transportation Economics*. Chap 4 – “The Demand for Transport”

[SV] Chapter 2 covers similar ground as GTW Ch2, but with differences in presentation and examples. Useful as a secondary reference now or in future studies.

[website] Graham, D. J., & Glaister, S. (2004). Road traffic demand elasticity estimates: a review. *Transport reviews*, 24(3), 261-274.

[AD] Intro & Chapters 3-4

III. Transportation, Land Use and Accessibility – Week 5 (02/07)

Due: Problem Set #1 (02/07)

- [GTW] Chap 12 – “Transportation and Land Use”
- [GTW] Chap 13 – “Accessibility and Economic Opportunity”
- [website] Gobillon, L., Selod, H., & Zenou, Y. (2007). The mechanisms of spatial mismatch. *Urban studies*, 44(12), 2401-2427.

Supplementary readings:

[website] Heilbrun. (1987). “Site Rent, Land-Use Patterns, and the Form of the City.”

[website] Nelson, A. C., Appleyard, B., Kannan, S., Ewing, R., Miller, M., & Eskic, D. (2013). Bus Rapid Transit and Economic Development: Case Study of the Eugene-Springfield BRT System. *Journal of Public Transportation*, 16(3).

IV. Project Evaluation / Cost-Benefit Analysis– Week 6 (02/14) and Week 7 (2/21)

Due: Problem Set #2 (02/14, paper copy in class or before)

Due (2/14) via email or in-class – Select your grading option (no going back!)

Midterm Exam (02/21) @ 10a – 11:30am

- [GTW] Chap 5 – “Project Evaluation”
- [website] Lakshmanan, T. R., & Chatterjee, L. R. (2005). Economic Consequences of Transport Improvements. Access, 26:28-33. University of California Transportation Center.
- [website] Gotschi, T. (2011). Costs and benefits of bicycling investments in Portland, Oregon. *Journal of Physical Activity and Health*, 8(s1), S49-S58.

Supplementary Readings

(website) “Benefit-Cost Analysis for Transportation Projects.” (2024, January). MnDOT. <https://www.dot.state.mn.us/planning/program/benefitcost.html>

(website) Liu, J.H. and Shi, W. (2017). Impact of Bike Facilities on Residential Property Prices. *Transportation Research Record: Journal of the Transportation Research Board*, 2662, 50-58.

(SV) Chapter 5 “Investment” (especially the Cost-benefit Analysis subsection, provides a more technical version of the GTW essay, for those so inclined, or for future reference)

V. Supply, Costs, and Externalities – Week 8 (02/28)

Due: Research Paper Proposal (02/28) – Grading Option #1 ONLY

- [GTW] Chapter 3 – “Learning about Transport Costs”
- [KMR] Chapter 4 – “Why Traditional Transit Fizzles”
- [website] Litman, T. (2022, March). Transportation Cost Estimates A summary of the costs to users and communities of various travel modes. <https://www.vtppi.org/tce.pdf>

- [website] Broach, J., Dill, J., & Gliebe, J. (2012). Where do cyclists ride? A route choice model developed with revealed preference GPS data. *Transportation Research Part A: Policy and Practice*, 46(10), 1730-1740.
Supplementary Readings
(AD) Chapter 2 (repeated from Week 1)
(SV) Chapter 5 (Capacity Choice for Highways section)
(SV) Chapter 3 (You can skim the most technical portions, but Small includes some excellent, concise summaries of key cost issues throughout. Encourage at least skimming.)

VI. Pricing and Transportation Finance – Week 9 (03/06) & Week 10 (03/13)

Due: Problem Set #3 (03/06)

- [AD] Chapter 10 & Appendix B
- [website] Schweitzer, L., & Taylor, B. D. (2010). Just road pricing. *ACCESS Magazine*, 1(36), 2-7.
- [website] Small, K.A. (2005). Road Pricing and Public Transit. *ACCESS Magazine*, 26, Spring, 2-7.
- [website] Rufolo, A. M., & Bertini, R. L. (2003). Designing alternatives to state motor fuel taxes. *Transportation Quarterly*, 57(1), 33-46.
- [website] [CBO/Shirley] *The Status of the Highway Trust Fund: 2023 Update*.
Supplemental Reading
[GTW] Chapter 4 – “Pricing”
[KS] Chapter 5 (but you can ignore pp. 127-137 on dynamic congestion unless truly motivated; the rest is excellent)

Finals Week 11

Final Exam (Tues 3/19 8:00 – 9:50a) – Final exam will be held in the usual classroom during our assigned time slot (sorry!) see <https://www.pdx.edu/registration/final-exams-winter-2024>

Due: Research Paper (03/21 before noon, to me in person, URBN 350 front desk folder, or a digital copy emailed to me) – Grading track #1 only

Special Topics Readings

During some weeks, randomly assigned class members will be assigned to dive deeper into a related topic or sub-area of interest. Assigned students will choose at least one of the topical readings to complete before class that week. Bring to class 2-3 one-sentence, typed discussion topics/hot takes/questions from the reading that you think will engage the class. Hopefully, these discussions help to seed ideas for research papers or future study!

There is no specific assignment for the larger class on a particular special topic, but they will earn participation points for engaging in the student-led discussion. Of course, there’s no rule against reading some or all of the topical readings even if you aren’t assigned to that week.

All topical readings will be available in a separate section on the course website.

Week 4: Parking (1/31)

Pierce, G. & Shoup, D. (2013). Getting the Prices Right, *Journal of the American Planning Association*, 79:1, 67-81, DOI: 10.1080/01944363.2013.787307

Anderson, S. P., & de Palma, A. (2004). The economics of pricing parking. *Journal of Urban Economics*, 55(1), 1-20.
Inci, E. (2015). A review of the economics of parking. *Economics of Transportation*, 4(1), 50-63.

Week 5: Spatial Mismatch (2/7)

Hellerstein, J. K., Neumark, D., & McInerney, M. (2008). Spatial mismatch or racial mismatch?. *Journal of Urban Economics*, 64(2), 464-479.

Grengs, J. (2010). Job accessibility and the modal mismatch in Detroit. *Journal of Transport Geography*, 18(1), 42-54.

Andersson, F., Haltiwanger, J. C., Kutzbach, M. J., Pollakowski, H. O., & Weinberg, D. H. (2018). Job displacement and the duration of joblessness: The role of spatial mismatch. *Review of Economics and Statistics*, 100(2), 203-218.

Week 8: Alternative Transit (2/28)

[KMR] Chapters 9 & 10

Ortegon-Sanchez, A., & Tyler, N. (2016). Towards multi-modal integrated mobility systems: Views from Panama City and Barranquilla. *Research in Transportation Economics*, 59, 204-217.

Cervero, R. (2013). Bus Rapid Transit (BRT): An Efficient and Competitive Mode of Public Transport. *IURD Working Paper 2013-01*.

Week 9: Congestion Charging Schemes (3/6)

[TMRB]. (2023, November). Congestion Pricing in New York. <https://new.mta.info/document/127761>.

Leape, J. (2006). The London congestion charge. *The Journal of Economic Perspectives*, 20(4), 157-176.

Albalade, D., & Bel, G. (2009). What local policy makers should know about urban road charging: Lessons from worldwide experience. *Public administration review*, 69(5), 962-974.

Vonk Noordegraaf, D., Annema, J. A., & Van Wee, B. (2014). Policy implementation lessons from six road pricing cases. *Transportation Research Part A: Policy and Practice*, 59, 172-191.

COURSE POLICIES

Portland State is committed to fostering a safe, productive learning environment. Title IX and our school policy prohibit discrimination on the basis of sex, which regards sexual misconduct — including harassment, domestic and dating violence, sexual assault, and stalking. **We expect a culture of professionalism and mutual respect in our department and class.** Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination to PSU's Title IX Coordinator, the Office of Equity and Compliance or the Dean of Student Life and **cannot keep information confidential.** You may report any incident of discrimination or discriminatory harassment, including sexual harassment, to either the Office of Equity and Compliance or the Office of the Dean of Student Life. If you would rather share information about sexual harassment or sexual violence to a confidential employee who does not have this reporting responsibility, you can contact a confidential advocate at 503-725-5672 or by scheduling on-line or by contacting another confidential employee found on the sexual misconduct resource webpage. See <https://www.pdx.edu/sexual-assault/get-help> for further information.

Academic Misconduct Policy

You are expected to display academic integrity and honesty. Academic dishonesty will not be tolerated. The PSU Student Code of Conduct defines academic dishonesty as follows:

(1) Academic dishonesty. Academic dishonesty is the act of knowingly or intentionally seeking to claim credit for the work or effort of another person or participation in such acts. This includes, but is not limited to: (a) cheating, (b) fraud, (c) plagiarism, such as word for word copying, using borrowed words or phrases from original text into new patterns without attribution, or paraphrasing another writer's ideas; (d) The buying or selling of all or any portion of course assignments and research papers; (e) Performing academic assignments (including tests and examinations) for other persons; (f) Unauthorized disclosure or receipt of academic information; (g) Falsification of research data; and (h) Unauthorized collaboration. (<http://www.pdx.edu/dos/psu-student-code-conduct>)

Students are responsible for knowing both in-class behavior and rules governing use of materials in academic work. Plagiarism includes both other students' work and Wikipedia (or anything from the internet) that is not properly cited. Any student found plagiarizing work or violating any part of PSU's academic integrity policy will receive a failing grade for the course.

Access and Inclusion for Students with Disabilities

PSU values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. The Disability Resource Center (DRC) provides reasonable accommodations for students who encounter barriers in the learning environment.

If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. The DRC is located in Suite 116 of the Smith Memorial Student Union, 503-725-4150, drc@pdx.edu, <https://www.pdx.edu/drc>.

- If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations.
- Students who need accommodations for exams are expected to schedule their tests to overlap with the time the class is taking the test, unless another arrangement is agreed on in advance of the exam.
- For information about emergency preparedness, please go to the Fire and Life Safety webpage (<https://www.pdx.edu/environmental-health-safety/fire-and-life-safety>) for information.

Calendar/Schedule

Course calendar is tentative and is subject to change as the instructor deems appropriate. Please check online for any updates. If you have to miss class, it is your responsibility to gather any information or materials that you missed that day, either via classmates or the instructor.