

ECON 4555
Transportation Economics
FALL 2014
MWF 11:00-11:50, ECON 117

COURSE SYLLABUS

Overview:

This is a course in transportation economics and policy for undergraduates. Students will learn how to use economic theory and empirical tools to analyze transportation markets and policies. The course combines topics from environmental economics and industrial organization including: aggregate demand for transportation; disaggregate demand and mode choice; externalities and the costs of driving; and policy instruments such as fuel taxes, the corporate average fuel economy program (CAFE), low carbon fuel standards and congestion pricing. Instruction will emphasize the current literature and examples from recent policies.

Office Hours and Contact Information:

Professor: Jonathan Hughes
Office location: Economics 4B
Office hours: Mondays and Wednesdays from 2:00-3:30 pm (or by appointment)
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Class web site: D2Learn

Recommended Texts:

There is no required textbook for this course. However, much of the material for the course will be drawn from the text below. Readings from the text are denoted as “Essays” in the course syllabus.

Essays in Transportation Economics and Policy: A Handbook in Honor of John R. Meyer, by Gomez-Ibanez, Tye, and Winston, 1999, The Brookings Institution.

Copies are on reserve at Norlin Library. The text is also available as an ebook from the CU NetLibrary (see Chinook catalog) and for purchase online.

Reading/Class Participation:

Throughout the course I will assign readings to supplement the lecture material. Readings noted in the syllabus can be found on the web. Those not on the web will be posted to the course web site several days in advance. Please come to class each day ready to discuss the assigned reading. Please **prepare a ½ page executive summary** of each paper that discusses: the key

findings of the paper; major assumptions or limitations of the analysis; issues of relevance for policymaking. I will randomly select several of these summaries during the semester to evaluate as part of your class participation grade.

*** Denote readings in the course schedule for which you are to turn in an executive summary.**

Grading:

15% Class participation

25% Problem sets

30% Midterm exam

30% Final exam

Problem Sets and Empirical Exercises:

Throughout the course students will be assigned problem sets that represent a mix of theory and empirical work. For empirical exercises, we will be using data from recent studies and published government reports. The class will meet in a campus computer cluster to begin these exercises, though students may be expected to complete these assignments outside of class. An important goal of this course is to expose students to the data sources used to analyze transportation markets and policies. Due dates are listed on the course syllabus.

Examinations:

There will be an in class mid-term exam on **Wednesday October 29, 2014** and a final exam on **Sunday December 14, 2014 from 7:30 – 10:00 pm.**

Late Assignments and Missed Examinations:

Problem sets and other assignments are due before the start of class on the date due. No late assignments will be accepted except in the case of documented medical or family emergency. No make-up exams will be given. If you foresee a conflict, contact me as soon as possible in order to make alternate arrangements for you to complete the requirements of this course.

Lecture Notes: My lectures will make use of both the chalkboard and Powerpoint. The lecture slides and graphs can be downloaded from the class web site, available through D2Learn. Please visit this class website often.

Campus Policies: I will adhere to all campus policies with respect to disabilities, religious observances, appropriate behavior, discrimination and harassment, and academic conduct. See <http://www.colorado.edu/policies/>

Tentative Course Outline:

Week 1: Overview: transportation markets, energy and the environment

August 25. Introduction - course goals, thinking like an economist

August 27. Market for driving

August 29. Gasoline demand

Reading: *Hughes, Knittel and Sperling. "Evidence of a Shift in the Short-Run Price Elasticity of Gasoline Demand." *Energy Journal* (2008).

Week 2: Aggregate demand for transportation

September 1. Labor Day Holiday – **No class**

September 3. Gas prices, fuel economy and vehicle choice

Reading: *Busse, Knittel and Zettelmeyer. “Are Consumers Myopic? Evidence from New and Used Car Purchases” *American Economic Review* (2012).

September 5. **Computer Lab BESC 385**. Introduction to empirical analysis

Reading: “What is econometrics”

Problem Set 1 Distributed

Week 3: Environmental economics review

September 8. Measures of value, measures of waste, efficiency

September 10. Externalities, marginal private and marginal social cost

September 12. **No Class - Problem Set 1 Due to Economics Office 210**

Week 4: Costs of driving

September 15. Driving-related externalities

Reading: *Parry, Walls and Harrington. “Automobile Externalities and Policies” *Resources for the Future* (2007).

September 17. Finding the “Right Gasoline Tax”

Reading: *Parry and Small. “Does Britain or the U.S. have the right gasoline tax?” *American Economic Review* (2005).

September 19. **Computer Lab BESC 385**. Air pollution

Reading: “Essays” Chapter 7

Problem Set 2 Distributed

Week 5: Costs of driving

September 22. Air pollution cont.

Reading: *Kellogg and Auffhammer. “Clearing the Air: Effect of Gasoline Content Regulations on Air Quality” *American Economic Review* (2011).

September 24. Unintended consequences of clean fuel regulation

Reading: *Brown et. al. “Reformulating Competition” *Journal of Environmental Economics and Management* (2008).

September 26. Climate change

Reading: IPCC 4th AR Summary for Policymakers

Problem Set 2 Due

Week 6: Costs of driving – continued

September 29. Carbon trading

Reading: TBD

October 1. Low Carbon Fuel Standards

Reading: *Holland et. al. “Some Inconvenient Truths About Climate Change Policy: The Distributional Impacts of Transportation Policies” *National Bureau of Economic Research* (2011).

October 3. **Computer Lab BESC 385**. Renewable fuel standards

Problem Set 3 Distributed

Week 7: Costs of driving – continued

October 6. Biofuels

Reading: *Anderson. “The Demand for Ethanol as a Gasoline Substitute” *Journal of Environmental Economics and Management* (2011).

October 8. Fuel economy standards

Reading: “Essays” Chapter 8, *Jacobson. “Fuel Economy and Safety: The Influences of Vehicle Class and Driver Behavior” *American Economic Journal: Applied Economics* (2012).

October 10. Highway fatalities

Reading: *Grabowski and Morrissey. “Do higher gasoline taxes save lives?” *Economics Letters* (2006).

Problem Set 3 Due

Week 8: Costs of driving – continued

October 13. Highway fatalities revisited

Reading: TBD

October 15. Congestion and value of time

Reading: “Essays” Chapter 6

October 17. **Computer Lab BESC 385.** Congestion and value of time

Reading: *Parry. “Pricing Urban Congestion” *Resources for the Future* (2008).

Problem Set 4 Distributed

Week 9: Disaggregate demand for transportation

October 20. Mode choice

Reading: “Essays” Chapter 2

October 22. Vehicle choice

Reading: TBD

October 24. Vehicle choice

Problem Set 4 Due

Week 10: Disaggregate demand for transportation

October 27. Catch-up and review

October 29. Mid-Term Exam

October 31. **Computer Lab BESC 385.** Congestion.

Problem Set 5 Distributed

Week 11: Public transportation

November 3. Public transportation

Reading: “Essays” Chapter 11

November 5. Should transit be subsidized?

Reading: *Parry and Small. “Should Urban Transit Subsidies be Reduced?” *American Economic Review* (2009).

November 7. Public transportation cont.

Problem Set 5 Due

Week 12: The firm and market power review

November 10. Monopoly (inc. price discrimination)

November 12. Oligopoly and firm interaction

November 14. Oligopoly and firm interaction

Problem Set 6 Distributed

Week 13: Freight transport

November 17. Economies of density and network size

Reading: “Essays” Chapter 3

November 19. Railroad deregulation

Reading: *Bitzen and Keeler. “Economies of Density and Regulatory Change in the U.S. Railroad Freight Industry” *Journal of Law and Economics* (2007).

November 21. Network industries.

Problem Set 6 Due

Fall Break November 24 – November 28

Week 14: Air travel

December 1. Market power in air travel

Reading: *Borenstein. “Hubs and High Fares” *RAND Journal of Economics* (1989).

December 3. Entry and competition in air travel

Reading: *Goolsbee and Syverson. “Do Incumbents Respond to Threat of Entry?” *Quarterly Journal of Economics* (2008).

December 5. **Computer Lab BESC 385.** Price discrimination.

Reading: *Stavins. “Price Discrimination in the Airline Market” *The Review of Economics and Statistics* (2001).

Problem Set 7 Distributed

Week 15: Deregulation

December 8. Trucking deregulation

Reading: *Rose “The Incidence of Regulatory Rents in the Motor Carrier Industry” *RAND Journal of Economics* (1985).

December 10. Railroad deregulation

Reading: *Wilson. “Market-Specific Effects of Rail Deregulation” *Journal of Industrial Economics* (1994).

December 12. Catch-up and review

Problem Set 7 Due

December 14. Final Exam 7:30 – 10:00pm