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**ECON 4555**  
**Transportation Economics**  
**SPRING 2013**  
**T/TH 11:00-12:15, DUAN G131**

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**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: Tuesdays and Thursdays from 12:30-2:00 pm (or by appointment)  
Phone: (303) 735-0220  
Email: jonathan.e.hughes@colorado.edu  
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 available as an ebook from the CU NetLibrary (see Chinook catalog). The text is also available 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 **Tuesday March 19, 2013** and a final exam on **Tuesday May 7, 2012 from 4:30 – 7:00 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

January 15. Introduction - course goals, thinking like an economist, market for driving

January 17. Introduction to empirical analysis

*Reading: "What is econometrics"*

### Week 2: Aggregate demand for transportation

January 22. **Computer Lab KTCH 117.** Gasoline demand

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

**Problem Set 1 Distributed**

January 24. 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).*

### Week 3: Environmental economics review

January 29. Measures of value, measures of waste, efficiency

**Problem Set 1 Due**

January 31. Policies for addressing externalities

### Week 4: Costs of driving

February 5. Driving-related externalities

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

**Problem Set 2 Distributed**

February 7. Finding the "Right Gasoline Tax"

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

### Week 5: Costs of driving

February 12. Air pollution cont.

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

**Problem Set 2 Due**

February 14. Unintended consequences of clean fuel regulation

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

### Week 6: Costs of driving – continued

February 19. **Computer Lab KTCH 117.** Carbon trading

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

**Problem Set 3 Distributed**

February 21. Biofuels

*Reading:* \*Anderson. "The Demand for Ethanol as a Gasoline Substitute" *Journal of Environmental Economics and Management* (2011).fuel standards

Week 7: Costs of driving – continued

February 26. 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).

**Problem Set 3 Due**

February 28. Highway fatalities

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

Week 8: Costs of driving – continued

March 5. **Computer Lab KTCH 117.** Highway fatalities revisited

*Reading:* "Essays" Chapter 6

**Problem Set 4 Distributed**

March 7. Congestion and value of time

*Reading:* \*Parry. "Pricing Urban Congestion" *Resources for the Future* (2008).

Week 9: Costs of driving - continued

March 12. Congestion and value of time

*Reading:* \*Parry. "Pricing Urban Congestion" *Resources for the Future* (2008).

**Problem Set 4 Due**

March 14. Congestion.

*Reading:* "Essays" Chapter 2

**March 19. Mid-Term Exam**

Week 10: Disaggregate demand for transportation

March 21. Mode choice, vehicle choice

*Reading:* "Essays" Chapter 2

**Spring Break March 25 – March 29**

Week 11: Public transportation

April 2. **Computer Lab KTCH 117.** Public transportation

*Reading:* "Essays" Chapter 11

**Problem Set 5 Distributed**

April 4. Should transit be subsidized?

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

Week 12: The firm and market power review

April 9. Monopoly (inc. price discrimination)

***Problem Set 5 Due***

April 11. Oligopoly and firm interaction

Week 13: Freight transport

April 16. **Computer Lab KTCH 117.** Economies of density and network size

*Reading:* “Essays” Chapter 3

***Problem Set 6 Distributed***

April 18.

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

Week 14: Air travel

April 23. Market power in air travel

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

***Problem Set 6 Due***

April 25. Entry and competition in air travel

*Reading:* \*Goolsbee and Syverson. “Do Incumbents Respond to Threat of Entry?” *Quarterly Journal of Economics* (2008). **and** \*Stavins. “Price Discrimination in the Airline Market” *The Review of Economics and Statistics* (2001).

Week 15: Deregulation

April 30. Trucking deregulation

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

May 2. Railroad deregulation

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

**May 7. Final Exam 4:30 – 7:00**