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**ECON 4555**  
**Transportation Economics**  
**FALL 2017**  
**MWF 11:00-11:50, ECON 119**

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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 102  
Office hours: Mondays and Wednesdays from 9:30am-11am (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 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 policy making. I will randomly select several of these summaries during the semester to evaluate as part of your class participation grade.

**Attendance:**

Class attendance is required and I will take attendance daily. Each missed class will result in a one percentage point deduction from your final grade. There are no excused or unexcused absences. **However, if you miss class, you may turn in a one-page summary of the material covered in class that day to receive full credit for the day's attendance.** Summaries are due at the beginning of next class for which you are present.

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

**Grading:**

15% Reading & 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 **Monday October 30, 2017** and a final exam on **Tuesday December 19, 2017 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 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 28. Introduction - course goals, thinking like an economist

August 30. Market for driving

September 1. 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 4. **Labor Day – No Class**

September 6. Introduction to empirical analysis

*Reading:* "What is econometrics"

September 8. **Computer Lab BESC 385.**

***Problem Set 1 Distributed***

Week 3: Environmental economics review

September 11. Measures of value, measures of waste, efficiency

September 13. Externalities, marginal private and marginal social cost

September 15. *Reading:* \*Busse, Knittel and Zettelmeyer. "Are Consumers Myopic? Evidence from New and Used Car Purchases" *American Economic Review* (2012). ***Problem Set 1 Due***

Week 4: Costs of driving

September 18. Driving-related externalities

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

September 20. Finding the "Right" Gasoline Tax

September 22. **Computer Lab BESC 385.** Air pollution

*Reading:* "Essays" Chapter 7

***Problem Set 2 Distributed***

Week 5: Costs of driving

September 25. Air pollution cont.

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

September 27. Unintended consequences of clean fuel regulation

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

September 29. Climate change

*Reading:* IPCC 4<sup>th</sup> AR Summary for Policymakers

***Problem Set 2 Due***

Week 6: Costs of driving – continued

October 2. Carbon trading

*Reading:* TBD

October 4. 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 6. **Computer Lab BESC 385.** Renewable fuel standards  
***Problem Set 3 Distributed***

Week 7: Costs of driving – continued

October 9. Biofuels

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

October 11. 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 13. 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 16. Highway fatalities revisited

*Reading: TBD*

October 18. Congestion and value of time

*Reading: "Essays" Chapter 6*

October 20. **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 23. Mode choice

*Reading: "Essays" Chapter 2*

October 25. Vehicle choice

*Reading: TBD*

October 27. Vehicle choice

***Problem Set 4 Due***

Week 10: Disaggregate demand for transportation

**October 30. Mid-Term Exam**

November 1. Congestion

November 3. **Computer Lab BESC 385.**

***Problem Set 5 Distributed***

Week 11: Public transportation

November 6. Public transportation

*Reading: "Essays" Chapter 11*

November 8. Should transit be subsidized?

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

November 10. Public transportation cont.

**Problem Set 5 Due**

Week 12: The firm and market power review

November 13. Monopoly (inc. price discrimination)

November 15. Oligopoly and firm interaction

November 17. Oligopoly and firm interaction

**Problem Set 6 Distributed**

**Fall Break November 20 – November 24**

Week 13: Freight transport

November 27. Economies of density and network size

*Reading: "Essays" Chapter 3*

November 29. 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).*

December 1. Network industries.

**Problem Set 6 Due**

Week 14: Air travel

December 4. Market power in air travel

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

December 6. Entry and competition in air travel

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

December 8. **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 11. Trucking deregulation

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

December 13. Railroad deregulation

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

December 15. Catch-up and review

**Problem Set 7 Due**

**December 19. Final Exam 4:30pm – 7:00pm**