

ECON 4555
Transportation Economics
SPRING 2019
MWF 11:00-11:50, ECON 119

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)
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Class web site: Canvas

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 March 18, 2019** and a final exam on **Sunday May 5, 2019 from 1:30 – 4:00 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. Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. 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 Canvas. Please visit this class website often.

Accommodation for Disabilities: If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](#) under the Students tab on the Disability Services website.

Classroom Behavior: Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on [classroom behavior](#) and the [Student Code of Conduct](#).

Honor Code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation: The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#). Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

Tentative Course Outline:

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

January 14. Introduction - course goals, thinking like an economist

January 16. Market for driving

January 18. 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

January 21. **MLK Day – No Class**

January 23. **Computer Lab BESC 385. Problem Set 1 Distributed**

January 25. Introduction to empirical analysis

Reading: "What is econometrics"

Week 3: Environmental economics review

January 28. Measures of value, measures of waste, efficiency

January 30. Externalities, marginal private and marginal social cost. **Problem Set 1 Due.**

February 1. *Reading:* *Busse, Knittel and Zettelmeyer. "Are Consumers Myopic? Evidence from New and Used Car Purchases" *American Economic Review* (2013).

Week 4: Costs of driving

February 4. Driving-related externalities

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

February 6. **Computer Lab BESC 385.** Finding the "Right" Gasoline Tax. **Problem Set 2 Distributed.**

February 8. Air pollution

Reading: "Essays" Chapter 7

Week 5: Costs of driving

February 11. Air pollution cont.

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

February 13. Unintended consequences of clean fuel regulation

Reading: *Brown et. al. "Reformulating Competition" *Journal of Environmental Economics and Management* (2008). **Problem Set 2 Due**

February 15. Climate change

Reading: IPCC 6th Assessment Report

Week 6: Costs of driving – continued

February 18. Carbon trading

Reading: TBD

February 20. **Computer Lab BESC 385.** Low Carbon Fuel Standards

Reading: *Holland et. al. "Some Inconvenient Truths About Climate Change Policy: The Distributional Impacts of Transportation Policies" *Review of Economics and Statistics* (2015). **Problem Set 3 Distributed.**

February 22. Renewable fuel standards

Week 7: Costs of driving – continued

February 25. Biofuels

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

February 27. 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* (2013). **Problem Set 3 Due.**

March 1. Highway fatalities

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

Week 8: Costs of driving – continued

March 4. Highway fatalities revisited

Reading: TBD

March 6. **Computer Lab BESC 385.** Congestion and value of time

Reading: "Essays" Chapter 6. **Problem Set 4 Distributed.**

March 8. Congestion and value of time

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

Week 9: Disaggregate demand for transportation

March 11. Mode choice

Reading: "Essays" Chapter 2

March 13. Vehicle choice.

Reading: TBD. **Problem Set 4 Due.**

March 15. Vehicle choice

Week 10: Disaggregate demand for transportation

March 18. **Mid-Term Exam**

March 20. **Computer Lab BESC 385.** Congestion. **Problem Set 5 Distributed.**

March 22. Congestion

Spring Break March 25 – March 29

Week 11: Public transportation

April 1. Public transportation

Reading: "Essays" Chapter 11

April 3. Should transit be subsidized?

Reading: *Parry and Small. "Should Urban Transit Subsidies be Reduced?" *American Economic Review* (2009). **Problem Set 5 Due.**

April 5. Public transportation cont.

Week 12: The firm and market power review

April 8. Monopoly (inc. price discrimination)

April 10. Oligopoly and firm interaction. **Problem Set 6 Distributed.**

April 12. Oligopoly and firm interaction

Week 13: Freight transport

April 15. Economies of density and network size

Reading: “Essays” Chapter 3

April 17. 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). **Problem Set 6 Due.**

April 19. Network industries.

Week 14: Air travel

April 22. Market power in air travel

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

April 24. **Computer Lab BESC 385.** Entry and competition in air travel

Reading: *Goolsbee and Syverson. “Do Incumbents Respond to Threat of Entry?” *Quarterly Journal of Economics* (2008). **Problem Set 7 Distributed.**

April 26. Price discrimination.

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

Week 15: Deregulation

April 29. Trucking deregulation

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

May 1. Railroad deregulation

Reading: *Wilson. “Market-Specific Effects of Rail Deregulation” *Journal of Industrial Economics* (1994). **Problem Set 7 Due.**

May 5. Final Exam 1:30pm – 4:00pm