ECON 4555
Transportation Economics
FALL 2016
MWF 11:00-11:50, HLMS 267

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)
Phone: (303) 735-0220
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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 drawn from the text below. Readings from the text are denoted as “Essays” in the course syllabus.


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 26, 2016 and a final exam on
Wednesday December 14, 2016 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 22. Introduction - course goals, thinking like an economist
    August 24. Market for driving
    August 26. Gasoline demand
    Reading: *Hughes, Knittel and Sperling. “Evidence of a Shift in the Short-Run
Week 2: Aggregate demand for transportation
August 29. Introduction to empirical analysis
   Reading: “What is econometrics?”
August 31. Introduction to empirical analysis - continued
September 2. **Computer Lab BESC 385.**
   **Problem Set 1 Distributed**

Week 3: Environmental economics review
September 5. **Labor Day – No Class**
September 7. Measures of value, measures of waste, efficiency
September 9. Externalities, marginal private and marginal social cost

Week 4: Costs of driving
September 12. Driving-related externalities
   **Problem Set 1 Due**
September 14. Finding the “Right” Gasoline Tax
September 16. **Computer Lab BESC 385.** Air pollution
   Reading: “Essays” Chapter 7
   **Problem Set 2 Distributed**

Week 5: Costs of driving
September 19. Air pollution cont.
September 21. Unintended consequences of clean fuel regulation
September 23. Climate change
   Reading: IPCC 4th AR Summary for Policymakers
   **Problem Set 2 Due**

Week 6: Costs of driving – continued
September 26. Carbon trading
   Reading: TBD
September 28. Low Carbon Fuel Standards
September 30. **Computer Lab BESC 385.** Renewable fuel standards
   **Problem Set 3 Distributed**

Week 7: Costs of driving – continued
October 3. Biofuels

October 5. Fuel economy standards

October 7. Highway fatalities

Problem Set 3 Due

Week 8: Costs of driving – continued
   October 10. Highway fatalities revisited
      Reading: TBD
   October 12. Congestion and value of time
      Reading: “Essays” Chapter 6

Problem Set 4 Distributed

Week 9: Disaggregate demand for transportation
   October 17. Mode choice
      Reading: “Essays” Chapter 2
   October 19. Vehicle choice
      Reading: TBD
   October 21. Vehicle choice

Problem Set 4 Due

Week 10: Disaggregate demand for transportation
   October 24. Catch-up and review
   October 26. Mid-Term Exam

Problem Set 5 Distributed

Week 11: Public transportation
   October 31. Public transportation
      Reading: “Essays” Chapter 11
   November 2. Should transit be subsidized?
   November 4. Public transportation cont.

Problem Set 5 Due

Week 12: The firm and market power review
   November 7. Monopoly (inc. price discrimination)
   November 9. Oligopoly and firm interaction
November 11. Oligopoly and firm interaction  

*Problem Set 6 Distributed*

**Week 13: Freight transport**

November 14. Economies of density and network size  
*Reading:* “Essays” Chapter 3  
November 16. Railroad deregulation  

November 18. Network industries.  
*Problem Set 6 Due*

**Fall Break November 21 – November 25**

**Week 14: Air travel**

November 28. Market power in air travel  

November 30. Entry and competition in air travel  

*Problem Set 7 Distributed*

**Week 15: Deregulation**

December 5. Trucking deregulation  

December 7. Railroad deregulation  

December 9. Catch-up and review  
*Problem Set 7 Due*

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