

## CE 392T (& ECO 394K): TRANSPORT ECONOMICS

Spring 2024 (#16254 & for Econ students: #33993)

Lectures: 2-3:15 pm Mon/Wed, 3.122 ECJ

### I. Office Hours for Instructor, Dr. Kara Kockelman

Tuesdays & Wednesdays 10:30-Noon, in office 6.904 ECJ

Or, by appointment: 512-471-0210 (office phone number) kcockelm@mail.utexas.edu

**II. Prerequisites:** There are no official prerequisites for this course, but students are expected to be very familiar with calculus and comfortable with several statistical concepts (*e.g.*, t-statistics & ordinary least squares regression).

**III. Grading:** For purposes of grading (with pluses & minuses used), the performance of students enrolled in this course will be assessed using the following scoring system:

Homeworks* & Project(s)	50% of score/grade
In-Class Midterm	22%
Final Exam	28% (Note: This may be a take-home exam.)

\*The instructor reserves the right to consider Class Participation in the evaluation of a student's performance in the course. This item may contribute up to 10% of a student's grade, falling within the category of Homeworks.

**IV. Homework Assignments:** Homework problems will be assigned approximately bi-weekly and will be submitted online to Canvas, before midnight on the date they are due. After this time, they will be considered late and given *no credit* (unless an exception has been granted to the student 12+ hr in advance). To ensure everyone learns maximally, *all assigned problems must be completed* within 3 weeks of their due date and at least one week before the final exam. Otherwise, a grade of "Incomplete" ("X") may be assigned to the student for the course.

**V. Examinations:** The in-class midterm & the final exam – if it is an in-class exam – are tentatively scheduled for the following dates:

Midterm:	Wednesday, March 20 (tentative)
Final Exam:	Monday, May 6, 1-3 pm (tentative*)

*\*As will be decided by the students early in the semester, the final exam may be a take-home exam*, so our final exam slot will then be used for our final project presentations.

\* The instructor reserves the right to periodically administer, grade, and use in student evaluation "pop"/unannounced quizzes. Students should come to class prepared to contribute to each class's lecture and discussion by staying up-to-date with homeworks and reading. Make-up exams will *not* generally be given to any student. If a student is absent from a scheduled exam due to medical or other problems beyond her/his control and can plainly demonstrate this, the instructor can choose to give the student a completely different exam, additional assignments, and/or change the weighting of the student's various graded contributions.

**VI. Course Project:** The course project will involve a **10-page (approx.) research paper and an in-class presentation**, motivated by a specific transportation economics topic to be decided mid-semester. Most or all of the work towards this project will be due before the last class day.

**VII. Readings:** Typically, the required textbook for this course is Hal Varian's *Microeconomic Analysis, Third Edition* (Norton, 1992). In order to save book costs, students may choose to purchase a \*course packet\* of the required chapters for this semester, at Canopy Course Notes, 510 West MLK, 512-497-6662 via Jerome Kubala, for **\$20**. Students may also enjoy reading chapters from Kockelman et al.'s [The Economics of Transportation Systems: A Reference for Practitioners \(2013\)](#), Small and Verhoef's *Economics of Urban Transportation* (2007), and/or Sergio Jara-Díaz's *Transport Economic Theory* (2005). Copies of the PowerPoint slides used by the instructor will be made available via Canvas. Some additional, required materials will be made available via electronic mail.

Since the course textbook does not cover all details explored in this class, students may wish to consult other texts for further reading. Small and Verhoef's 2007 text offers a rather in-depth and academic discussion of various topics in transport economics. For a less technical audience, Kenneth J. Button's *Transport Economics 3<sup>rd</sup> edition* (Edward Elgar 2010) offers an introduction to this topic. A. Deaton and J. Muellbauer's *Economics and Consumer Behavior* is highly recommended and sophisticated (yet accessible) treatment of more general consumer theory, and H. Varian's *Intermediate Microeconomics – A Modern Approach, Fifth Edition* is a more accessible version of the course text. P. McCarthy's *Transportation Economics* offers a case-study approach to many topics. Various on-line economics texts and topical summaries (freely available at places like via <http://www.economicnetwork.ac.uk/teaching/text/advancedmicroeconomics.htm> & UT's online library) may also be of interest.

**VIII. Add/Drop Dates:** From the 1st through the 4th class day, an undergraduate or graduate student can drop or add a course via the web. From the 5th through the 12th class day, a student can drop via the web; adds must be done in the department offering the course. For any drops beginning with the 13th class day, a student must initiate the drop process in the office of the Dean. Departmental advisor and instructor approval may be required; poor course performance is insufficient reason for such approval.

**IX. Evaluation Plan:** An evaluation of the course and instructor will be conducted at the end of the semester using the approved UT Course/Instructor evaluation forms. All students are encouraged to submit written comments during this survey. Other formal assessment opportunities are likely to arise mid-semester; and students are strongly encouraged to provide feedback at any time during the course, in person, via other students or anonymously, to the TA and/or the instructor.

**X. Other Information:** (1) The University of Texas at Austin provides, upon request, appropriate academic accommodations for qualified students with disabilities. For more information, contact the Division of Diversity and Community Engagement, Services for Students with Disabilities, 471-6259 (voice) or 232-2937 (video phone) or <http://www.utexas.edu/diversity/ddce/ssd>. (2) A student who misses classes or other required activities, including examinations, for the observance of a religious holy day should inform the instructor as far in advance of the absence as possible, so that arrangements can

be made to complete an assignment within a reasonable time after the absence. (3) Students in CE392T are encouraged and authorized to work on homework assignments together and prepare for exams together. However, all written work handed in by a student is considered to be his/her own work, prepared without *unauthorized* assistance. To ensure your actions never compromise your and our class's integrity, please visit <https://catalog.utexas.edu/general-information/appendices/appendix-c/student-conduct-and-academic-integrity/#text>. The use of unauthorized sources of homework solutions (e.g., websites like Chegg, previous semester student solution copies, & instructor CDs) is considered scholastic dishonesty, plagiarism and a violation of UT's Standard of Academic Integrity.

The **University Honor Code defines plagiarism** as the following: (1) When a person represents another's material as their own work **without attribution**. (2) When a person **misrepresents citation** or attribution for purposes of an academic advantage. (3) When a person submits essentially the same work for two assignments without the permission of the Faculty Member.

Students who violate University rules on scholastic dishonesty (e.g., anything which gives unfair academic advantage to a student) are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University.

### **XI. Course Objectives and Content**

CE 392T offers students insight into consumer and firm behavior, largely from a microeconomic perspective. Economic theory and its applications enhance transport demand analysis, transport pricing, welfare considerations, and transport policy evaluation. By the end of the semester, each student should be able to (1) **optimize production** decisions subject to technology constraints, (2) **optimize consumption** decisions subject to budget constraints, (3) **evaluate economic policies** that govern complex transportation systems (including air and road networks), (4) **select pricing schedules** to enhance welfare and system operations, and (5) **apply basic econometric methods** for the analysis of transportation data. Most theory presented in the course will be directly linked to personal travel applications. An approximate schedule of the course topics is shown below.

### **XII. Schedule**

<b>Lesson #</b>	<b>TOPICS TO BE COVERED</b>	<b>Relevant Reading</b>
Lesson 1	Intro to Transport Economics	–
Lesson 2	Operator Cost Structures: Highways, Rail, Air & Transit	–
Lesson 3	Firm Behavior: Optimizing Production, Profits, & Cost + Monopolies & Price Discrimination	Ch. 1 to 5 Ch. 14
Lesson 4	Consumer Behavior: Utility Maximization	Ch. 7 & 8
Lesson 5	Consumer Behavior: Demand Relationships	Ch. 9
–	Review for Midterm Exam	–
–	<b>Midterm Exam</b>	
Lesson 6	Welfare Theory: Consumer Surplus & Other Measures	Ch. 10 & 22
Lesson 7	Market Imperfections: Negative Externalities	Ch. 24
Lesson 8	Roadway Congestion & Pricing	--

Lesson 9	The Value of Travel Time	--
Lesson 10	Econometrics & Statistical Applications (multi-week)	Ch. 12
--	Slots for Final Exam Review & Final Project Presentations	
May 6	<b>Final Exam slot</b> , 1 to 3 pm (Monday) for exam or project presentations	