

TRSS 402/TRSP 602: Transportation Economics

Spring 2014, W 4:30 PM – 7:15 PM, CBEIS 251

Instructor	Celeste Chavis	Office Hours	Monday: 3:00 – 5:00 PM
Office	CBEIS – Room 241		Tuesday: 10:00 AM – 12:00 PM
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Course Description

This course reinforces the microeconomic tools necessary for understanding, analyzing, and managing transportation firms and industries. The course is a mix of theoretical tools, applied industry studies and academic articles. The subjects covered will include costs, pricing behavior, inter-modal competition, and strategic decision making.

The course will begin with user costs and demand functions followed by operator costs and supply functions. Latter topics in the course include pricing and estimation and application of demand and cost functions.

The undergraduate course and graduate course are taught in conjunction. Though the topics in each will be the same, graduate students will be expected to have a deeper understanding of the topics and the ability to think more critically on assignments.

Course Objectives

The objective of this course is to expose the student to the economics of transportation systems and the economic impacts of transportation. Determinants of supply, demand, cost, and price will be emphasized. The course will also cover institutional and spatial structure of transportation, including regulation, the role of public policy in transportation economics and finance, and the locational influence of transportation on users and suppliers. By the end of the semester students will be able to:

- Derive transportation demand for any given good
- Describe transportation pricing policy
- Analyze transportation cost for different transportation modes
- Understand transportation investment decisions.

Learning Outcomes

1. Familiarity with the challenges facing transportation professionals
2. Ability to apply mathematics, science, applied sciences, and principles of engineering planning and management to solve transportation-related problems
3. Ability to design and conduct experiments as well as to analyze and interpret data

Teaching Method

This course will consist primarily of lectures (via PowerPoint and board), classroom discussions on current issues and case studies. Assignments, projects, class discussions, in-class exercises /quizzes, and examinations will be given to measure progress.

Course Requirements and Student Evaluation

Successful completion of the class will depend on regular class attendance, timely completion of homework and projects, in-class participation, and exams.

TRSP 402

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| • Midterm Exam | 25% |
| • Final Exam | 35% |
| • Assignments | 30% |
| • Participation/Attendance | 10% |

TRSP 602

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|----------------|-----|
| • Midterm Exam | 25% |
| • Final Exam | 35% |
| • Assignments | 30% |
| • Discussions | 10% |

The grade distribution is as follows:

- A 90 – 100%
- B 75 – 89%
- C 65 – 74%
- F Below 65%

Academic Honesty

Students *currently* taking this class can work together to conceptualize general approaches to assignments. However, unless otherwise specified for a particular assignment, the work you submit should be done completely on your own. This includes text, numerical calculations, mathematical derivations, diagrams, graphs, computer programs and output.

Plagiarism, according to the policy of Morgan State University, is not tolerated and students will be disciplined. The exact words or approximate words, or ideas of another person must be quoted and attributed. Students who fail to observe this rule will receive an “F” for the course.

Courtesy

Please silence cell phones and restrict use during class. Computers are available as a class aide and thus use outside of class related activities should be kept to a minimal.

Accommodations

Please seek the instructor immediately if special accommodations are necessary. These include but are not limited to disabilities and personal emergencies.

Required Text

Henderson, Chris and Matthews, H. Scott. *Civil Infrastructure Planning, Investment and Pricing: Fundamental Concepts for Owners, Engineers, Architects and Builders*. Carnegie Mellon University, Pittsburgh, Pennsylvania, 2011. <http://cspbook.ce.cmu.edu/>

The text is available free at the link provided above. If you wish to print the covered chapters in advance refer to the syllabus.

Other Reference Materials

The following books are additional references that may be beneficial for the course or if further information is desired.

Gomez-Ibanez, Tye, and Winston. *Essays in Transportation Economic and Policy: A Handbook in honor of John R. Meyer*. Washington, DC: The Brookings Institution, 1999. This text is a compilation of key articles and cases related to transportation economics.

Nicholson, Walter, and Christopher M. Snyder. *Microeconomic theory: basic principles and extensions*. South-Western Pub, 2011. This a good, general microeconomic reference.

Ben-Akiva, Moshe, and Steven Lerman. *Discrete choice analysis: theory and application to travel demand*. Vol. 9. MIT press, 1985. This is the classic discrete choice text.

Course Schedule

Below is the tentative schedule for the course.

Week	Date	Topics	Readings & Assignments
1	1/29	INTRODUCTION	Preface, Ch. 1, Appendix I
		USERS COSTS and DEMAND FUNCTIONS	
2	2/5	The Usage of Facilities-User Cost and Demand <ul style="list-style-type: none"> - Demand Functions - Sensitivity of Travel Demand - "User Costs" of Infrastructure Services 	2-1 - 2-2
3	2/12	- Determination of Equilibrium Volumes and Service Conditions (Introduction to Supply & Demand) Further Development of User Cost and Demand Functions <ul style="list-style-type: none"> - Shifts in Demand Functions - Demand Functions w.r.t. Individual Components 	2-3, 2-4 3-1 - 3.3
		OPERATOR COSTS AND SUPPLY FUNCTIONS	
4	2/19	Costs of Service and Facilities <ul style="list-style-type: none"> - Description and Functional Form of Cost Relationships - Short Run Cost Functions 	4-1 - 4-3
5	2/26	<i>Discussion #1</i>	
6	3/5	- Short Run Cost Functions, cont - Long Run Cost Function	4-3 - 4-4
7	3/12	Midterm Review	
8	3/19	Midterm	
--	3/26	☺ SPRING BREAK ☺	
		PRICING: SUPPLY & DEMAND TRADEOFF	
9	4/2	Benefits of Infrastructure Services	Ch. 5
10	4/9	Pricing and Economic Efficiency in the Short Run	Ch. 6
		ESTIMATION & APPLICATION	
11	4/16	Estimation and Accuracy of Demand Functions	Ch. 11
12	4/23	Estimation of Cost and Price Functions	Ch. 12
13	4/30	Practical Problems	Ch. 13 <i>Final for grads</i>
14	5/7	<i>Discussion #2</i>	
15	5/14	REVIEW/WRAP-UP	