

## TRSS 420/TRSP 620: Transportation Systems Evaluation

Spring 2014, M 5:00 PM – 7:45 PM, CBEIS 251

<b>Instructor</b>	<b>Celeste Chavis</b>	<b>Office Hours</b>	Monday: 3:00 PM – 5:00 PM
Office	CBEIS – Room 241		Tuesday: 10:00 AM – 12:00 PM
Phone	443-885-5061		Wednesday: 2:30 PM – 4:30 PM
Email	<a href="mailto:celeste.chavis@morgan.edu">celeste.chavis@morgan.edu</a>		Thursday: 1:00 PM – 3:00 PM

### Course Description

This course will familiarize students with the commonly used quantitative and qualitative techniques in transportation systems analysis and evaluation. The course will introduce students to engineering economy and its application to transportation systems. Students will be introduced to capacity analysis of transportation, transportation planning evaluation and feasibility analysis. This course will also provide computer sessions for the related subjects.

### Course Objectives

The primary objective of this course is to make the students familiar with commonly used quantitative and qualitative techniques in transportation systems analysis and evaluation.

### Learning Outcomes

Students should demonstrate an ability to:

- (a) apply knowledge of math, science and applied science
- (c) formulate or design a system, process or program to meet desired needs
- (e) identify and solve applied science problems
- (k) use the techniques, skills, and modern scientific and technological tools necessary for professional practice

### Teaching Method

This course will consist primarily of lectures (via PowerPoint and board) and discussions. Assignments, projects, in-class exercises, 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.

**TRSS 420**

- Exams 40%
- Final Project 20%
- Assignments 30%
- Participation/Attendance 10%

**TRSP 620**

- Exams 40%
- Final Project 25%
- Assignments 35%

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.

**All work must be shown on homework, tests, projects etc. You will need a calculator for this course. Cell phones will not be allowed on exams. Homework must be neat and legible. Engineering paper is recommended.**

**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.

**Suggested Reference Material**

Blank, Leland T., Anthony J. Tarquin, and Scott Iverson. *Engineering Economy*. 7<sup>th</sup> ed. New York: McGraw-Hill, 2012.

Garber, N. J. and L. A. Hoel. *Traffic and Highway Engineering* (Fourth Edition). Brookes/Cole Publisher, 2009.

*Highway Capacity Manual (HCM 2010)*, Transportation Research Board, Washington DC, 2010, [hcm.trb.org](http://hcm.trb.org).

## Course Schedule

Readings and assignments will be assigned throughout the course.

Week	Date	Topics
1	1/27	Introduction
<b>ECONOMIC ANALYSIS</b>		
2	2/3	Factors: How Time and Interest Affect Money
3	2/10	Combining Factors; Nominal and Effective Interest Rates
4	2/17	Present & Annual Worth Analysis
5	2/24	Excel Tutorial & Practice Problems
6	3/3	Rate of Return Analysis
7	3/10	Benefit/Cost & Breakeven Analyses
8	3/17	<b>MIDTERM 1</b>
--	3/24	☺ SPRING BREAK ☺
<b>TRANSPORTATION PERFORMANCE EVALUATION</b>		
9	3/31	Travel Demand Forecasting
10	4/7	Network Equilibrium
11	4/14	Level of Service and Capacity Analysis
12	4/21	Other impacts: Noise, Emissions & Safety
13	4/28	<b>MIDTERM 2</b>
14	5/5	Special Topic
15	5/12	<b>FINAL PRESENTATIONS</b>