

## **CE 6450: Transportation Safety Engineering Spring 2013**

### **Course Description**

This course examines the causes of crashes, methods to identify locations with crash problems, and procedures to select and evaluate countermeasures to address surface transportation safety problems. Methods for collecting and analyzing data are emphasized. Techniques will be applied by the students using real world crash data. Prerequisite: CE 6400 (Transportation Operations) or equivalent.

### **Instructors**

Dr. Michael D. Fontaine, P.E.

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Office Hours: Monday and Wednesday 5:00 – 6:00 or by appointment (in person or virtual)

### **Class Periods and Location:**

Rice Hall, Room 032 or remote locations

Monday and Wednesday: 6:30 to 7:45 PM

### **Textbook:**

No textbook is required for the course. Readings will be provided by the instructor throughout the semester. Some reference materials that will be used include:

- Hauer, E. *Observational Before-After Studies in Road Safety*
- *AASHTO Highway Safety Manual*
- Hoel, L.A. and Garber, N.J., *Traffic and Highway Engineering*, 4<sup>th</sup> Edition

### **Grading**

- Term paper: 20%
- Term paper presentation: 5%
- Projects:
  - Project #1 Report: 20%
  - Project #1 Presentation: 5%
  - Project #2 Report: 20%
  - Project #2 Presentation: 5%
  - Project #3 Report: 20%
  - Project #3 Presentation: 5%

<b>CE 6450 Spring 2013 Tentative Schedule (Subject to Change)</b>		
<b>Date</b>	<b>Topic</b>	<b>Notes</b>
1/14	<b>TRB – No Class</b>	
1/16	Course Introduction	
1/21	<b>MLK Day – No Class</b>	
1/23	Crash types, severity, and classification	Term papers assigned
1/28	Sources of crash data	
1/30	Crash analysis fundamentals	
2/4	Network screening	Project #1: network screening assigned, statement of paper topic due
2/6		
2/11		
2/13		
2/18	Human factors and crash causality	
2/20		
2/25	Diagnosis and countermeasure selection	
2/27		
3/4		Project #2: Diagnosis and countermeasure selection assigned
3/6	<b>Project #1 Presentations</b>	Project #1 due
3/11	<b>Spring Break – No Class</b>	
3/13	<b>Spring Break – No Class</b>	
3/18	Safety Effectiveness Evaluation	
3/20		Annotated bibliography due for term paper
3/25		Project #3: Safety Effectiveness Evaluation assigned
3/27	<b>Project # 2 presentations</b>	Project #2 due
4/1	Economic appraisal and project prioritization	
4/3		
4/8	Safety surrogate measures	
4/10	Safety management programs	
4/15	TBD	
4/17	TBD	
4/22	<b>Term Paper Presentations</b>	All term papers due
4/24	<b>Term Paper presentations</b>	
4/29	<b>Project #3 presentations</b>	Project #3 due