Southern Illinois University Edwardsville
Department of Civil Engineering

CE 579: Transportation Safety System

Syllabus

INSTRUCTOR: Dr. Huaguo Zhou, P.E.
OFFICE: EB 2050
OFFICE HOURS: 3:00-5:00 PM, Monday
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TEXTBOOK: Class Notes

SUGGESTED REFERENCES:
4. Interactive Highway Safety Design Model:

CLASS TIME: M 5:30-8:20

COURSE OBJECTIVES
The goal of this course to introduce the graduate students in transportation engineering the growing body of scientific literature relevant to the transportation safety discipline and enable their use of the Highway Safety Manual (HSM). Safety is maturing as a science with more promising scientific methods and tools that can be applied to reduce the deaths and injuries occurring on our roads. The purpose of the HSM will be to provide the best information and tools to facilitate roadway planning, design, operations, and maintenance decisions based on explicit consideration of their safety consequences. The HSM, as envisioned by those who created it, will forever alter project development and decision-making by directly incorporating science-based, proven measures of traffic safety in all aspects of highway and traffic engineering design and operations. Upon the completion of this course, students will:

- Understand the knowledge about human factors and the fundamentals of highway safety.
- Apply the roadway safety management process at a small roadway network.
- Use predictive methods to estimate the number of crashes for different facility types.
- Use Crash Modification Factors (CMFs) for safety benefit analysis.

PREREQUISITES
CE 376 Introduction of Transportation Engineering

GRADING:

Homework and Lab Assignments 30%
One Exam 25%
One research paper 30%
Final Presentation 15%

**Week Topic**

1. Introduction and fundamentals
2. Crash Reporting Systems/Databases (Guest speaker from IDOT)
3. Accident Studies and Analysis
4. Network Screening/Diagnosis
5. Crash Modification Factors (CMFs)/ Counter Measures Selection
6. Crash Prediction Method and Calibration
7. Econ Appraisal and Safety Effectiveness Evaluation
8. Exam I / Term Project Abstract Due
9. Lab 1 Interactive Highway Safety Design Model
10. Thanksgiving Break – No class
11. Term paper draft presentations/Discussions/technical paper writing
12. Traffic Conflict Studies
13. Pedestrian Safety
14. Transportation Safety Research (Guest Speaker)
15. Final Presentation/Term Project Papers Due