I. SEMESTER PROJECT

A. Overview
The project is a semester-long research activity on a topic/subject selected by the student and approved by the course instructor. Some projects may provide support to a decision maker: “How will a decision (e.g., policy, design, technology, operational strategy) affect road safety?” Other projects may focus on methodology: “What analytical methods should we use to estimate the safety effects of one or more decisions or treatments?” Final selection and approval of a project topic will occur during the third week of the semester. The required written deliverables include a proposal, literature review, and final report. Oral presentations to the class associated with each written deliverable are also required.

The project objective is for each student to complete an exhaustive treatment of the selected topic through a set of activities including: literature review, data collection, analysis, and formulation of conclusions and recommendations. An assessment of current knowledge and corresponding limitations related to the topic will be included. This information should be presented logically, comprehensively, and succinctly. The final report should clearly document the project purpose, assumptions, methods, data, and references. Written products should follow the formats described in “Information for IEEE Transactions, Journals, and Letters Authors” available at http://www.ieee.org/documents/auinfo07.pdf

Grading will reflect the instructor’s assessment of the depth of your research, demonstrated understanding of the topic, accuracy, innovative thinking, and presentation. Activity weights are included on the course syllabus.

B. Potential Project Topics
Potential research topics are listed below. You are not required to select a topic from this list. You are encouraged to be as specific as possible with your topic.

1. Characteristics and countermeasures for motorcycle crashes
2. Road safety management differences between the U.S. and leading countries (e.g., UK, Sweden, Netherlands, etc.)
3. Modeling pedestrian and bicyclist safety
4. Relationships between speed and safety
5. Surrogate measures of safety
6. Work zone crash characteristics and countermeasures
7. Crash characteristics and countermeasures on rural roads
8. Crash characteristics and countermeasures on urban and suburban roads
9. How will greenhouse gas and fuel economy standards impact safety?
10. Relationships between vehicle characteristics (e.g., weight, physical dimensions,
II. PROJECT REQUIREMENTS

A. Proposal
Describe the research question you will try to answer. Briefly describe your initial understanding of previous related work and key questions that exist in the topic area. Clearly and convincingly convey why this research question will be important to answer. Identify how your results might be implemented.

1) Presentation, 8/29: Present your proposal to the class in 6-7 minutes (with an additional 4-5 minutes for questions and answers).

2) Written Proposal, due 9/2: Provide a written proposal that addresses all requirements. Cite a minimum of five references. The written proposal should be approximately three to four pages in length (1.5 spaced).

B. Literature Review, Refined Research Objective, and Methodology
Critically synthesize existing literature. The literature review should document what is known about the selected topic. It should also define links between existing knowledge, identify inconsistencies and knowledge gaps, and formulate a series of research needs. Guidance on writing a literature review can be found at http://web.pdx.edu/~bertini/courses/literature_review.htm

The results of the literature review should be used to refine/reformulate your research question from the proposal. Outline a methodology to answer this research question. Your methodology may involve a more in-depth analysis of the literature (such as a meta-analysis) or collection and analysis of available data.

1) Presentation, 9/26 or 10/3: Present the findings of your literature review to the class in 15 minutes (with an additional 5-7 minutes for questions and answers).

2) Written Literature Review, due 10/7: Submit a written literature review that addresses all requirements. Cite a minimum of 20 references. The written literature should be
approximately 10-15 pages in length (1.5 spaced).

C. Final Report
Prepare a comprehensive report that includes the findings of the literature review, research objective, methodology, analysis results, conclusions, and recommendations.

1) Presentation, 11/28 or 12/5: Present the findings of your semester project to the class in 15 minutes (with an additional 5-7 minutes for questions and answers). The literature review, objective, and research method should be briefly summarized (since they have been previously presented). Emphasis should be placed on analysis results, conclusions, and recommendations.

2) Written Report, due 12/12: Provide a written report that addresses all requirements. The final report should be approximately 25-40 pages in length (1.5 spaced).