Research Review Assignment  
CIVL 7012/8012

Select a current published research paper (must be published no earlier than 2005) on any aspect of civil engineering in which you are interested that demonstrates practical applications of methods covered thus far in CIVL 7012/8012. Your focus should be on identifying how the statistical techniques/methods discussed in this course are applied in a research setting. The goal of this assignment is to improve your ability to critically review published research, specifically related to experimental design, probability models, statistical methods, and data presentation. An additional objective is to quickly demonstrate the applicability of course concepts in a variety of civil engineering settings, thus presentations will also be made to the class regarding the research assignments.

For this assignment, you will submit a 2-3 page (double spaced) typed review of the journal article you select, along with a photocopy of the article text. As the report you will be submitting is limited in length, you should make an effort to present the information as clearly and as concisely as possible. Make sure that reviews are well written, and that care is taken to avoid accidental plagiarism. You will turn in two research assignments this semester, and will make a brief (5 minute) presentation to the class with each assignment. It is recommended that you use PowerPoint or other visual aids during your presentation. Specific requirements and due dates are noted below.

Report Requirements (please organize both your review and presentation according to these requirements):

1. **Introduction/ Problem Statement** – Describe the problem that is being addressed, including a concise description of any background material necessary for understanding. Consider that you will be describing the problem to other engineering students who may be unfamiliar with the specific topic, but who have a similar technical background. Introduce the title/authors of the article you are reviewing in this section.

2. **Methodology** – Describe the approach the researchers used to address the problem. Specifically explain the probability model or statistical method employed, why it is appropriate for the problem (keep in mind requirements/assumptions discussed in class), and how it was implemented (i.e. what data was necessary, how was it obtained, etc.)

3. **Results/Conclusions** – Describe results obtained, and how well the model/method worked for this application.

4. **Critical Review** – Considering what you have learned regarding data collection, graphical presentation, and experimental design, how well do you think the authors conveyed their message? Is there anything else you would suggest the authors present or explain that would aid in readers’ understanding of the approach, results, or conclusions?
Review Due Dates:

Monday, February 22, 2010 (presentations Monday, February 22)
   Focus Area: basic probability, discrete, continuous models.*

Monday, April 12, 2010 (presentations Monday, April 12)
   Focus Area: regression models, analysis of variance, or nonparametric methods.*

*You may select a research paper that focuses on a specific model/method not covered in our course, but that falls within the listed focus area. You may also choose to describe a research project you are currently exploring for your graduate studies, rather than a published paper.