

**CE 361**  
**Purdue University**  
**School of Civil Engineering**

## Design Papers

1. Any transportation-related design-related problem is acceptable. Examples of topics include;
  - Effect of sleep deprivation, cell-phone and texting use, music types, conversations and other factors on driver performance
  - Study of inadequate sight distance on local city streets
  - Study of bicycle braking distances
  - Stadium Avenue and David Ross Road stopping sight distance study
  - Effects of advanced braking and stability systems in urban driving conditions
  - The effect of alternate fuels on vehicle performance, emissions and economics
  - Report on the impact of University Street speed humps
  - A study of Happy Hollow school zone speed limit
  - The effect of police car presence on vehicle speeds
  - Redesign of the Northwestern/Cherry Lane intersection
  - Speed humps: Silent police officers?
  - Braking bicycles: A study of disk rotor diameter effect on braking distances
  - Assessment of high-speed rail transportation
  - Investigation of eastbound traffic through the intersection of Stadium Avenue and University Street
  - Speed hump analysis of University Street
  - Sight distances on Newman Road, West Lafayette
  - Motorcycle analysis: The most efficient braking
  - America's dependency on oil and the need for alternative fuel
  - Car accident and the effects of age, race, gender and speeding
  - Analysis of the influence of anti-lock brakes on the Chevrolet S-10 pickup truck
  
2. There are three general types of design papers:
  - A. **Experimental Study** - In this case you analyze an existing issue (such as driver distraction, etc.) by setting up an experiment using computer software or other means of design an experiment.
  - B. **Site Specific Study** - In this case you analyze an existing problem (poorly designed intersection, deteriorated pavement) and propose a solution. You can get information from state/city officials and/or gather reports from library/internet sources. You may also have to collect data (counts of vehicles, vehicle speeds, etc.).
  - C. **General Design Analysis** - Information is collected from library/internet sources on a design problem that is local, nationwide, or world wide in scope. A number of journals available online are an excellent place to start.
  
3. It is important for your paper to be well structured. Although each paper will be different, most papers should have:
  - A. **Problem Statement**, including the significance of the problem and who is likely to be interested in the solution.
  - B. **Evaluation** of the important factors involved in solving the problem.
  - C. **Presentation** of one or more proposed solutions.
  - D. **Conclusions**.
  
4. The paper should be about 10 to 15 pages typed (including figures and tables). Try to be succinct and to the point but be careful not to leave out important information. The paper can be done individually or in groups of two to five. For example, experimental and site-specific studies may require more than one person to collect data and other design information.