The Problem with Engineers

**Assignment due date:**
E-mailed by 9am on Thursday July 2\textsuperscript{nd} to mscott@stpaulsschool.org, cfairman@stpaulsschool.org, and tblair24@gmail.com as a Word or Pages document.

**Introduction:**
In a nutshell, the engineering design process comprises the following steps:

1. Investigation
   a. Define the problem
   b. Research
2. Generate ideas
   a. Brainstorm
   b. Research
3. Develop possible solutions
   a. Models
   b. Simulations
4. Select solution
   a. Detailed design models/drawings
   b. Simulations
   c. Prototype
5. Evaluation
   a. Test
   b. Redesign
6. Final product and documentation

And here is the preamble to the *Code of Ethics for Engineers* published by the National Society of Professional Engineers ([http://www.seas.upenn.edu/undergraduate/pdf/NSPECodeofEthics.pdf](http://www.seas.upenn.edu/undergraduate/pdf/NSPECodeofEthics.pdf)):

> Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

From devastating nuclear disasters to global warming, from water contamination to food toxicity, from birth defects to obesity, the engineering profession could be blamed for most of the woes of modern human and environmental health. How are engineers responsible for these afflictions? How should engineers be held accountable from now on? What’s missing or what should be emphasized about the engineering design process? Where have engineers fallen short in the engineers’ code of ethics? Identify two other groups of people who are responsible, and why. How can they be held accountable? What really needs to shift and why? And why do we keep plodding on?
**Assignment:**
In a three-to-five page typed (12-point, Times New Roman, 1.5-spacing) essay, students are to discuss the topic above and answer all questions with specificity. Your *structured* (intro, body, conclusion) essay must include references to back up any claims you make about human and environmental health and the responsible parties’ culpability. Your responses should be well-thought and should answer all questions posed above. Engineers are responsible for many modern problems, as are the other parties you identify – what needs to change?

**Citing References:**
Use the Council of Science Editors (CSE) style when citing references in this class. Ultimately, the style used doesn’t matter so long as students follow instructors’ guidelines.

**In-text citations:**

- **Entire Sentence(s)**

  **Example:** It is important to understand the implications of the word problem, as well as the logic of the formulas used to find the correct answer.¹

- **Part of Sentence**

  **Example:** They have been proven to play different but vital roles in the ecosystem² and students should plant them on Earth Day.

**Works Cited Page Example:**

Cited References

1. Web Document Author. Site Title [home page on the Internet]. Published City (Published State):

   Publisher; Year Month Day. [cited Year Month Day]. Available from: URL Address.

2. Book Author Last Name, First Initial. Book Title. City Published (State Published): Publisher;

   Year. Total Page Numbers p.