Freshman Engineering Seminar Mid-Term Ethics Report

This report will be due at the start of class on **Wednesday, 14 October 2015**

This report will be worth **100 points** (See the Rubric for the grade breakdown)

1) Pick any of the following topics to write an ethics report

2) Use the NSPE Code of Ethics (and other engineering ethics guidelines) as a guide in your ethical discussions

3) In this report:

   a) You will briefly introduce the topic and why you chose it;

   b) You will discuss the advantages (pros) and disadvantages (cons) of the topic with regards to engineering ethics (see statement 2 above) [the pros and cons should be focused on possible design flaws & possible harm to ecological health (including water quality & quantity), human economy, human health, etc.];

   c) If the topic is not already a specific example (such as the Fukushima “Ice Wall”), then provide (a) specific example(s) and/or (a) case study(ies);

   d) Is there any engineering and/or scientific uncertainty? – if so, then what is it?

   e) Are there any whistleblowers? – if so, then what is their position?

   f) What is your ethical view of the topic based on the research that you have performed? (use NSPE Code of Ethics in your response);

   g) You should use the following resources for information (journal articles, newspaper articles, science magazine articles, academic/government Web sites, books, NSPE Code of Ethics, other scientific/engineering society code of ethics)

4) The report should be a **minimum of 2 pages typed single-spaced** with margins of 0.79” (top, bottom, left, right) in a **12 point** Serif font (liberation serif, freeserif, freemono, linux libertine, Gentium, Doulos SIL, Charis SIL, Nimbus Mono L, Nimbus Roman No 9 L, Liberation Mono, Times, palatino, or Times New Roman)

   Use this format:

   **Introduction**
   
   The topic
   
   Why you chose it

   **Body**
Advantages (Pros) and Disadvantages (Cons)
Specific examples and/or case studies (if not already a specific example)
Uncertainty
Whistleblowers

Conclusion
Your ethical view on the topic

Bibliography

5) Use the references and bibliography format as appropriate in the report (see the last pages)

Topics:
Military Research & Design (R&D)

Bribery

Corruption

Nepotism

Kickbacks

Whistleblowing

Protecting the public (Canon 1) versus protecting your client or employer (Canon 4)

Materials selection (economic cost versus protecting the public)

Precautionary Principle

Clean-up after the British Petroleum (BP) petroleum rig explosion and leakage in the Gulf of Mexico region

Fukushima “Ice Wall”

Hydraulic Fracturing (sinkholes, earthquakes, etc.)

The Addition of Fluoride Compounds to Drinking Water

The Addition of Disinfectants to both Drinking Water and Wastewater

Centralized Water/Wastewater Treatment and Distribution

Geoengineering

Drones
Weather modification

Petrochemical-based industrial agriculture (heavy equipment, petrochemical-based fertilizers & pesticides, etc.)

Genetic Engineering & Synthetic Biology

Software Patents

Artificial electricity (“Dirty” Electricity)

Alternating Current (AC) versus Direct Current (DC)

Centralized Electricity Production and Distribution

Electronic devices

Artificial Intelligence (AI)

Virtual Reality

Designing and using technology for mass surveillance and spying

Robot-Human interactions

Light Bulbs (Compact Fluorescent, Fluorescent, Incandescent, LED, etc.)

“Smart” Technology (Appliances, Cars, Energy/Electricity Grid, Houses, Glasses, Meters, Phones, etc.)

Renewable energy systems (hydropower, geothermal, solar, wind, etc.)

Energy Efficiency (including of buildings)

Energy Efficiency versus “Energy Effectiveness”

Nanotechnology

Design for obsolescence

Recycling/Downcycling (plastics, cardboard, paper, metals, glass, etc.)

Petrochemical-based automotive industry (review history of automobiles from Henry Ford to present-day looking at fuels, products used in the manufacturing of the vehicles, etc.)

Bridges, dams, highways, and other large scale civil engineering projects

Impervious surfaces (rooftops, roadways, parking lots, turf grass, planning/zoning, etc.)
Conventional Engineering Design versus “Green Engineering” or “Eco-Effective” Engineering Design

**Web sites**


Example:

**References** - Sources used for any verbatim facts, information, or concepts contained in the assignment. References are numbered according to where the citation is made in the writer’s text.


3. Wills, op. cit., p. 44. (Same as reference 1, but different page).

4. Ibid., p. 46 (Same as reference 3, but different page. Ibid. is used because Will's book has just a different page number)


7. Murray, loc. cit. (Same as reference 5.)

8. V. Table 2, p. 3. (The reader is referred to a table, which was presented and discussed on a previous page in this report).

9. Wills, *Advanced Chemistry*, p. 39. (Op. city. cannot be used because two works by this author have been cited.)

10. Ibid. (exactly the same as reference 9.)


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12. Allerton, J.D. Professor of Chemical Engineering, Eastern State University, in a personal interview, November 11, 1971.

13. Chicago Journal-Times, October 18, 1971, p. 40, col. 1. (Newspaper article without title.)


Source: Modified version of the TSU College of Engineering Capstone Design/Technical Project Manual, page 19

Bibliography
Sources used for general information or concepts, which do not appear verbatim in the paper. The bibliography is presented in alphabetical order, by the first letter of the author’s or editor’s last name. Second line of bibliography citation must be indented five spaces. If there is no author or editor, then the first letter of the title is used. See examples listed below:


Source: Modified version of the TSU College of Engineering Capstone Design/Technical Project Manual, page 20