EES 3040: Intro. to Environmental Engineering Term Project

This project and the formation of teams serve several purposes. First, the term project is meant to put material from class and the text in context. Through team presentations, you will become familiar with environmental engineering problems different from the one you are researching. Second, teams will provide the environment for collaborative activities and allow team members to assist each other. Third, completing the project in teams will promote working effectively in a group environment.

Tentative Schedule

Due dates subject to change

| Topic request                                      | January 23 |
| Teams assigned                                    | January 30 |
| Preliminary research (individual, 30% of project grade) | February 27 |
| Detailed outline (team, 10% of project grade)      | March 22   |
| Class presentations (team, 60% of project grade)    | April 17-24|

Topic Request

Your topic request should include your first three choices. There is no guarantee that you will receive your first choice, but you will be assigned to one of the topics you listed. Suggested topic areas are listed below.

Environmental Engineering Challenges and New Approaches:

1. Combined Sewer Overflows (CSOs): Modernizing our Older Cities
2. *Pfiesteria* and Water Quality
3. *Cryptosporidium* and Drinking Water
4. Dam Removal: Social, Economic, and Engineering Challenges
5. Future of the Environment and Automobile Industry
6. The Saga of MTBE as a Gasoline Additive
7. Constructed Wetlands
8. Landfills as Energy Production Systems
10. Risk Based Corrective Action (RBCA) to Petroleum Remediation

Case Studies:

11. Everglades Nutrient Removal (ENR) Program
12. Chesapeake Bay Compact and Water Quality
13. Restoration of the Kissimmee River
14. Old River Water Control Structure on the Mississippi River
15. Los Angeles Basin and Air Quality Management (continued on next page)
16. Yucca Mountain Repository and High-level Radioactive Waste
17. Three Gorges Dam: Engineering and Environmental Aspects
18. Remediation of the Rocky Mountain Arsenal
19. Woburn, Massachusetts: Aquifer Contamination and Remediation
20. Love Canal: Contamination and Remediation

If you are interested in any other topics not listed above, please let me know. If it is an appropriate topic, I will add it to the list. While some topics are covered in current scholarly journals and other library materials, other topics may require extensive use of newspaper, magazine, Web, and other current media. Note for the topics listed above, there is a significant amount of information available. As you learn more about your topic, it will be up to the team to narrow the focus of the topic. Be sure that your team focuses on the engineering aspects of your topic when preparing your research, outline, and presentation.

Team Assignments

Teams will be assigned so that as many students as possible receive their first or second choices. No effort will be made to accommodate special requests to be assigned with friends.

Preliminary Research (individual)

Each student will conduct his/her own preliminary research on his/her topic. The preliminary research has two parts.

1. In Part 1, each student will prepare an annotated bibliography for his/her topic. The annotated bibliography must include at least 5 relevant references, listed in alphabetical order and fully cited so that someone else can find the references. Also include a concise description (one paragraph) of the relevant information found in each reference.

2. In Part 2, each student will answer the following questions:

   (a) What is the most important issue/concept that the class should learn from our presentation?
   (b) How can we relate the topic to class material? What class concepts can be emphasized?
   (c) What completely new concepts must be explained with the context of our presentation?
   (d) What is a suitable format and outline for our presentation?

You must turn in both Parts 1 and 2 on the Preliminary Research due date. Also provide copies for each of your team members.
Detailed Outline (team)

Each team is required to submit a detailed outline of their presentation. This outline should include information on the content of the presentation. This will provide each team feedback on their current plan for their presentation.

Class Presentation (team)

Each team will give a presentation to the class on their topic. The presentations should demonstrate a thoughtful analysis of the assigned environmental engineering issue or case study as well as a working knowledge of related concepts from class. The presentations will be made in a professional manner, with a style and pace that allows other students to take useful notes. Visual aids should be used to help convey the material. Handouts are optional but are strongly encouraged. Teams may divide up the effort and presentation in any way they think is fair. Presentation dates will be assigned. The length of the presentations will depend on the number of students in class (approximately 20 minutes).

Team Member Evaluations

A score for each team will be assigned based on an evaluation of the outline and presentation. This team score will be the base score for each team member. The base score will be adjusted based on team member evaluations. Each student must turn in confidential evaluation forms for each of team member and assess an “adjustment in score” based on the effort and commitment to the team project. The average adjustment score will be added to the base score. If everyone in the team puts in equal effort to the project, the adjustment score will be 0, and each team member will receive the same grade. However, if a team member does not do his/her share of the work, the adjustment score will be negative, reducing his/her project grade. Conversely, if a students demonstrates significant leadership and effort, he/she would deserve a positive adjustment. I reserve the right to the modify the adjustment scores to maintain fairness.