CE 421/521 Introduction

• Index Card:
  – Name, phone, email
  – Major
  – year at ISU
  – Hometown

• What you would like to learn in this class
• What you think the most serious environmental problem is
• What you like to do in your spare time
CE 421/521 Introduction

• Find the person with the same number in the right hand corner of your index card.
• Take a few minutes to interview them.
• Introduce them to the class.
CE 421/521 Introduction

• Get into your discussion groups as follows:
  – Group 1: index card no. 1 & 2
  – Group 2: index card no. 3 & 4
  – Group 3: index card no. 5 & 6
  – Group 4: index card no. 7 & 8

• Prepare to debate the following statements
Debate Topics

“Due to the current energy crisis, ethanol produced from agricultural products (e.g., corn) is a viable substitute for oil.”

Group 1 in favor, Group 2 against

“Due to man’s activities our global temperature is increasing at an alarming rate and we must do something to stop it.”

Group 3 in favor, Group 4 against
## Syllabus

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Text: Environmental Biology for Scientists and Engineers, Vaccari, Strom, and Alleman, Wiley and Sons, 2006
Supplementary texts: Biological Wastewater Treatment, 2nd ed., by Grady, Daigger, and Lim, Marcel Dekker, 1999
Grading:  
- 2 exams @ 20% each  
- Final exam  
- Weekly Abstracts and Class Participation  
- Term Paper
Grading:  
- 2 exams @ 20% each  
- Final exam  
- Weekly Abstracts and Class Participation  
- Term Paper

Assignments:
1. Prepare a one page critique of a current (2005-2006) literature article every week (except exam weeks). This paper will be due every Tuesday at class time (see * weeks). Email submission is preferred.
2. Conduct a literature review and prepare a term paper (10 to 15 pages) on a selected topic (not related to your thesis) involving an environmental biotechnology application. The term paper topic will be due September 5, outline due Sept. 12, list of references and citation search due Spet 26, first draft due Oct. 31 and final paper will be due Nov. 16. These are strict deadlines and missed dates will cause a decrease in the term paper grade.
3. In small groups (2-4), lead a discussion of a current environmental research article. Each group will be responsible for leading at least one discussion. It is expected that everyone in the class will have critically read the article prior to the discussion. Literature discussions will be held on Thursdays.

Instructor: Tim Ellis tge@iastate.edu course web page: www.ccee.iastate.edu/courses/ce521/homepage.html
375 Town 294-8922 Office Hours: M: 10-11, R: 11-12
Visiting Professor: Dr. Ilter Aydinol, 355 Town, 294-3563 ilter@iastate.edu
Text: Environmental Biology for Scientists and Engineers, Vaccari, Strom, and Alleman, Wiley and Sons, 2006
Supplementary texts: Biological Wastewater Treatment, 2nd ed., by Grady, Daigger, and Lim, Marcel Dekker, 1999
Grading:  
  2 exams @ 20% each 40%
  Final exam 25%
  Weekly Discussions and Class Participation 15%
  Term Paper 20%

Assignments:
1. Conduct a literature review and prepare a term paper (10 to 15 pages) on a selected topic involving an environmental biotechnology application. The term paper topic will be due September 5, outline due Sept. 12, list of references and citation search due Sept 26, first draft due Oct. 31 and final paper will be due Nov. 16. These are strict deadlines and missed dates will cause a decrease in the term paper grade.
2. In small groups (2-4), lead a discussion of a current environmental research article. Each group will be responsible for leading at least one discussion. It is expected that everyone in the class will have critically read the article prior to the discussion. Literature discussions will be held on Thursdays. The lead group will be responsible for providing a written summary of the discussion, due the following week.

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Introduction

• Perspectives on biology
  – Why environmental engineers should study biology
Introduction

• Paradigm of scientists versus engineers
  – Scientists study a problem
  – Engineers design a solution
Introduction

• Environmental ethics “According to Leopold human use of land should preserve and enhance the diversity, integrity, stability, and beauty of the biotic community.”
Environmental Ethics

- As engineers we have to make decisions that will balance the cost of a project or activity and the resulting environmental impact(s).
Environmental Ethics

• ASCE code of conduct:
  – Engineers uphold and advance the integrity, honor, and dignity of the engineering profession by using their knowledge and skill for the enhancement of human welfare.
  – Engineers shall hold paramount the safety, health, and welfare of the public in the performance of their professional duties
  – Engineers should be committed to improving the environment to enhance the quality of life.
Assignment for Thursday

• Read chapters 1 & 4
• Each discussion group should bring in copies of three or four current (2005 or 2006) research journal articles that would be good for class discussion. Articles should involve some element of environmental biotechnology.