

BEE 6580
Biofuels Topics
SPRING 2013

Instructor of record. Lars Angenent, Ph. D.
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Course Webpage. <http://angenent.bee.cornell.edu/BEE6580.html>
Credits. 3

Time of Class. Lectures: Tuesdays and Thursdays from 10:10 - 11:25 am

Location of Class. Room 105, Riley-Robb Hall

Office Hours: Setup a meeting with me via e-mail or during the lecture.

Pre-requisite. Be a graduate student.

Course Description. During this course, we will perform an in-depth analysis of peer-reviewed publications that describe undefined mixed cultures in engineered systems. The specific topic changes each year, and, in some of the years, will be chosen with the input from graduate students at the beginning of the course, but will be within the area of biofuels or bioenergy generation. This class is highly participation-oriented and each student is expected to actively participate. During some of the lectures we will review a single paper selected by a student and go in depth. Within the biofuels topic, we will not only discuss the research and science, but also the application and evaluation. For example, we will examine the economic analysis and the life cycle assessment. The student choosing the paper will be expected to lead the discussion after a small lecture. With this information the course participants will split up in groups, and each group will design a biofuel/bioenergy system.

Required Text. No textbook required, research papers and reviews will be posted as password-protected pdf files on the course web page or will be given as a hard copy. You are expected to read the posted/given paper before coming to class, your involvement in discussing the paper is necessary and this will determine for the largest part your grade. Some helpful books to lookup information relevant to this course:

- Brock Biology of Microorganisms, tenth edition, Madigan, Martinko, and Parker, Prentice Hall, Pearson Education, Inc. Upper Saddle River, NJ.
- Analysis of Genes and Genomes, John Wiley and Sons, Ltd, Chichester, West Sussex, England.
- Environmental Molecular Microbiology: Protocols and Applications. Edited by Paul A. Rochelle, Horizon Press, Norfolk, England.
- Molecular Biotechnology: Principles and Applications of Recombinant DNA, third edition. Glick and Pasternack, ASM Press, Washington, DC.
- Microbial Genetics, David Freifelder, Jones and Bartlett Publishers, Boston, MA (1987).

Teaching + Term Paper. You will teach a lecture about a research paper for 30-45 minutes and will lead the discussion about this paper. First the basic technology needs to be taught and subsequently the chosen peer-reviewed paper will be discussed. The student is expected to choose a paper that uses an undefined mixed culture and that fits in with the theme of the year; a 5-page, single space term paper needs to be handed in before the lecture starts. This term paper needs to summarize, discuss, and critically evaluate the chosen peer-reviewed research paper. For example, the limitations of the study may be discussed.

Grading:

Half-semester Project Deliverable:	30%
Final semester Project Deliverable:	30%
Teaching + Term Paper:	30%
Class Participation and Professional Evaluation	10%

Dates:

This course is very self driven, and therefore dates of deliverables will be determined during a discussion in class.

Turnitin.com:

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

PLAGIARISM AND CHEATING:

Except when explicitly told otherwise, you are expected to work independently. Plagiarizing from either the primary literature (by copying and pasting text) or from another student (or from yourself from a previous course) will result in a failing grade, or, in more egregious cases, an appearance before the Academic Integrity Committee. For example, cheating on an exam will result in an immediate failing grade for the exam, an appearance before the Academic Integrity Committee, and potentially a failing grade for the course. We do not have an exam, but here your five-page paper and the discussion of the method must be executed according to the above rules.

Academic Integrity. Each student in this course is expected to abide by the Cornell University Code of Academic Integrity. Students must in no way misrepresent their work, fraudulently or unfairly advance their academic status, or be a party to another student's failure to maintain academic integrity. A full statement of this code may be found at:
<http://cuinfo.cornell.edu/Academic/AIC.html>.

Accommodations for Students with Disabilities. In compliance with the Cornell University policy and equal access laws, Lars Angenent is available to discuss appropriate academic accommodations that may be required for student with disabilities. Except for unusual circumstances, requests for academic accommodations must be made during the first three weeks of the semester so that appropriate arrangements can be made. Students are encouraged to register with Student Disability Services to verify their eligibility for appropriate accommodations.

