Introduction to Regional Bioenergy  
BRR 350 CRN XXXXX - 2 credits  
Fall 2013

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Time:  Thursdays 6:00pm - 7:50pm. Two Saturday field trips. This course combines approximately 60 hours of instruction, field trips, activities and assignments, for 2 credits.

Location:  TBA

Office Hours:  By appointment.

Prerequisites:  None.

Introduction:  A strong regional bioenergy industry could revitalize agriculture and contribute to long-term environmental and economic sustainability. In addition, increased use of biofuels is an important step toward mitigating the climate impact of using fossil fuels, and directly serves the national goal of reducing US dependence on foreign oil. However, successful development of bioenergy will require that we integrate scientific, social, environmental, economic, and business-related competencies, to meet bioenergy goals while avoiding the pitfalls. This course, the first core class in OSU’s Bioenergy Minor, will introduce Bioenergy core concepts and local Bioenergy industries and issues to an interdisciplinary audience.

Course Description/Objectives:  
Field trips to visit regional industry and research facilities will introduce Bioenergy core concepts and technologies. Guest lecturers will provide technical background and discuss economic, environmental and socio-cultural sustainability of Bioenergy. Course projects will analyze and present each facility in the context of regional Bioenergy issues.

Learning Resources:  readings will be from the following three online texts/reviews:  
http://www.oeconline.org/resources/publications/reportsandstudies/sustainablebiofuels
eXtension. 2012. BIOEN1. Introduction to Bioenergy.  
http://blogs.extension.org/bioen1/objectives/

There are no required purchased texts for this course.

Learning Outcomes:  
After taking this course, students will be able to:  
• Demonstrate an understanding of the core concepts of bioenergy, including feedstocks, conversion, and life cycle impacts.
• Present and discuss important contemporary issues relating to bioenergy
• Effectively communicate scientific concepts
• Explore and evaluate the role of bioenergy in regional research and industry
Evaluation of Student Performance:

**Attendance and participation** (2 points/class, 7 points/field trip) 30

**Reading, on-line quizzes** due by class time when reading due
(5 quizzes x 4 points each) 20

**Course Project** 30

**Short assignments**
- Research a Northwest Bioenergy Company
  (Blackboard Post 5 points; Presentation 5 points) 10
- Reflections
  (2 papers x 5 points each) 10

**Total** 100

**Explanation of assignments:**

**Reflections:** After each field trip you will write a paper reflecting on your experience. A reflection paper is not a summary of the field trip, but is instead your response to experiences, opinions, thoughts, and new information gained through your participation on the field trip. You should connect your field trip experiences to both your own personal interests in bioenergy and the assigned reading. See class resource section for further explanation of reflective writing. One page double-spaced.

**Research a Northwest Bioenergy Company:** Find a Northwest bioenergy company not visited during the field trips (see list on Blackboard; only one student per company). Using the provided template, gather information about the company to share with the class, such as what the company does, its location, who they employ, salary range, etc. You will give a short informal presentation on the company during class. We will provide guidance on giving presentations.

**Project:** Working in an assigned team, you will choose a place or facility we visited on one of the field trips and use it as the basis of a Prezi presentation. You will receive a detailed handout and in-class instruction.

**Statement Regarding Students with Disabilities**

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

**Link to Statement of Expectations for Student Conduct**, i.e., cheating policies: http://oregonstate.edu/admin/stucon/achon.htm

The syllabus and schedule will be updated on BlackBoard; it is the student’s responsibility to check for updated assignments. The instructor reserves the right to modify the course content, schedule of assignments, and/or evaluation procedures as determined necessary. It is the student’s responsibility to alert the professor if he/she can’t attend class or arrive on time, and to officially withdraw from any class that he/she ceases to attend. Failure to do so will result in the recording of an “F” grade. Please note that late work will only be accepted upon agreement of the Professor and with a grade penalty.
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<thead>
<tr>
<th>Date</th>
<th>Due</th>
<th>In Class</th>
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| Week 1     |                                               | • **Introductions/Pizza**  
  o Bioenergy Minor and Course requirements  
  • **Hands-on Learning Theory Activity** (SMILE Fermentation activity)  
  • How to give a presentation; How to write a good paper. |
| Week 2     | Reading/BB quiz: Gilman pp. 1-5; Bauen pp. 6-8| • **Lecture 1**: Introduction to Bioenergy: Shawn Freitas (College of Forestry)  
  and Jay Well (OSU SMILE and OSU Bioenergy Education Project) |
| Week 3     | Reading/BB quiz: Gilman 21-40; eXtension Module 1.2 | • **Lecture 2**: Introduction to Bioenergy, Part 2: Shawn Freitas (College of Forestry)  
  and Jay Well (OSU SMILE and OSU Bioenergy Education Project) |
| Week 3 (SATURDAY) |                                               | • **Saturday Field Trip** (SeQuential, Greenwood). University van; meet at 9 am in parking lot south of Linus Pauling building |
| Week 4     | Reflection on field trip: hand in via Blackboard | • **Lecture 3**: Feedstocks and Conversion: Dr. Mike Penner (College of Agricultural Science)  
  • **Lab tour 1** |
| Week 5     | Reading: Prezi directions.  
  **Hand in at end of class**: your team’s project outline | • Class divided into teams. Work on projects. |
| Week 6     | Reading/BB quiz: Bauen Ch. 5, 5.1-5.3.1. eXtension | • **Lecture 4**: Life Cycle Analysis and Sustainability: Dr. Ganti Murthy  
  (College of Engineering)  
  • Introduce the Review a Bioenergy Business assignment |
| Week 7     | Reading/BB quiz: TBA  
  In-class: review your frames with TA/Instructor | • **Lecture 5**: The Business of Bioenergy: Panel discussion with people who have local bioenergy businesses. Stahlbush Industries, Trillium, Hestia, Thompson Sortyard. |
| Week 7 (SATURDAY) |                                               | • **Saturday Field Trip** WWTP, landfill, TBA. University van; meet at 9 am in parking lot south of Linus Pauling building |
| Week 8     | Reflection on field trip: hand in via Blackboard  
  Reading/BB quiz: TBA Bioenergy Business Pres. | • **Lecture 6**: Bioenergy and Policy: David Bernell, OSU Political Science Dept.  
  • **Bioenergy Business In-class presentations** |
| Week 9     |                                               | • **No Class** – Thanksgiving Holiday |
| Week 10    | Projects due                                  | • **Student Presentations** |