## BEE 101 – Introduction to Ecological Engineering – Fall 2014
### Course Schedule & Syllabus

**Instructor:** Prof. Roger L. Ely, PhD, PE  
**Office Hours:** By appointment

<table>
<thead>
<tr>
<th>Tuesdays, 10:00-11:20, Gilmore 234</th>
<th>Thursdays, 10:00-11:20, Gilmore 234</th>
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<tr>
<td><strong>Sept 30</strong> Course Overview, Introduction</td>
<td><strong>Oct 2</strong> Engineering &amp; EcoE</td>
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<td><strong>Oct 7</strong> Problem Solving &amp; Creativity</td>
<td><strong>Oct 9</strong> Excel – Getting Started</td>
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<td><strong>Oct 14</strong> Working in Teams</td>
<td><strong>Oct 16</strong> Excel – Basics</td>
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<td><strong>Oct 21</strong> Using References; Writing a Paper</td>
<td><strong>Oct 23</strong> Excel – Methods &amp; Techniques</td>
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<td><strong>Oct 28</strong> The Design Process; Design Project</td>
<td><strong>Oct 30</strong> Excel – Methods &amp; Techniques</td>
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<td><strong>Nov 4</strong> Midterm Exam</td>
<td><strong>Nov 6</strong> Excel – Growth Modeling &amp; Forecasting</td>
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<td><strong>Nov 11</strong> Writing Engineering Reports</td>
<td><strong>Nov 13</strong> Excel – Optimization Modeling</td>
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<td><strong>Nov 18</strong> Giving Oral Presentations</td>
<td><strong>Nov 20</strong> Testing/Demonstration of Projects</td>
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<td><strong>Nov 25</strong> Project Presentations/Review</td>
<td><strong>Nov 27</strong> Thanksgiving Holiday</td>
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<td><strong>Dec 2</strong> The Art of Estimating</td>
<td><strong>Dec 4</strong> The Art of Estimating, Part 2</td>
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**Final exam: Thursday, Dec 11, 9:30 AM, Gilmore 234**

### Grading & General Information
- **Midterm** (50 pts), **Final** (50 pts), **Design Project/Report** (50 pts.), **In-Class Activities & Homework** (50 pts.)
  Grading will be curved based on the top score in the class and the class average.
- Unless stated otherwise, homework assignments are due one week after assigned. **Late homework assignments will not be accepted.** If not done acceptably, homework will be returned to you for modifications.
- **You will be given several handouts during the course.** I encourage you to keep them organized in a three-ring binder or in some other way so you can refer to them easily.
- The midterm exam will cover material covered up to and including Oct 28th.
- The final exam will be comprehensive but will emphasize material not covered on the midterm.
- **You should bring a calculator to class.** You won’t use it during every class meeting, but you will need it from time to time.
- You will need a laptop with Microsoft Excel 2010 or newer. **Please have Excel installed on your laptop and functional by Oct 9.** College of Engineering laptop purchasing guidelines and information about obtaining free copies of Microsoft Office and other software may be found at [http://engineering.oregonstate.edu/computing/laptop_req/recommend.html](http://engineering.oregonstate.edu/computing/laptop_req/recommend.html). Other software packages, such as Open Office, are strongly discouraged. In the past, many students have had major difficulties when trying to use a program other than Excel. Also, Excel is most common in professional practice, which is one of the reasons we teach it in this department. Finally, all demonstrations will be done on a PC, so Mac users may have to be more self-sufficient and/or help each other during the Excel classes.

Gilmore 201; 737-9409; ely@engr.orst.edu
Course Learning Objectives
At the conclusion of this course, students should be able to

1. explain general skills and knowledge required in engineering and describe the scope of ecological engineering as well as how the field interacts with human activities (Bloom Level 2 – Comprehension);
2. discuss the roles of analytical, left-brain activities and creative, right-brain activities in the process of problem solving (Bloom Level 2 – Comprehension) and use the engineering method of problem solving to solve assigned problems (Bloom Level 3 – Application);
3. identify the elements necessary for the effective functioning of a team (Bloom Level 1 – Knowledge), explain the Importance of teamwork to engineering practice (Bloom Level 2 – Comprehension), and describe the experience of functioning successfully as part of a team (Bloom Level 2 – Comprehension);
4. use Excel to analyze a variety of situations and solve problems relevant to Ecological Engineering (Bloom Level 3 – Application);
5. carry out a logical, structured writing process, with proper grammar, structure, and conventions appropriate to scientific and engineering documents (Bloom Level 3 – Application);
6. demonstrate knowledge and application of the engineering design process in a guided but open-ended design project (Bloom Level 3 – Application);
7. deliver an oral presentation, with correct content and technique, that reviews, analyzes, and critiques the team’s performance in the design project (Bloom Level 3 – Application and Bloom Level 4 – Analysis); and
8. use appropriate techniques to carry out calculations for estimating solutions to various problems (Bloom Level 3 – Application).

University and Departmental Policies
Students with Disabilities: “Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as early as possible, no later than the first week of the term. In order to arrange alternative testing, the student should make the request at least one week in advance of the test. Students seeking accommodations should be registered with the Office of Services for Students with Disabilities.”

Student Conduct: The Biological and Ecological Engineering Department follows the university rules on student conduct, which may be found at: http://oregonstate.edu/studentconduct/offenses.

Cheating or plagiarism by students is subject to the disciplinary process outlined in the Student Conduct Regulations. Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:

- cheating- use or attempted use of unauthorized materials, information or study aids
- fabrication- falsification or invention of any information
- assisting- helping another commit an act of academic dishonesty
- tampering- altering or interfering with evaluation instruments and documents
- plagiarism- representing the words or ideas of another person as one's own

Behaviors disruptive to the learning environment will not be tolerated and will be referred to the Office of Student Conduct for disciplinary action.

“The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student's freedom to learn and to protect the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.”