UNST 224 – ENVIRONMENTAL SUSTAINABILITY

Fall 2015 Syllabus

Lecture/Mentor Combined

Class Time:
Room

Instructor:
Office:
Office Hours:
Office Phone:
E-mail:

Graduate Mentor:
Office Hours:
E-mail:

Course Theme: A sustainable human society is one that satisfies its needs without jeopardizing the opportunity of future generations to satisfy theirs. The challenge of how we achieve a sustainable society is a vital theme that unites the various disciplines within environmental studies. A balanced combination of natural and social sciences is required if an adequate understanding of human interactions with environmental systems is to be achieved. The course is designed to help you bridge the scientific approach to analyzing and solving environmental problems, the socioeconomic concerns involved in formulating and administering environmental policy, and the historic and philosophical basis of humanity’s relationship to ecosystems. With the common goal of defining, characterizing and understanding environmental sustainability, the course identifies how each participating discipline can creatively contribute towards this end.

Course Objectives:
1) Understand the basic physical laws that dictate the bounds of resource use;
2) Describe and discuss the impact of humans on biodiversity, ecosystem health and the climate system;
3) Discuss the interaction between environmental, societal and economic aspects of sustainability at local, national and global scales;
4) Develop critical thinking skills to be able to evaluate the claims of both sides of environmental controversies and potential solutions;
5) Consider a variety of motivations for taking action to address sustainability issues;
6) Further develop skills in written and oral presentations, quantitative analysis and group work.
Course Outline:

**Define Sustainability and Its Need**
- September 29: Introductions to Course and Sustainability
- October 1: Need for Sustainability / Models of Sustainability

**Ecosystems and Ecosystem Services**
- October 6: Functional Ecosystems and Problems
- October 8: Ecosystem Cycles (Water and Nutrients)
- October 13: Field Trip to Marquam Park
- October 15: What are Ecosystem Services?
- October 20: Economics of Ecosystems

**Water Resources and Sustainability**
- October 22: Global and Local Issues
- October 27: Present Water Audit Results

**Exam #1**
- October 29

**Energy Resources and Effects on Global Climate**
- November 3: Energy Resource Issues
- November 5: Global Climate Change / Global Solutions

**Social Issues/Population**
- November 10: Work on Sustainability Project
- November 12: Population Issues / Environmental Justice
- November 17: Urbanization Issues/ Solutions

**Food Resources and Sustainability**
- November 19: Work on Sustainability Project
- November 24: Modern Agricultural Systems

**Final Group Sustainability Projects**
- December 1: Prepare and Practice Presentation
- December 3: Group Presentations

**Final Exam**
- Tuesday 10:15 to 12:05

Note: The schedule of lectures and discussions listed in this syllabus may change.
## UNST 224 – ENVIRONMENTAL SUSTAINABILITY

Schedule of Lecture, Mentor Activities, Readings and Assignments:

<table>
<thead>
<tr>
<th>Date</th>
<th>#</th>
<th>Lecture topics and mentor activities</th>
<th>Readings and Assignments due</th>
<th>Quiz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 29</td>
<td>1</td>
<td>Introduction to Course; Issues in Sustainability Form groups</td>
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<tr>
<td>Oct. 1</td>
<td>2</td>
<td>The need for sustainability; models of sustainability Intro to water audit and Excel</td>
<td>1. Safe operating space 2. Sixth Extinction</td>
<td>1</td>
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<tr>
<td>Oct. 6</td>
<td>3</td>
<td>Functional ecosystems; Introduction to Moral Ground and discussion leadership</td>
<td>MG: Introduction, Speth &amp; Watt-Cloutier</td>
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<tr>
<td>Oct. 13</td>
<td>5</td>
<td>Field trip to Marquam Nature Park</td>
<td>Water Audit 1 due</td>
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<tr>
<td>Oct. 15</td>
<td>6</td>
<td>Ecosystem Services and Issues Moral Ground discussion</td>
<td>5. Ecosystem services MG1: Readings from Chapters 2 &amp; 3</td>
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<tr>
<td>Oct. 20</td>
<td>7</td>
<td>Economics of ecosystems Intro to Sustainability Project (SP), choose topic</td>
<td>Water Audit 2 due 6. Valuing Nature</td>
<td>3</td>
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<tr>
<td>Oct. 22</td>
<td>8</td>
<td>Global to local water issues Compile water audit data; work on presentation</td>
<td>7. The Big Melt SP: Project identification due</td>
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<td>Oct. 27</td>
<td>9</td>
<td>Group presentations: Water audit results Morial Ground discussion Work on Sustainability Project</td>
<td>Water Audit Group Presentations MG2: Readings from Chapters 4 &amp; 5 SP: Action plan due (methods of measurement). Start action!</td>
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<td>Oct. 29</td>
<td>10</td>
<td>Midterm Exam; Moral Ground discussion</td>
<td>MG3: Reading for Chapters 6 &amp; 7</td>
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<tr>
<td>Nov. 3</td>
<td>11</td>
<td>Energy resource issues Searching and citing the scientific literature</td>
<td>8. Gather the Wind 9. Natural gas: Should fracking stop?</td>
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<td>Nov. 5</td>
<td>12</td>
<td>Climate change</td>
<td>10. Casualties of climate change 11. Health and climate change SP: Individual introduction due</td>
<td>5</td>
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<td>Nov. 10</td>
<td>13</td>
<td>Work on Sustainability Project Moral Ground discussion</td>
<td>MG4: Readings - Chapters 8 &amp; 9</td>
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<tr>
<td>Nov. 12</td>
<td>14</td>
<td>Population issues / Environmental Justice</td>
<td>12. 11 Billion 13. Human population grows up SP: Group Effect Graph</td>
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<td>Nov. 17</td>
<td>15</td>
<td>Urbanization Moral Ground discussion</td>
<td>MG5: Readings from Chapters 10 &amp; 11 SP: Individual summary due</td>
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<tr>
<td>Nov. 19</td>
<td>16</td>
<td>Work on Sustainability Project</td>
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<td>Nov. 26</td>
<td>18</td>
<td>No Class – Thanksgiving holiday</td>
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<td>Dec. 1</td>
<td>19</td>
<td>Revise and practice group presentations;</td>
<td>SP: Final individual papers due SP: Practice Group Presentation</td>
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<td>Dec. 3</td>
<td>20</td>
<td>Group presentations</td>
<td>SP: Group Presentation and Eval.</td>
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<td>Dec. 8</td>
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<td>Final Exam 10:15 am – 12:05 pm</td>
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Student Evaluations:

Participation (20%)
- Attendance/Class participation: 30 points
- Leading Discussion (Moral Ground): 20
- Quizzes (6 @ 5 points each): 30

Water Audit (10%)
- Personal Audit Report (2 reports @ 10 point. each): 20
- Group Presentation: 15
- Group Peer Evaluation: 5

Group Sustainability Project (30%)
- Group Action Plan: 10
- Individual Introduction/Summary (10 points each): 20
- Group Effects Graph: 10
- Individual Final Paper: 30
- Draft Group and Practice Presentation: 10
- Group Presentation: 30
- Group Peer Evaluation: 10

Exams (40%)
- Midterm: 80
- Final: 80

Total: 400 points

Grade Value:
Scores for each graded assignment/test will be totaled and a final grade will be based on the total score as a percent of 400 as follows: A= 100 to 94%; A- = 93 to 90%; B+= 89 to 87%; B= 86 to 84%; B-=83 to 80%; C+=79 to 77%; C=76 to 74%; C-= 73 to 70%; D= 69 to 60%; F= 59% and below.

Participation
Your participation grade includes attending class, paying attention and being respectful in class, contributing to discussions, working in your groups, in-class written assignments, taking quizzes and submitting discussion questions regarding the readings, as well as your group leading a discussion from a Moral Ground reading.

Posting Discussion Questions: When articles are assigned as readings, You are expected to come to class having read the discussion prior to class and prepare your own opinion or questions to participate in class. In order to balance all learning/personality types you also have the option to submit your questions or comments via D2L discussion threads by midnight the day before class. Your discussion questions in class or online should be thoughtful and framed in a way that will lead you and others to a greater understanding of the assigned article. You may comment on other students' posts, as long as your comments are thoughtful and polite.

Leading Discussion on Moral Ground reading: Each group of students will lead a small group discussion on selected readings from Moral Ground. Choose one reading from each of your assigned chapter (two total). Select and post these readings one week in advance of the discussion so that the rest of the class has enough time to prepare. Your group will then lead a thoughtful discussion of the readings. The components of a successful discussion are listed below:
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Before class as a group:
1. Select and assign readings (plus grey matter from the end of the chapter) one week in advance of discussion. (email the TA with the chosen readings so that the class can be notified)
2. Prepare a simple summary of context and background to the readings for the class (1-2 paragraphs per reading). Post on D2L.
3. Develop discussion questions, review questions submitted by students on D2L and incorporate some of these comments into your discussion.

In Class each group member will be responsible for:
4. Leading the small group discussion with the members of another group
5. Briefly review the context and background to the reading
6. Engage the group in a discussion lasting approximately 10 minutes using the prepared questions.
7. Summarize any reoccurring themes in the discussions; which reading or argument overall was found to be compelling and why? Report this back to the class and post summary on D2L.

All group members must participate actively in the discussion and will be evaluated based on the overall quality of the discussion. Each member of the group should be responsible for a specific role in the preparation and execution of the discussion.

Quizzes
These will be online (D2L) seven quizzes throughout the quarter. These quizzes will be focused on the assigned readings and will have multiple choice or true/false questions. The lowest quiz grade will be dropped.

Water Audit
The objectives of this exercise are to: 1) measure how much water you use during the course of a week, 2) identify a water-related behavior you can change, 3) quantitatively analyze how a change in behavior affects your water usage, and 4) present your water usage data in the context of the region’s water sustainability. You will receive water audit kits that will help you collect data on your water use. Your TA/mentor will demonstrate how to use Excel to calculate and graphically display your water use for two different weeks and compare the results. After performing the two individual audits, you will work in a group to summarize the findings of your group. As a group, you will prepare a presentation that compares your results, calculates the average water use and savings for the group, and suggests ways to improve water sustainability in the region. This assignment will be submitted via D2L.

Your two Individual Data Reports will be the results of your two water audits (week 1 and week 2) and a comparison of your first and second audits with a calculation of the water usage change that may have occurred as a result of your changed behavior.

Your Group’s Presentation in PowerPoint will report on the overall combined results of your group’s results compared with the water usage of Portland or a different region or country. Water Audit Project details will be discussed in the class sessions and will be posted in D2L. Some class time will be used to work on this project. All groups will present their findings in a 7-minute PowerPoint presentation on October 27.

Sustainability Project
This project will allow you to explore a sustainability topic of interest. You will work, both individually and in your group, to research your chosen topic, develop a plan of action for addressing this issue at a local level, take action, describe your impact both
quantitatively and qualitatively, reflect on the effectiveness of your approach, and make suggestions for actions that would address this issue on a local and global level. For this project, you must engage with the larger community to address a sustainability issue, either through volunteering with an existing organization or by convincing others to take action.

Components of the Sustainability Project:

1. **Project Identification:** Identify a sustainability issue your group will address at the local level.

2. **Group Action Plan:** What is the most meaningful way you can address your chosen sustainability issue at the local level during the two-week time frame of this project? Your group should decide on one, common approach that you will all engage in together. Chose from one of the following:
   - **Approach 1:** Develop a behavior change campaign - identify and develop strategies and tools to implement a short-term behavior change campaign. Select a target audience (e.g., college students) and include a concise way to evaluate the effectiveness of your campaign (before/after).
   - **Approach 2:** Volunteer / Community Service - research and choose a community program to assist as a volunteer, learn about your host's role in environmental sustainability, evaluate your experience and write a critique about the goals and effectiveness of the community program and your role as a volunteer. Each group member should volunteer for a minimum of 5 hours.

3. **Individual Introduction:** Identify your sustainability issue, provide background information on this issue at the global and local level, citing at least 3 peer-reviewed, published references in the text. How will you address this issue at the local level? This paper should be ~2 pages in length. You will revise this for use as the introduction for your final paper.

4. **Group Effects Graph:** Your group will prepare a graph or table of that quantitatively shows the effect of your group action. This graph/table will use by each individual in their summary and final paper.

5. **Individual Summary:** Once you have completed your action, you will write a summary describing the action and evaluating its effectiveness, given the short time frame of the project. Here, you will describe what you did (methods), describe the consequences of your actions, both qualitatively and quantitatively (results), and reflect on the effectiveness of this approach to addressing your sustainability issue at the local level, as well as your suggestions for addressing this issue at a larger scale (discussion). This paper should be 2-3 pages.

6. **Individual Final Paper:** Building on your introduction and summary, and incorporating feedback from your professor, mentor and classmates, write a 5-8 page, double-spaced paper that provides background on your sustainability issue, describes the action taken by your group, evaluates the effectiveness of your approach, and makes suggestions for addressing this issue at a larger scale.

7. **Group Draft Presentation:** A good draft of your presentation is due a week before presentations begin in order to allow for feedback from instructor and time for revision.
8. **Group Final Presentation**: As a group, you will provide an introduction to your sustainability issue, describe your action, evaluate your approach and make suggestions for addressing this issue at a larger scale.

9. **Group Participation Evaluation**: Each person will evaluate the contribution of each group member to the overall project.

The specific requirements and grading rubrics for the Individual Paper and the Group Presentation will be posted on D2L. There will be time in some class sessions for developing and working on the Sustainability Project.

**Exams**

The midterm and final exams will be comprehensive and based on the readings, lectures and in-class discussions. I will post lecture PowerPoint slides from lectures on D2L. You should also take notes in class on lectures and discussions. These exams are closed-book/closed-note.

**Required Readings**


Online readings listed on syllabus and available through the PSU library website and via D2L.


COURSE POLICIES AND RESPONSIBILITIES:

Group Policy: Each student will be assigned into a specific group for the duration of the term. Each group member is expected to uphold their responsibilities toward the integrity of the group's goals and performance.

Student Conduct: Please adhere to the code of conduct: http://www.pdx.edu/dos/codeofconduct; e.g., no academic dishonesty or negligence; no harassment, no plagiarism... failure to follow the academic code of conduct will result in loss of points and may result in further academic prosecution. All work should be written in your own words and cited appropriately. You should not quote large sections of text written by others. Plagiarized work will receive a zero. For more information please see the resources posted on D2L.

Personal laptops or electronic technical devices: Laptops or personal electronic / information devices may not be used during class lectures and discussions except for quiet note taking, doing requested informational research, or as needed during group projects.

New International Students Test Taking: On in class assignments and exams, international students may use electronic or book-based language dictionaries with prior approval of the instructor.

Communication: If you email your Mentor or Instructor you NEED to copy the other. You are expected to look for class Announcements prior to every class.

Desire2Learn: Active use of D2L is required for successful completion of this course. In an effort to reduce paper use, most course readings and descriptions of assignments will be posted online. You will also submit your assignments online for the majority of your projects. Please familiarize yourself with the course D2L site and seek assistance from your TA/mentor if you need help.

Study Sections: Study Sections will be every Friday (10am to 11am) in Cramer Hall, Room 287. These Study Sections are popular venues to come in and discuss class material with the Instructor, Mentor and/or your classmates.

Late work: Reading homework assignments will not be accepted late. For all other assignments, there will be a 10% decrease in your score per day (calculated to include weekends and limited to 2 days late). You are responsible for all material covered in class and are expected to make up any missed class content, assignments, and tests. Handouts provided in class or on D2L should be considered lecture material.

Illness Policy: If you are ill/have a fever please stay home. Contact the instructor and mentor prior to class or as soon as possible (by email). The lowest two attendance/participation grades will be dropped.
**Mandatory Field Trip (rain or shine):** The class will go on a field trip during our regular two hour class period. The location, Marquam Park, is within a short walking distance of PSU. The goal of the field study is to understand the components of an ecosystem and how humans affect them. Please note that the park paths are unpaved and uneven and may be muddy or/and slippery. More details will be provided during class.

**New Mandatory Safe Campus Online Training Module:** *If you have not done so already, please complete the Safe Campus Module in D2L.* The course is titled "Creating a Safe Campus: Preventing Gender Discrimination, Sexual Harassment, Sexual Misconduct and Sexual Assault."

As of Fall, 2014, PSU *requires* all students to take the learning module entitled "Creating a Safe Campus: Preventing Gender Discrimination, Sexual Harassment, Sexual Misconduct and Sexual Assault." The module should take approximately 45 minutes to complete and contains important information and resources.

If you or someone you know has been harassed or assaulted, you can find resources on PSU’s Enrollment Management & Student Affairs: Sexual Prevention & Response website at [http://www.pdx.edu/sexual-assault](http://www.pdx.edu/sexual-assault). PSU’s *Student Code of Conduct* makes it clear that violence and harassment based on sex and gender are strictly prohibited and offenses are subject to the full realm of sanctions, up to and including suspension and expulsion.

If you are having technical difficulties with the module contact OIT’s help desk at 503-725-HELP (4357) or help@pdx.edu. If you have any questions about the module requirement refer to Safe Campus Module FAQs or contact saveact@pdx.edu. Do not contact your instructor.