Course Syllabus

Instructor: Dr. Jennifer L. Morse (jlmorse@pdx.edu), Portland State University
Course Time: Office hours: Tues 2-3 PM
Classroom: Contact: jlmorse@pdx.edu; 503-725-2826

Course Description: This course introduces theories, principles, and regulations that guide restoration practices in a variety of ecosystems, including rivers, wetlands, forests, prairies, and urban areas. We will explore the causes of ecosystem degradation, motivations for restoration, and ways of evaluating restoration success, considering scientific, philosophical, management, political, and cultural dimensions. This is not a practical course on how to design and implement restoration projects.

Learning Objectives:
• Understanding of the various motivations and goals for ecosystem restoration
• Learning about theories in restoration ecology and biophysical factors that influence ecosystem restoration practices and outcomes
• Critical thinking about motivations, goals, implementation, and outcomes of restoration
• Skills in reading, analyzing, and writing about restoration from multiple disciplinary perspectives
• Engaging with restoration professionals and participating in restoration activities in the community

Sustainability: This course contributes to the study of Sustainability by giving students opportunities to connect scientific and ethical dimensions of ecosystem restoration with applied aspects like the political, engineering, and societal perspectives on restoration.

Student Conduct Code: PSU has a well-defined conduct code, http://www.pdx.edu/dos/codeofconduct. Academic honesty is essential. Please do not present someone else’s ideas or work as your own without attribution. We will conduct ourselves professionally and respectfully, so please avoid using your computer/phone/tablet for personal reasons during class.

Attendance and Participation: Engaged participation is expected in all class activities. Participation will be a significant portion of the grade. There will be a one-day optional field trip (details will be provided during the term). If you need special accommodations, please discuss your needs as early as possible with me and the Disability Resource Center. If you are ill, please let me know by email and stay home so that others don’t get sick too! Extended absences will require notes from a doctor’s office.

No Required Text: required readings will be posted on D2L or placed on reserve at the library.

Communication and Availability: I am happy to answer questions via email (I rarely check my voicemail), but please allow 24-48 hours for a response and check the syllabus and handouts first! You are welcome to drop in during my office hours to discuss questions about the course. If you make an appointment to meet at another time, please send me a description of your question by email so that I can be prepared. If you are having difficulties with the assignments or the material, please come see me early in the term.

Class Format and Student Activities: Most class periods will be devoted to small group discussions and whole-class discussions on reading assignments, supplemented by lectures to introduce key concepts and provide context for the readings. Other learning activities will include case studies on restoration projects, guest lectures, and student presentations during class.
**Evaluation:** Assignments will be graded on a point basis and weighted as shown below. Assignments and due dates are shown on the course schedule.

**Notes on writing for this class:** Students will write in several ways during the course. Impromptu in-class writing is intended to stimulate ideas and discussion and will not be graded. Assignments require higher levels of engagement, with clear structure and clear thinking that emerge from writing and re-writing. I expect writing assignments to be taken seriously, as they are important tools for thinking and learning.

**Homework assignments (30%):** (details will be posted on D2L; assignments will be turned in via D2L also)
- 10% Homework 1: Response to Davis and Slobodkin (2004)
- 10% Homework 2: Active engagement in restoration and written analysis
- 10% Homework 3: Summary and analysis of Guest Speaker presentations

**Case Studies (20%):** Students will form groups of 3-4 students to present case studies of restoration projects. A list of candidate sites will be given, but students are free to choose other case study sites (with instructor approval). Case studies will result in oral presentations (20 minutes) throughout the term, linked with the class topic for the day. Students will lead a virtual scientific field trip, covering the required topics in an informative, effective, and engaging manner. Details will be provided separately, but the case study will generally deal with: site geography and cultural history, cause of degradation, motivations for restoration, ecological theories, restoration practices used, who did the restoration, monitoring, and project evaluation.

**Participation and Reading Discussions:**

**Participation (15%):** The nature of the course lends itself to active student participation in class, for example through asking and answering questions, informal discussion, and ungraded in-class writing, in addition to small-group discussions. Participation is essential for success in the course.

Readings for class discussion will be posted in D2L at the beginning of the term. Students must be prepared to discuss the articles and ask/answer questions for each class. Each student must submit 2 questions for discussion relating to each paper by 3PM on the day of class. Completeness and quality of the discussion questions will be counted toward the participation grade.

**Discussion Summaries (15%):** Discussion of readings is central to this course. All students will actively participate in discussions, with the roles of facilitator, recorder, and participants to be determined at the start of each class. For each reading, the recorder in each group will summarize the discussion notes and submit them to the appropriate discussion forum in D2L within one week. Each student may serve as the recorder for multiple readings during the term. Students will be graded on their summaries. Details will be posted in D2L.

**Final Paper (20%):** Undergraduate students will write a 5-page paper and graduate students will write a 10-page paper (more depth) on a topic relating to your case study presentation or another topic (with instructor approval). A polished draft (hard copy) will be due on Nov 19 in class for peer review (5% for draft and 5% for review of another student’s draft), and the final paper (electronic) will be due on the day of the final exam (Dec 8 at 4PM in D2L).

**Field Trip:** The field trip will be a one-day tour of different restoration sites in the Portland metro region. Attendance is optional, but all students are encouraged to participate! Attending the field trip and writing a short summary of the trip may be counted as 5% extra credit. Details and the date to be announced.
Course Schedule

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Readings for Discussions</th>
<th>Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>9/29</td>
<td>Course overview – what is restoration?</td>
<td></td>
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<tr>
<td>2</td>
<td>10/1</td>
<td>Motivations; ecology overview</td>
<td>1, 2</td>
<td>Sign up for case studies</td>
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<tr>
<td>3</td>
<td>10/6</td>
<td>Terrestrial systems – ecological principles</td>
<td>3, 4</td>
<td>Topics for CS 1,2 due</td>
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<tr>
<td>4</td>
<td>10/8</td>
<td>Terrestrial systems – policy/management</td>
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<tr>
<td>5</td>
<td>10/13</td>
<td>Terrestrial systems – practices</td>
<td>7</td>
<td>Topics for all other CS due</td>
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<tr>
<td>6</td>
<td>10/15</td>
<td>Terrestrial systems – practices</td>
<td>8</td>
<td>Case Study 1 - cancelled</td>
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<tr>
<td>7</td>
<td>10/20</td>
<td>Aquatic systems – ecological principles</td>
<td>9, 10</td>
<td>Topics for HW2 due</td>
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<td>8</td>
<td>10/22</td>
<td>Aquatic systems – policy/management</td>
<td>11, 12</td>
<td>Homework 1 due</td>
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<td>10</td>
<td>10/25</td>
<td>Field trip – TBD (Optional)</td>
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<tr>
<td>9</td>
<td>10/27</td>
<td>Aquatic systems – practices</td>
<td>13</td>
<td>Topics for Final Paper due</td>
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<tr>
<td>10</td>
<td>10/29</td>
<td>Aquatic systems – practices</td>
<td>14</td>
<td>Case Study 3 – reach-scale</td>
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<tr>
<td>11</td>
<td>11/3</td>
<td>Wetlands – ecology and practices</td>
<td>15, 16</td>
<td>Case Study 4 – watersheds</td>
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<td>12</td>
<td>11/5</td>
<td>Wetlands – policy</td>
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<td>Case Study 5 – wetlands</td>
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<td>13</td>
<td>11/10</td>
<td>Coastal systems – ecology and policy</td>
<td>18, 19</td>
<td>Case Study 6 – coastalmarine</td>
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<td>14</td>
<td>11/12</td>
<td>Coastal systems – practices</td>
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<td>15</td>
<td>11/17</td>
<td>Extremely modified systems</td>
<td>21, 22</td>
<td>Case Study 7 – urban</td>
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<td>16</td>
<td>11/19</td>
<td>Invasive species</td>
<td>23, 24</td>
<td>Case Study 8 – Malawi</td>
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<td>17</td>
<td>11/24</td>
<td>Sustainability and climate change</td>
<td>25, 26</td>
<td>Paper drafts for peer review due</td>
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<td>18</td>
<td>11/26</td>
<td>Thanksgiving – NO CLASS</td>
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<td>Case Study 9 – climate change</td>
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<td>Homework 2 due in D2L at 4PM</td>
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<td>18</td>
<td>12/1</td>
<td>Guest speakers on Forest Restoration: Andrés Holz and Max Nielsen-Pincus (PSU)</td>
<td>TBA</td>
<td>Peer reviews of drafts due</td>
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<tr>
<td>19</td>
<td>12/3</td>
<td>Guest speakers on Wetland Restoration: Sarah Kidd (PSU); Phil Scoles (Terra Science)</td>
<td>TBA</td>
<td>Homework 3 due in D2L on 12/4</td>
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<tr>
<td>12/8</td>
<td>Final</td>
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<td>Papers due in D2L at 4PM</td>
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Readings:


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