Landscape Ecology
ESM/Geography 418/518
Spring 2015

Instructor: Professor Scheller. Environmental Sciences & Mgmt.
email: rmschell@pdx.edu

Office Hours: Wednesdays from 10-12am or by appointment.

Time and Location: Tuesday and Thursday from 2-4pm. Location: TBD.

What is Landscape Ecology?
Landscape ecology is an emerging discipline that recognizes that many systems - both natural and human - cannot be fully understood outside of their geographic context.

Landscape ecology recognizes that spatial patterns and heterogeneous environments are critical factors in understanding how systems work across a range of scales.

Landscape ecology provides concepts and theory that incorporate spatial patterning and spatial interactions into the dynamics of complex systems.

Landscape ecology has developed robust methods for characterizing spatial patterns and estimating how they might change through time.

Fundamental concepts of landscape ecology serve as foundations for decision-making and problem solving in applied fields such as conservation biology, land-use management, and urban planning and development.

The course is expected to be useful to graduate students and advanced undergraduates in natural resources, ecology, conservation biology, landscape architecture, geography, land use planning, and other fields.

Learning Objectives:
- Introduce students to Landscape Ecology.
- Explore the principles of landscape ecology as a framework for landscape research, analysis and management.
- Familiarize students with current research trends in landscape ecology.
- Explore applications of the landscape approach through laboratory exercises.
Teaching and Learning Activities:

Students will explore the concepts, methods, and applications of landscape ecology with 1) class lectures by the instructor and recognized experts in particular subject areas, 2) reading and discussion of literature representative of research in the field, and 3) completion of hands-on exercises designed to provide experience with quantitative tools of landscape ecology.

This course will consist of regularly-scheduled class meetings, two times a week. Occasionally, part of this class time will be devoted to labs; there are three labs total. Many class periods will be devoted to small and large group discussions on relevant literature.

Other learning activities will include assignments based on the labs, take home exams, and one field trip. The field trip will be an overnight visit to Mt. St. Helens and vicinity to examine disturbance interactions. The field trip is optional and can be substituted for either the mid-term or final. However, receiving full credit for the field trip requires that a student is engaged and responsible for the duration of the field trip. I encourage all students to attend the field trip if possible!

Text: There is no textbook. Readings from the literature will be assigned; these should be completed before the corresponding lecture. Other materials will be posted at the course D2L page.

Prerequisites: Graduate student or junior or senior standing, and an ecology lab course beyond the introductory level. Recommended courses: GEOG 313 (Biogeography) or BIO 357 (Ecology). Students also need to have a working knowledge of EXCEL.

Evaluation:

Grades will be based on the table below. Individual assignments will be assessed on a point basis. There will not be any opportunities for making up exams.

Undergraduate (418) discussions will be evaluated based on the quality and quantity of participation.

Graduate students (518) discussion will be evaluated based on summaries of the material and the discussion for each day that you are a discussion leader. There will be ~5 opportunities (exact number to be determined based on class size) to lead for each graduate student. Discussion summaries should be no more than 2 double-spaced pages.

Any student activity in the course (written or verbal assignments) can be used for the purposes of assessment of student learning in the class.
**Evaluation:**

Grades vary between undergraduate and graduate students. **You will be graded as a graduate student if you are pursuing a Master's degree or higher regardless of whether you are registered for 418 or 518.**

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<thead>
<tr>
<th>Description</th>
<th>Undergraduate</th>
<th>Graduate</th>
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<tbody>
<tr>
<td>Mid-term</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Final (or Field Trip*)</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Labs</td>
<td>30% (10,10,10)</td>
<td>30% (10,10,10)</td>
</tr>
<tr>
<td>Discussion / Participation</td>
<td>20%</td>
<td>30%</td>
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*The field trip can substitute for the final.

Grades will be assigned on a point basis. There **will not be** any opportunities for making up exams or extra credit.

**Labs:**

There are three labs scheduled for this course. Labs may require collaboration with other students (although collaboration may be optional). The labs typically require 3-5 hours of time outside of the scheduled class period. If the labs are conducted as a small group, only a single grade will be given for the collective group effort.

**Discussion:**

Discussion periods are a critical component and you will be graded on your participation. **Graduate students are expected to lead small group discussions and summarize the group’s conclusions.** There will be a signup sheet on the first day of class. Therefore, participation in classes is critical. Please inform me (via email) if you will be missing any classes.

**Technology**

You are allowed to use a laptop to take notes. Cell phones are not allowed in any capacity. All assignments and tests will be turned in via D2L.

**Sickness policy:**

You are encouraged NOT to attend class if you are sick with the flu or any other contagious disease. Do not bring your sick children to PSU either. You should stay away from school and other crowds until your fever has been gone for 24 hours (without medication).

If the lecturer is sick, you are still responsible for reading the lecture notes from that day and any reading. All assignments are due on time whether or not the lab or lecture instructor is sick.
**Final Grades**: All course components will be graded on a percentage basis, adding to 100%. Final grades will be assigned according to the scale below. Upward adjustments to this scale are possible but unlikely.

<table>
<thead>
<tr>
<th>Grade</th>
<th>% of possible points</th>
<th>Grade</th>
<th>% of possible points</th>
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<tbody>
<tr>
<td>A</td>
<td>94.5</td>
<td>C</td>
<td>76.5</td>
</tr>
<tr>
<td>A-</td>
<td>91.5</td>
<td>C-</td>
<td>73.5</td>
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<tr>
<td>B+</td>
<td>88.5</td>
<td>D+</td>
<td>70.5</td>
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<tr>
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<td>85.5</td>
<td>D</td>
<td>67.5</td>
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<tr>
<td>B-</td>
<td>82.5</td>
<td>D-</td>
<td>64.5</td>
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<tr>
<td>C+</td>
<td>79.5</td>
<td>F</td>
<td>Below 64.5</td>
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