Landscape Ecology (GEO4376/5378)  
(Fall 2013)

Class meets: M, W 10:10-11 am, Bellamy 114; F on Blackboard  
Office hour: M, W noon-1 pm or by appointment

Instructor  
Dr. Tingting Zhao, Department of Geography, 304 Bellamy  
(Tel: 850-645-8198; E-mail: tzhao@fsu.edu)

Credit Hours: 3

Course Description  
This course is designed to introduce students to concepts, methods, and applications of landscape ecology. Students are expected to understand how landscape structure and spatial configuration affect ecological processes as well as interactive relationships between natural and human systems through 1) lectures, 2) homework assignments, 3) closed-book quizzes; and 4) a term project.

Course Objectives  
At the end of the course, the student will:
1) describe landscape ecology concepts and approaches  
2) apply landscape-ecology methods to geographic pattern analysis, ecological conservation, natural resource management, landscape and urban planning, and other related fields  
3) identify human-environmental interactions and implication for land-use sustainability  
4) be able to use software packages, including IDRISI and ArcGIS, for spatial analysis of broader environmental and socioeconomic questions

Course Prerequisites  
GEO1330 (Environmental Science) or equivalents for all students  
GIS4043/5105 (Introductory GIS) or equivalents for all graduate students

Required Textbook and Readings  

Additional required readings are listed on page 6 and will be posted on the course website.

August 25, 2013
Recommended Textbooks

Electronic Materials
Class announcements, homework questions, lecture materials, and additional required readings will be posted on Blackboard course site LANDSCAPE ECOLOGY.

General Requirements for Homework Assignments
1) You will have five homework assignments throughout the semester (due dates are listed on Schedule page).
2) Each assignment consists of two parts – first part is to write an essay, and second is peer evaluation. **You will NOT be able to work on the second part if you failed to complete the first part.**
3) For the part of essay, unless stated otherwise, you will have 1 or 2 questions posted on Blackboard. Choose one of them to write an essay. The length of essay is expected to be approximately 500 words per essay.
4) Your essay must reflect the knowledge and thoughts gained from readings and lectures of Landscape Ecology. Irrelevant topics will not be tolerated and hence not counted towards grade.
5) For the part of peer evaluation, each one of you will be asked to rate and comment on five other posts by your fellow classmates. A structured rating form will be provided on Blackboard. The rating will be anonymous – the essay writer will not see the names of his/her peer reviewers; s/he will see the itemized scores from his/her reviewers.
6) The grade of each homework assignment is determined by the peer evaluation and selective reviews of the course instructor.

Graduate Term Project (graduate students only)
Graduate students will be required to finish an independent project that uses landscape ecology theory and approaches in an area of particular interest to them. The choice of topic must be approved by the instructor. Ideally, this project will provide an opportunity for students to identify or enhance their research, e.g., thesis or dissertation work.

The form of this project may be literature review or research project with real-world data analysis. The *project proposal* must be typewritten, covering the topic of project and a reading list. *Oral presentations* should be 20 minutes in length, to be followed by a 5-minute question period. Powerpoint or similar presentation media is required. Make your
presentation as you would for a scientific meeting; that is, provide general context, clearly state the question, describe your methods, present results, and draw conclusions. A term paper is also required. For literature review-oriented project, summarize concepts, progresses and future works of your selected topic. For research-oriented project, report research objective(s), background, data and methods, results, discussions and conclusions. The paper should be single-space 10 pages, plus tables, figures, and references.

**Undergraduate Term Project (undergraduate students only)**

Undergraduate students will be required to finish an independent research paper that uses landscape ecology theories and methods in an area of your own choice. The choice of topic must be approved by the instructor. The research proposal must be typewritten, covering the topic of choice and a reading list. The form of this paper may be literature review or research project with real-world data analysis. For literature review-oriented project, summarize concepts, progresses and future works of your selected topic. For research-oriented project, report research objective(s), background, data and methods, results, discussions and conclusions. The research paper should be single-space 5 pages, plus tables, figures, and references.

**Grading**

Your grade will be determined based on combined performance of homework assignments (50%), quizzes (30%), and term project (20%).

**Course Policies**

Attendance is required throughout the semester. Persistent informal talking and any reading or studying of other materials will not be tolerated.

No delay will be accepted for homework assignments and term project. There will be no makeup quizzes.

All changes to the course schedule made in class are the responsibility of the student. You are responsible for all missed class materials. Office appointments will be made only when there is a clear conflict with the student’s course schedule.

**Academic Horner Policy**

The Florida State University Academic Honor Policy outlines the University’s expectations for the integrity of students’ academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to “. . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University.” (Florida State University Academic Honor Policy, found at http://dof.fsu.edu/honorpolicy.htm.)
Americans with Disabilities Act
Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact

Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu
http://www.disabilitycenter.fsu.edu/

Syllabus Change Policy
This syllabus is subject to change with advance notice. The class schedule on our Blackboard course site gives the most up-to-date listing of our schedule.
## Schedule (subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/26,28</td>
<td>Ecology (review)</td>
<td>n/a</td>
<td>HW 0 part 1 due on Aug 30</td>
</tr>
<tr>
<td>2</td>
<td>9/4</td>
<td>Landscape ecology</td>
<td>Chapter 1</td>
<td>HW 0 part 2 due on Sept 6</td>
</tr>
<tr>
<td>3</td>
<td>9/9,11</td>
<td>Pattern-process interaction</td>
<td>Chapter 4 &amp; page 229-232; (Wiens 1976)</td>
<td>HW1 part 1 due on Sept 13</td>
</tr>
<tr>
<td>4</td>
<td>9/16,18</td>
<td>Scale &amp; scaling</td>
<td>Chapter 2; (Levin 1992)</td>
<td>HW1 part 2 due on Sept 20</td>
</tr>
<tr>
<td>5</td>
<td>9/23,25</td>
<td>Pattern metrics</td>
<td>Chapter 5; (Wu 2004)</td>
<td>HW2 part 1 due on Sept 27</td>
</tr>
<tr>
<td>6</td>
<td>9/30,10/2</td>
<td>Landscape fragmentation Quiz 1</td>
<td>(Saunders, Hobbs et al. 1991; Debinski and Holt 2000)</td>
<td>HW2 part 2 due on Oct 4</td>
</tr>
<tr>
<td>7</td>
<td>10/7,9</td>
<td>Model</td>
<td>Chapter 3</td>
<td>HW3 part 1 due on Oct 11</td>
</tr>
<tr>
<td>8</td>
<td>10/14,16</td>
<td>Neutral model</td>
<td>Chapter 6</td>
<td>HW3 part 2 due on Oct 18</td>
</tr>
<tr>
<td>9</td>
<td>10/21,23</td>
<td>Habitat selection</td>
<td>(Guisan and Zimmermann 2000; Johnson 2007)</td>
<td><strong>Term project proposal due on Oct 25</strong></td>
</tr>
<tr>
<td>10</td>
<td>10/28,30</td>
<td>Disturbance &amp; succession</td>
<td>Chapter 7; Chapin p288-301</td>
<td>HW4 part 1 due on Nov 1</td>
</tr>
<tr>
<td>11</td>
<td>11/4,6</td>
<td>Ecol conservation Quiz 2</td>
<td>(Miller and Hobbs 2002; Suding, Gross et al. 2004)</td>
<td>HW4 part 2 due on Nov 8</td>
</tr>
<tr>
<td>12</td>
<td>11/13</td>
<td>Human-landscape interactions</td>
<td>(Liu 2001; Redman, Grove et al. 2004)</td>
<td>HW5 part 1 due on Nov 15</td>
</tr>
<tr>
<td>13</td>
<td>11/18,20</td>
<td>Landscape sustainability</td>
<td>(Naveh 2000; Opdam, Steingrover et al. 2006)</td>
<td>HW5 part 2 due on Nov 22</td>
</tr>
<tr>
<td>14</td>
<td>11/25</td>
<td>Landscape planning &amp; design</td>
<td>(Leitao and Ahern 2002; Breuste 2004)</td>
<td>n/a</td>
</tr>
<tr>
<td>15</td>
<td>12/2,4,6</td>
<td><strong>Grad project presentation</strong>, course evaluation, course summary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td><strong>Term project due by 5 pm on Wednesday, Dec 11</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Additional Required Readings


