

ECL 201 and PLS 163: Ecosystem and Landscape Ecology

Winter 2012
Syllabus

Time and location: M,W 10:00 – 11:50; Physics Room 148
Professors: Dr. Mary L. Cadenasso, PES 1314, mlcadenasso@ucdavis.edu
Office hours: Thurs: 12-1pm, or by appointment
Dr. Valerie Eviner, PES 1312, veviner@ucdavis.edu
Office hours: Mon: 12-1, or by appointment

Readings: The textbook for the class is: Chapin et al. (2012), Principles of terrestrial ecosystem ecology. It is available as a free download online with a UCD connection (<http://www.springerlink.com/content/978-1-4419-9504-9>), and is posted on SmartSite. Hard copies can be purchased at the UCD bookstore. Please refer to the syllabus for readings accompanying each lecture. Textbook readings are required, but should not be considered a replacement for attending the lecture. Everyone is expected to attend all lectures. Additional readings, which may not yet appear on the syllabus, will be provided for download on the class SmartSite. These readings are also required.

Grading: The final grade for the course will be a standard letter grade. You are expected to complete the assigned readings and be prepared to participate in class discussions and exercises. Grading will be based on performance on homework assignments, “biome reports”, a final exam, and class participation. The total number of points for the class is 400. The four homework assignments are collectively worth 80 points (20% of final grade). The “biome reports” are collectively worth 120 points (30%) and are based on: a written introduction (8 points), a class presentation (8 points), two written summaries of controls over key ecosystem services (28 points each), and a written synthesis (48 points) (see project handout for full details). The final exam is worth 160 points (40%) and class participation accounts for 40 points (10%).

Homework assignments: In lieu of a midterm, 4 take-home assignments will be distributed throughout the quarter. The assignments are worth 20 points and each will be described the day they are assigned. They will also be posted to the SmartSite. Assignments are expected to be well written, be grammatically correct and be typed (figures can be drawn by hand).

“Biome reports”: The class project focuses on comparing controls over different biomes. Students will select a biome during the first day of class and will learn about this biome throughout the quarter. There will be 3-4 students working on each biome. During the first week of classes, students will complete the reading on “their” biome and write an *individual* summary of that biome and its controls. Each biome *group* will then present a summary of their biome to the rest of the class. During the remainder of the course, students within each biome group will split up specific topic assignments, so that each group member will focus on controls over two separate topics in their biome. These topics will resonate with lecture topics. For each of those two topics, the student will write a summary and be prepared to present informal summaries to the class during group discussion. Every student is responsible for a final synthesis of their biome at the end of the quarter. Additional instructions are provided in the “biome reports” file. Student reports are expected to be well written and organized, be grammatically correct and be typed.

No late work will be accepted without prior approval of the Professors.

Final Exam: The final exam will be administered on March 21, 2012 from 1-3 pm in the same room as the lectures. The exam will be comprehensive of the quarter and consist of short answers and essays.

Contacting the Instructors: Office hours, as listed above, are for dropping in. You are welcome to contact either professor via e-mail to make an appointment outside of office hours, or to ask a question. Please use your UC Davis e-mail account. Mail from other accounts may be disregarded as spam. Please use the memo line as an alert to the professor as to the content of your message.

Policies: You are expected to be familiar with the UCD Code of Academic Conduct (<http://sja.ucdavis.edu/files/CAC.PDF>), this code will be enforced in this class.

Plagiarism: Plagiarism is a serious academic offense. Briefly, plagiarism is representing the work of another as one's own. One common form of plagiarism is using the words of another without acknowledging the source of those words. This is plagiarism even if the material has never been published or copyrighted. Even text from the internet or something you heard from an instructor in a class must be immediately preceded or followed by a citation. Sometimes it is appropriate to use exactly what you read word-for-word to make a stronger impact. In this case, the quote must be an exact copy of the original and it must be set in quotation marks or in indented text to distinguish it from your own words. You still must include a citation, the change in format is not enough. Do not merely change a few words of a quote: representing the slightly altered text as your own is still plagiarism. In general, it is best to avoid using quotes because this prevents you from learning to express ideas in your own words. Representing the ideas of another as your own is also plagiarism. Follow the statement of another's ideas with a citation.

Lecture and Reading Schedule

<i>Date</i>	<i>Topic</i>	<i>Readings</i>	<i>Assignments</i>
UNDERLYING CONCEPTS			* denotes that assignment is for select groups of students
Jan 9	Course overview and expectations Introduction to the science and application of ecosystem and landscape ecology	<ul style="list-style-type: none"> • Biome reading (available on Smartsite) 	Select biome groups, <i>Assign biome report</i>
Jan 11	Principles and concepts of ecosystem ecology and ecosystem services	<ul style="list-style-type: none"> • Chapin et al., Chpt 1 	
Jan 16	HOLIDAY		
Jan 18	Principles and concepts of landscape ecology	<ul style="list-style-type: none"> • Turner et al., Chpt 1 	DUE: Biome summary <i>Assign HW 1</i>
Jan 23	Spatial Heterogeneity	<ul style="list-style-type: none"> • Chapin et al., Chpt. 13 (pp. 369-373 and 381-397) 	DUE: Homework 1
ECOSYSTEM SERVICES			
Jan 25	Student biome presentations Climate regulation	<ul style="list-style-type: none"> • Chapin et al., Chpt 2, • Chapin et al., Chpt 4 (pp 93-100) 	DUE: Biome group presentations
Jan 30	Climate regulation		* Biome- climate due <i>Assign HW 2</i>
Feb 1	Soil formation	<ul style="list-style-type: none"> • Chapin et al., Chpt 3 	* Biome- soils due
Feb 6	Erosion regulation	<ul style="list-style-type: none"> • Pimentel et al. 1995 	DUE: Homework 2
Feb 8	Water regulation	<ul style="list-style-type: none"> • Chapin et al., Chpt 4 (pp 93-94 and 100-122) 	* Biome- water due
Feb 13	Carbon fixation, net primary production	<ul style="list-style-type: none"> • Chapin et al., Chpt 5 (pp 123-129 and 134-156) • Chapin et al., Chpt6 (pp. 157-162 and 168-181) 	* Biome- C fixation due
Feb 15	Carbon storage – Part I	<ul style="list-style-type: none"> • Chapin et al., Chpt 7 	* Biome- C storage due
Feb 20	HOLIDAY		
Feb 22	Carbon storage- Part II Background on controls over nutrients	<ul style="list-style-type: none"> • Chapin et al., Chpts 8 and 9 (pp 259-286) 	<i>Assign HW3</i>
Feb 27	Provisioning and retention of nitrogen	<ul style="list-style-type: none"> • Chapin et al., Chpt 9 (pp 259-286) 	* Biome- Nitrogen due
Feb 29	Provisioning and retention of other nutrients, biogeochemical interactions	<ul style="list-style-type: none"> • Chapin et al., Chpt 9 (pp 286-296) • Chapin and Eviner 2003 	DUE: Homework 3 * Biome- Other nutrients due
SYNTHESIS AND APPLICATION			
Mar 5	Temporal heterogeneity & disturbance	<ul style="list-style-type: none"> • Chapin et al., Chpt. 12 (pp 346-366) • Chapin et al., Chpt 13 (pp. 373-381 and review pp. 381-397). 	* Biome- Disturbance due
Mar 7	Resilience and feedbacks	<ul style="list-style-type: none"> • Scheffer et al. 2001 • Resilience Alliance 2007 excerpt • Chapin et al. Chpt 12 (pp 	<i>Assign HW 4</i>

		339-346)	
Mar 12	Global Change- class discussion	<ul style="list-style-type: none"> • Chapin et al., Chpt 13 (pp. 389-392) • Chapin et al., Chpt 14 	
Mar 14	Management of multiple services across scales- Part I	<ul style="list-style-type: none"> • Chapin et al., Chpt 15 	DUE: Homework 4
Mar 19	Management of multiple services across scales- Part II		DUE: Biome Synthesis
Mar 21	Final exam 1-3pm Physics Rm 148		