PLANT ECOLOGY 11:704:332, Fall, 2012

Lecture: 9:15 – 10:35am Monday & Thursday
Lab: 1:00 – 5:00 pm, Monday, Tuesday, Wednesday, or Thursday

Professor in charge: Dr. Steven Handel e: handel@aesop.rutgers.edu ph: 732-932-4516
Lab/Field Instructors: Ms. Natalie Howe e: nhowe@eden.rutgers.edu
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Office hours for Dr. Handel: Mondays 10:45-12:00 or by appointment in the Plant Physiology Building,
1 College Farm Road, Cook Campus.
Office hours with the Teaching Assistants are by arrangement.

GENERAL INFORMATION

COURSE DESCRIPTION:
Study of plant life histories, populations, communities, plant-animal interactions (pollination, dispersal, herbivory), and evolutionary basis for plant ecological traits.
Labs include field trips to representative habitats in the state and greenhouse and field experiences.

COURSE OBJECTIVES:
- Students will express understanding of how evolution and factors such as resources, animal interactions, and competition affect numbers, distribution, and community dynamics, and how humans and plants interact..
- Given a New Jersey habitat, students will be able to predict likely plant communities.

COURSE MATERIALS:

Required:
- Gurevitch, J, SM Scheiner and GA Fox. 2006. *The Ecology of Plants*, 2nd ed. Sinauer Associates, Sunderland, MA. (referred to as "GSF" in the syllabus)
- Plant Ecology Lab/Field Manual ($5 in class, please pay with exact change)

Recommended:
- Collins, BR and KH Anderson. 1994. *Plant Communities of New Jersey*. Rutgers University Press, New Brunswick, NJ. (referred to as "CA" in syllabus)
- Clemants, S. and C. Gracie. 2006. *Wildflowers in the Field and Forest*. Oxford University Press, NY, NY. The best field guide to our wildflowers!

COURSE POLICIES:

Attendance: Lecture and lab attendance will be taken into account in final grade. Prior arrangement must be made for absence from an exam. You are allowed a maximum of 3 absences from lecture approved in advance, if possible. Allowed absences include observance of religious holiday, illness, family emergency, or court date. There are NO MAKE-UP LABS so you may not miss lab. If an emergency arises, contact your TA immediately! It is urgent that you are ON-TIME for field trips, vans must leave promptly.

Grading:

- 3 exams, 100 points each: will cover material from lecture, lab, and reading.
- Attendance Assignments in-class or on-your-own (approximately 5% of total grade).
- 10 "tweets," 10 points
- 1 worksheet on films, 10 points
- 1 journal assignment, 5 points
- 1 tropical plant assignment, 5 points
- 2 lab reports, 50 points each: Hutcheson Memorial Forest, Duke Farms
- 7 lab quizzes, 10 points each: plant identification

Late Assignment Policy: 10% will be deducted for each day an assignment is late.

ACADEMIC HONOR CODE:

Each student has the responsibility (1) to uphold the highest standards of academic integrity in the student's own work, (2) to refuse to tolerate violations of academic integrity in the university community, and (3) to foster a high sense of integrity and social responsibility on the part of the university community.

Cheating and Plagiarism: Plagiarism is defined as the use of any information, published or unpublished, without acknowledgement of the source. **Cheating** is a special form of plagiarism that occurs when you use the work of another student in place of your own. Violations are always reported to the Dean's Office, under University rules. It is extremely important that you distinguish your own ideas from those of others. Your sources must always be acknowledged. If you have any questions about this, please see the instructors.

AMERICANS WITH DISBILITIES ACT: Students with disabilities needing academic accommodation should contact the New Brunswick Contact the Office of Disability Services at 732-932-2848 or dsoffice@rci.rutgers.edu to determine your Coordinator for Students with Disabilities.

This syllabus is a guide for the course and is subject to change. You will be emailed if any changes occur.

PLANT ECOLOGY LECTURE SCHEDULE

Day	Lecture Topic	Readings (in G-S-F text, unless noted)
Sept. 6	What is plant ecology?	Ch. 1, p.1-3
10	Ecological services	Dailey, et al., 1997, on Sakai site
13	Life histories	Ch. 8, p. 185-192
17	Population dynamics	Ch. 5, p. 101-106, 119-127
20	Soil ecology (Dighton)	Ch. 4, p. 71-82, 92-96
24	Seed ecology	Ch. 7, p. 179-183
27	Seed ecology, part 2	
Oct. 1	Pollination ecology (Tartaglia)	Ch. 7, p. 163-179
4	No sex please, we're plants	Ch. 7, p. 158-161
8	**EXAM 1**	
11	Evolution and breeding systems	Ch. 6, p. 129-133
15	Ecotypes	Ch. 6, p. 137-142, 145-149
18	Plants in the city (Aronson)	Sakai
22	Evolution to oddball places	Sakai
25	Seed dispersal	Ch. 7, p. 179- 184
29	Community properties	Ch. 9, p. 205-215
Nov.1	Competition	Ch. 10, p. 225-233, 248-256
5	Herbivory	Ch. 11, p. 257-273
8	**EXAM 2**	
12	Succession/disturbance	Ch. 12, p. 284-304
15	Very common plants, the invasives	Ch. 13, p. 313-317
19	Very uncommon plants, the rarities	Ch. 13, 309-313
Tues. 20	Landscape ecology (Schwab)	Ch. 16, p. 369-372, 375-380
22	No class - *Happy Thanksgiving*	
26	Like lichens (Howe)	[lichens] Ch. 14, p. 327-351
29	Restoration ecology	SER Primer, on Sakai site
Dec.3	Photosynthesis: being green	Ch. 2, p. 25-41
6	Global patterns of diversity	Ch. 17, p. 411-415; Ch. 18, p. 417-443
10	Human ecology and plants	Ch. 16, p.385-387; Ch. 21, p.485-512
Mon. 17	**FINAL EXAM**: 9:00 – 11:00 a.m.	

LABORATORY SCHEDULE

All lab trips begin **promptly** at 1:00pm. We go out RAIN or SHINE!
You must be on time or you will be left behind!!! Boo hoo. Meet inlobby of ENR on College Farm Rd.
Always bring your Plant Ecology Lab/Field Manual, paper, and something to write with to lab sections!
You will meet in a classroom inside of ENR Bldg for all indoor labs. We will notify you of where to go.
Most labs are outdoors: **dress appropriately** for the weather. We get dirty. We get muddy. Raindrops keep fallin' on your head. Gotta love it. We're ecologists; we're the SEALS of the university.

ASSIGNMENTS (total 200 points):

**7 quizzes throughout semester on plant ID and plant communities you visit, total of 70 points
** 10 "tweets" (5 due by **week of Oct. 15**; 5 more due by **week of Nov. 26)** worth 10 points
Hutcheson Memorial Forest lab assignment **due week of October 15 worth 50 points
Duke Farms lab reports **due week of November 12 worth 50 points
** In-class worksheet on films **due in class week of November 12** worth 10 points
** Meet a tropical plant assignment **due in class week of November 26** worth 5 points
** Human impacts journal **due in class week of November 26** worth 5 points

Week of	Lab	Topic	Readings	Assignments
4-Sep	NO LABS		Ch 1 & 2 in Collins & Anderson (CA)	Start Twitter observations
10-Sep	Hutcheson Memorial Forest	succession, old fields, forest structure	CA Ch 7	Plant Press Assignment; Species Diversity Assignment
17-Sep	Hutcheson Memorial Forest	experimental field work, dichotomous keys	CA Ch 7	HMF Lab Report Assignment
24-Sep	Cheesequake State Park	salt marsh ecosystems	CA Ch 12	**Species Diversity Assignment Due**
1-Oct	Duke Farms	ecological restoration, herbivory, invasion	Review http://dukefarms.org	Duke Lab Report Assignment
8-Oct	Great Swamp Wildlife Refuge	freshwater wetland ecosystems, glacial history of NJ	CA Ch 8	
15-Oct	Edison EPA HQ	Vegetation and adaptations at a degraded urban site	TBA - Sakai site	**HMF Lab Report Due**
22-Oct	New Jersey Pinelands	Pine Barrens ecosystems	CA Ch 10	Late Return
29-Oct	Sandy Hook National Park	coastal ecosystems	CA Ch 13	Late Return
5-Nov	Rain Date / Review	Invasive species film, writing Duke lab report	** Indoor Lab	
12-Nov	Film Festival!	adaptations, pollination	** Indoor Lab	**Duke Lab Report Due; In class worksheet**
19-Nov	NO LABS	Thanksgiving vegetables	Joy of Cooking	
26-Nov	Greenhouse & Herbarium	Tour of tropical plants & the Chrysler Herbarium	** Indoor Lab	**Plant Journal Due Meet a Tropical**

				Plant Due