

## **Forest Ecology** (3 credits)

**FOR 3153C Section: 2265 Year: 2014**

**Lectures and Discussion** Thursday (periods 4-5, 10:40 AM to 12:35 PM); Newins-Ziegler 219

### **Laboratory**

Monday; periods 5-8 (11:45 AM – 3:50 PM); in the field, Newins-Ziegler 219, or McCarty computer lab  
Wednesday; periods 5-8 (11:45 AM – 3:50 PM); in the field, TBA, or McCarty computer lab

**Instructor:** Stephanie Bohlman  
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**Teaching Assistants:**

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**Office Hours:** Bohlman, Graves, Decker: to be determined or by appointment. Appointments can be schedule by using the email addresses listed above.

### **Course Description**

Ecological principles and their application to the management of forests; major sections include tree population and forest community dynamics, and ecosystem processes.

This course is designed to provide students with an overview of 1) ecological principles at four major scales of biological organization (individual, populations, communities, ecosystems) with an emphasis on forests, 2) applications of these principals to a number of current environmental problems (biodiversity crisis, global environmental change, and others) impacting forests, and 3) how forest ecologists answer questions with observations and experiments.

### **Course Objectives**

In addition to gaining understanding of important ecological concepts, students will:

- develop and practice “ecological thinking” toward a question or problem - analyzing how different abiotic and biotic factors and processes might affect the issue under investigation
- understand how ecological principles work across different forest types and spatial scales
- be able to read, interpret and use scientific literature, with a focus on interpreting graphs and tables
- learn how to use environmental monitoring equipment
- develop an ecological question to investigate with a field study – designing and carrying out data collection, analyzing the data and presenting the analysis and conclusions
- make scientific arguments that are supported by data, logic and credible sources of information
- improve writing and speaking skills

Many of the activities will be conducted in groups. For most group activities, student must turn in a group evaluation sheet evaluating the participation of all group members.

**Course is Designed For:** Undergraduate Students

## **Course Resources:**

**Book (REQUIRED): Barnes, B. V., D. R. Zak, S. R. Denton and S. H. Spurr. 1998. Forest Ecology. Wiley Press.**

Additional Resource (not required): Kimmins, J. P. 2003. Forest Ecology. Benjamin Cummings Press.

## **Format**

This is a 3-credit course, consisting of instruction in both the classroom and the field. I have minimized the amount of lecturing both in the classroom and field, instead seeking your active engagement in (1) classroom discussions and activities and (2) observations, data collection and project development in the field. It is expected that you will read the assigned materials by the due date. To assist you in extracting relevant concepts and terms from the reading, I will post a Reading Guide on the website at least one week ahead. There will also be a quiz that will be posted that must be answered by noon the day before the reading is discussed in class. During the first part of each class, we will review the answers to the quiz and clarify any points of confusion. You should be prepared to engage in this discussion. There will also be in class activities (case studies and analysis of figures) that require you to work through material and apply concepts alone and in groups.

## **Laboratory**

Much of the lab work done in this course is conducted in the field. For these field sessions, students will be active participants in making observations and taking measurements. The field sessions allows students to see the concepts discussed in class time in action. Field trips will proceed under inclement weather conditions unless dangerous. Whenever field (outdoor) labs are scheduled, students need to wear appropriate field clothing and bring pencil/pen and a notebook. If an outdoor lab is scheduled and weather prevents completion of the lab it will be rescheduled. Never assume the lab is cancelled. The lab will meet in NZ 219 if weather does not permit field work. All field trips are mandatory.

Things to bring in the field:

- 1) Footwear, clothes and raingear. Do not wear sandals or shorts. On most trips, there is a good chance you will be walking through thick bushes and grasses. Wear long pants and closed-toed shoes you do not mind getting wet or boots. If there is even a small chance of rain, bring a raincoat and/or umbrella. The field trips will proceed even if it is raining and you will *not* be excused from the activities if you are not dressed appropriately.
- 2) Water – Bring water! 4 hours is a long time to be in the hot sun. We will have a water cooler to refill your bottle.
- 3) A way to take notes in the woods (ie a small clipboard or pocket notebook), a pack to carry supplies, pencils (work at odd angles even when wet). Examples of waterproof field notebooks: <http://www.forestry-suppliers.com/search.asp?stext=rite%20in%20the%20rain>
- 4) Insect repellent. You most likely encounter mosquitoes, tick and chiggers. Covering your body with long pants and a long shirt helps. Insect repellent is the next line of defense. To go all out against chiggers and ticks, you can use Repel Permanone applied to clothes. (Wal-Mart, Target etc. should have all the selection you need). NOTE: Permanone is extremely lethal to cats. It stays on your clothes for up to 6+ washes. Do NOT apply Permanone to your skin.
- 5) Food: Field labs are long and conditions can be hot, wet or both. If you tend to lose energy during long stretches of outdoor activity, be sure to bring snacks and liquids to maintain your energy and be active in the field exercises. We do not provide food.
- 6) Snake Chaps: We will have snake chaps available if you choose to wear them.
- 7) Allergies: If you are allergic to insect bites, or if you have other medical conditions for which emergency treatment may be required, it is your responsibility to inform the instructors before the course starts, about: (1) your specific

condition, (2) where you keep your medicine, and (3) how to administer emergency treatment should the situation arise. Please help us help you be safe.

8) Please talk to me about any other issues or concerns you have about being out in the field. I am happy to discuss any issues or discomforts you might have and work with you on a solution.

**Assessments (final distribution may vary slightly from the one listed below):**

Quizzes	20%
Exams (mid-term/final)	20%
Reports on debates, case study, scientific literature	16%
Group lab projects	24%
Final lab projects (written/oral)	20%

**Quizzes:** On many of the weeks without exams, there will be graded quizzes on the reading material that are intended to guide students' reading and to give the instructor and students feedback on their understanding of concepts. The quizzes will be taken online in the "assessments" section of the course website. The quizzes will be filled out before the material is discussed in class. I will review the answers before class to identify areas that need to be covered in greater detail. Please type answers directly into the webpage, rather than uploading answers as an attachment. You will mainly be graded on evidence you read and attempted to understand the material. You will not receive credit for answers with excessive misspelling or incomprehensible writing. 10% per day will be deducted from the grade for any assignment turned in late, including failures to successfully use the course website. A grade of 0% will be given if a quiz is turned in after it is discussed in class. If you copy directly from the textbook on the quizzes, you will receive a grade of 0 for the quiz.

**Exams:** A mid-term and final exams are cumulative and will be broadly based on the concepts covered in the quizzes. The exams will allow students to synthesize the material presented to date.

**Reports on debates, case studies, scientific literature:** Working in groups, students will read and analyze scientific papers and other materials on major concepts in the course, and participate in case studies to which these concepts apply. Students will discuss these materials in class within groups. Students will then summarize their findings and/or opinion via short written reports or presentations.

**Group lab projects:** There will be 4 group lab projects. The data collection will be done as a group. Any written reports required for the lab project must be written and submitted by individual lab members, not as a group. Two reports will require you to re-write the report after you receive comments from the instructor. This is meant to give you an opportunity to develop your writing skills based on input from the instructors and your own self-critique.

**Final lab project:** The final project will require the group to come up with a research topic and data collection design and to collect data and analyze data. Your group will prepare and give an oral presentation as a group to the rest of the class. Each member of the group will receive the same grade based on the group presentation. Each individual will also write his or her own lab report that needs to be written individually. You will be graded individually on your written report.

Written assignments need to be submitted electronically and will be checked by software for plagiarism with other students, web and published literature. Plagiarism will result in no credit for the assignment and follow-up according to university policies (see Academic Honesty section)

**Peer review:** There is a lot of group work in this class (and other in the SFRC curriculum), so some of your grade will depend on how well your group works as a whole. For group activities in the lab sessions, you will be required to submit a peer review in which you rate and briefly describe the participation of each member in your group. This gives each student that chance to communicate if there are group members that are not participating, and helps hold each student accountable. If a student is repeatedly indicated as having poor group participation, the student's grade will suffer a deduction for those activities. Peer reviews are never shared with other students.

### **Electronic Communication**

I will send frequent communications about readings, assignments and other course activities via the elearning/sakai course website e-mail. **IT IS YOUR RESPONSIBILITY TO CHECK THE COURSE E-MAIL FREQUENTLY.** "I did not read my course e-mail" is not be a valid excuse for missed or incorrectly executed assignments and class activities.

### **Tentative Lecture and Laboratory Topics (all locations and topics may be changed by the instructors):**

Monday	Wed	Thurs	wk	lab location	lab topic	lecture topic
25-Aug	27-Aug	28-Aug	1	indoor	course intro; field safety	forest ecosystems
1-Sep	3-Sep	4-Sep	2	HOLIDAY	HOLIDAY	abiotic factors
8-Sep	10-Sep	11-Sep	3	indoor; McCarty Woods	environmental monitoring	environmental gradients
15-Sep	17-Sep	18-Sep	4	Austin Cary or Ordway	environmental gradients	tree biology
22-Sep	24-Sep	25-Sep	5	indoor	data analysis of field data	community ecology
29-Sep	1-Oct	2-Oct	6	Austin Cary Forest	competition	succession
6-Oct	8-Oct	9-Oct	7	indoor	data analysis of field data	Invasive species case study
13-Oct	15-Oct	16-Oct	8	Natural Areas Lab	succession	disturbance
20-Oct	22-Oct	23-Oct	9	indoor	salvage logging case study	midterm
27-Oct	29-Oct	30-Oct	10	Austin Cary	forest insects	productivity; carbon cycling
3-Nov	5-Nov	6-Nov	11	indoor	develop field project	nutrient cycling
10-Nov	12-Nov	13-Nov	12	field project sites	collect data	nutrient cycling
17-Nov	19-Nov	20-Nov	13	field project sites	collect data	landscape ecology
24-Nov	26-Nov	27-Nov	14	indoor	analyze data for field project	HOLIDAY
1-Dec	3-Dec	4-Dec	15	indoor/campus patches	campus land cover change	climate change case study
8-Dec	10-Dec	11-Dec	16	indoor	group presentations	no class

### **Grades and Grade Points**

Grading follows University standards and will based on the following scale: A (95-100), A<sup>-</sup> (90-94.99), B<sup>+</sup> (87-89.99), B (83-86.99), B<sup>-</sup> (80-82.99), C<sup>+</sup>(77-79.99), C (73-76.99), C<sup>-</sup>(70-72.99), D<sup>+</sup>(67-69.99), D (63-66.99), D<sup>-</sup> (60-62.99), E (<60)

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### **Late Assignments, Absences and Make-Up Work**

Assignments turned in after the posted deadline will have the earned grade reduced by 10% for each 24 hours that it is late. Some assignments, and all quizzes, are discussed in class. No credit will be given for assignments or quizzes turned in after the assignment or quiz is discussed in class.

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

### **Academic Honesty**

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

### **Software Use:**

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

### **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*

Counseling Services

Groups and Workshops

Outreach and Consultation

Self-Help Library

Training Programs

Community Provider Database

- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

### **Services for Students with Disabilities**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)