

FES 100 - Introduction to Forest Biology

Fall 2007

October 25, 2007

Lectures:

9-9:50 am; Mon., Wed., Fri.; Nutting 102

Laboratories: 1-5 pm.

Section 1: Monday in Rm 213.

Section 2: Wednesday in Rm 213.

I. Course Objectives.

- A. Provide an introduction to understand the following:
 - 1. What is a forest?
 - 2. How does a forest function?
- B. Provide guidance on how to succeed in college courses.
 - 1. Learn how to study the material: Use it and explain it.
 - 2. Learn how to take exams: Practice, practice, practice.
 - 3. Learn how to write scientific papers.

II. Instructors.

Lecture: William H. Livingston, Assoc. Prof. Forest Resources, School of Forest Resources.

Office: 116 Nutting Hall

Phone: 581-2990

E-mail: WilliamL@maine.edu or FirstClass

Dept. office: 201 Nutting Hall

Mailbox: 101 Nutting

Lab: Michael E. Day, Research Scientist, School of Forest Resources.

Office: 124 Nutting Hall

Phone: 581-2889

E-mail: day@umenfa.maine.edu

Dept. office: 201 Nutting Hall

Mailbox: 101 Nutting

III. References - Required.

Campbell, Neil A., and Jane B. Reece. 2004. Biology, 7th Edition. Benjamin Cummings, New York.

Knisely, Karin. 2005. A Student Handbook for Writing in Biology, Second Edition. W.H. Freeman & Co., Gordonsville, VA. 237 p.

IV. References - Optional.

(Note: The following references are needed for FTY 107 – Forest Vegetation)

Chambers, B., K. Legasy, and C.V. Bentley. 1996. Forest Plants of Central Ontario. Lone Pine Publishing, Edmonton, Alberta. 448 p. (required for FTY 107)

Farrar, J.L. 1995. Trees of the Northern United States and Canada. Iowa State University Press, Ames. 502 p. (required for FTY 107)

V. E-mail address.

Each student is required to have a FirstClass email account, and this will be used for communicating class information. If you prefer to use another email account, please give your e-mail address to the instructor by sending him a message.

VI. Web Site.

Copies of the lecture outlines, lab handouts, assignments, and recordings of lectures are available on the Web. Use the web browser, e.g. Netscape, to view, print, or save the pages. There is a link to the site from the Department of Forest Ecosystem Science home page or use the following URL:

<http://www.forest.umaine.edu/education/livingston/fes100/FES100CourseInfo.html>

VII. Apollo Network.

The computers in Nutting Hall are part of the college network called Apollo. To use these computers, you must sign-up with the network administrator, Louis Morin. **You must see Louis from 8-9 am in room 208 Nutting and register for using the Nutting Hall computers.** You will be using these computers later in the semester.

VIII. Course Grading.

Lecture	
Weekly exerc. & quiz.	15%
Exam #1	14%
Exam #2	16%
Exam #3	15%
Final Exam	15%
Laboratory	25%

IX. Lecture Exams.

There will be three lecture exams, one at approximately each third of the semester. The exams will cover all the material on the topic outlines, even if the topics weren't discussed during the lecture periods. Exam format will use multiple choice and short answer (40%) questions.

The first exam will cover topics 1-7, the second exam will cover topics 8-13, and the third exam will cover topics 14-21. The final exam will be comprehensive in that questions can cover any topic from the course.

Make-up exams will be available for excused absences only.

X. Requirements and Expectations for Field Laboratories

- A. A **hard-hat** is required for all field labs. Red or orange hard-hats are strongly advised. Silver, white, etc. are dangerous in the fall.
- B. **Safety glasses** are required for labs in which trees are measured and for walking through heavy brush.
- C. A **clipboard** is required. You will have data sheets, 8.5" X 11", each week. Get a clipboard with a cover or be prepared to use a plastic bag when it rains.
- D. Use **pencils** for writing in the field.
- E. **Rain gear** is required for wet days. Trees grow well in Maine because it is a cool, wet climate. To study forests in Maine, you will need to work in the rain. A rain jacket, rain pants, and waterproof boots work best.
- F. **Sturdy boots** or other closed-toe footwear are required. For your own safety, be sure to use a pair of sturdy boots for field labs. Sandals and soft shoes are not acceptable.
- G. **Smoking is not permitted** in buildings, vehicles, or forest.
- H. **If you are allergic to insect bites and/or stings**, please notify the instructor and bring necessary medication.

Please note: You will not be allowed to participate in outdoor laboratories unless you have a hard hat and the proper clothing for the weather.

XI. Laboratory: Exercises & Assignments.

There are two laboratory sections. All sections will meet in room 213 Nutting.

For the first half of the semester, **all sections will begin at 1:10 pm**. Laboratory exercises will require bus travel to nearby forests. Activities will involve making measurements, quizzes and written assignments.

At the end of October, laboratory exercises will be indoors. Each section will be divided into two groups, with the first group meeting 1:10 to 3 pm and the second group meeting 3 to 5 pm.

The quizzes, observations, measurements, data analyses, and written assignments will be graded. Late assignments will lose 10% of their grade for each day late.

XII. Missed Assignments and Incomplete Work

All missed assignments must be completed or excused in order to receive credit for the class. This includes all lecture work, quizzes, lecture notes (if needed), and exams. Work not completed by the end of the semester will result in an "I" or incomplete grade. If the work is not completed within the first 10 weeks of the next semester, the course grade is automatically changed to a failure.

XIII. Attendance

"Every student is to accept responsibility for satisfactory attendance in courses," UMaine Student Handbook.

- A. Every student is expected to be in class. If you miss a scheduled class period, this will be considered an absence.
- B. Excused absences will be accepted under special circumstances such as: Participation in an official University function; illness, poor travel conditions, and family needs.
- C. Where possible, such as in University functions or family needs, you must notify the instructor of your planned absence.
- D. In case of all planned and unexpected absences, you need the following:
 - 1. For University functions, you will need a written notice from the University office indicating the activity and its date.
 - 2. For all other absences, you will need to provide the name of a person or office who can be contacted to confirm the need for you being absent. The one exception to this is poor travel conditions due to weather.
- E. Unexcused absences will affect your grade as follows:
 - 1. 1 absence: 0% reduction in your final grade.
 - 2. 2 absences: 5% reduction in your final grade.
 - 3. 3 absences: 10% reduction in your final grade.
 - 4. 4 absences: 20% reduction in your final grade.
 - 5. 5 absences: 40% reduction in your final grade.
 - 6. 6 absences: automatic class withdraw or class failure.

XIV. Tutor Program

All first-year students are required to participate in the Tutor Program as an expectation for the class.

During the second class session, members of the Tutor Program staff will give a presentation about their program and about the need for studying at the college level. At this presentation, you will learn how to participate in the Tutor Program:

- 1. Request an appointment at the Tutor Program Office: 104 Dunn Hall or 581-2351 by September 14. I will expect each student to give me the appointment time by class time on September 14.
- 2. Get assigned a peer tutor based on times when both the students and tutor(s) are available. You will provide the FES 100 instructor this information by September 24.

3. Groups will meet twice a week, for an hour each time, in classrooms on campus. Classrooms in Nutting Hall will be requested should they be available on the days/times for each group.

First year students who do not participate or do not maintain participation in the Tutor Program will be dropped from the class if their average grade in the class falls below 65%. Students who successfully participate in the program will be allowed to earn extra credit by completing Tutor Program activities and showing the instructor evidence of these activities. The amount of points given to each activity will vary based on the effort required with a 10 point maximum. The maximum total points that can be earned in the semester is 100 which will be worth 10% of the final course grade.

XV. ADA Notice

I encourage students with a disability to speak with me about any accommodation needs to help assure success in this and other courses. Referrals for documentation and additional support are made to:

Ann Smith
Coordinator of Services for Students with Disabilities
Onward Building
581-2319

XVI. Student Behavior

Every student in the class is expected to be familiar with the University's Student Conduct Code (<http://www.umaine.edu/handbook/>) part of which states, "It is expected that students will conduct their affairs with proper regard for the rights of others and of the University. All members of the University community share a responsibility for maintaining an environment where actions are guided by mutual respect, integrity, and reason." If the instructor believes that a student's behavior is violating this code or other codes in the Handbook, the instructor has the option to ask that the behavior cease and will seek advice from the appropriate office on campus on how to deal with the student's behavior.

If you have questions about this policy or want examples on what is acceptable and unacceptable behavior, please speak with the instructor.

XVII. Lecture Topics.

Topic	Assigned Reading*
Introduction	
How we learn 9/5	1032-36
Tutor Program Presentation 9/7	
Principles	
1. Principles of science, biology, evolution 9/10-9/12	1-28
2. Forest Ecosystems and Energy 9/14	1098-1103, 142, 160, 1184-1194, 1186-1191
Basis for evolution and energy processes in forests	
3. Chemistry for Biology 9/17	32-45
4. Water Properties – A Basis for Life 9/19	47-56
5. Molecules of Life 9/21	52-85
6. Cells, Membranes, and Structure 9/24	98-101, 124-138
7. Energy, Metabolism, and Life 9/26-9/28	141-155
<u>Exam 1 October 3</u> (review on October 1)	
8. Photosynthesis. 10/5-10/10	181-198
9. Respiration. 10/12	160-178
10. Genes, DNA, and Replication 10/15	86-89, 296-307, 218-226
11. From Gene to Protein 10/17-10/19	309-331
12. Meiosis and Genetics 10/22-10/24	238-249, 251-2580
Components of a forest	
13. Biological component; viruses, bacteria, protista. 10/26-10/29	529-531, 334-337, 534-547, 549-551, 558-562, 567-569
<u>Exam 2 November 2</u> (Review October 31)	
14. Plants 11/5-11/9	573-588, 591-601
15. Plant Structure and Growth. 11/12	712-728
16. Transport in Plants 11/14-11/16	738-753
17. Plant Nutrition 11/19	756-768
18. Plant Reproduction 11/26	602-604, 771-781
19. Plant Responses to Signals 11/28	788-812
20. Fungi. 11/30	608-623
<u>Exam 3 December 5</u> (Review December 3)	
21. Animals. 12/7-12/12	626-636, 638, 642-643, 646, 650-668, 671, 678-702
22. Review. 12/14	
<u>Comprehensive Final: December.</u>	

*Readings are from Campbell and Reece text.

XVIII. Laboratory Topics.

'*' indicates field lab. Dress appropriately for weather, wear closed-toe footwear, and bring your hardhat.

Dates	Topic	Notes
September 10 and 12	Plant ID, Plot setup, sampling techniques	Before lab view: <i>Forest ecosystems and dynamics</i>
September 17 and 19	Inventory plots data collection	Before lab view: <i>Shade-tolerance and light environments</i>
September 24 and 26	Data collection Light measurements	Before lab view: <i>Resources and competition</i>
*October 1 and 3	Data collection Light measurements Collect samples for soil biota lab	Lab report: observations on successional stages and hypotheses for final report
October 10 and 12	NO LABS	
*October 15 and 17	Forest influences on stream chemistry / decomposers and nutrient cycling	
*October 22 and 24	Harvesting influences	
October 29 and 31	Intro to data analysis	Stream chemistry report due
November 5 and 7	Soil biota lab and analysis	
November 12 and 14	Measuring photosynthesis Data analysis	
November 19 and 21	NO LABS – Work on your final report!!!	
November 26 and 28	Genetics	Report draft due
December 3 and 5	Tree anatomy	
December 10 and 12	Open for discussions with instructors	
December 14	All final reports must be turned in!!!	

* Recorded lectures can be found on the FES 100 website