

COURSE OUTLINE
FORS 240—Tree Biology—Fall 2015
2 Credits

Course Information

Instructor: Edwin Burke
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Course Schedule:
Lecture: Wednesday 10:10-12:00, Forestry Bldg., Room 301 (Plant Lab)
Texts: Forestry 240 Tree Biology Course Pack available from Burke at 1st meeting

Course Schedule

Week	TOPIC
1	Introduction; Overview of Tree Biology Course & what we will be covering; Introduction to the plant cell types and functions
2	Plant cell types and functions (cont.); 1° and 2° cell wall chemical components; growth and structure of 1° and 2° walls
3	Apical meristems and primary meristems; role of growth promoting and inhibiting hormones
4	Development of the woody aerial stem and twig morphology;
5	Examination over cell walls, apical meristems, primary growth, developing aerial stems and twigs
6	Leaf structure and photosynthesis
7	Leaf structure and photosynthesis (cont.)
8	Gymnosperm sexual reproduction; male and female structures, pollination, fertilization, seed development and germination
9	Angiosperm sexual reproduction; flower structure, pollination, double fertilization, zygote development; fruit types, seed development and germination
10	Examination over Leaves, Gymnosperm and Angiosperm sexual reproduction
11	Roots; structure, water and nutrient collection, hormonal control of growth
12	Secondary phloem; structure, sap content, flow direction and velocity
13	Secondary xylem; structure, hormonal control of lateral growth, sap content, flow direction and velocity

- 14 Thanksgiving Break—Wednesday through Sunday**
- 15 Secondary xylem; wood's role in stem strength and characteristics of interest for utilization in various products
- 16 FINALS WEEK- Examination over roots, secondary phloem and xylem**

Lectures will be delivered via whiteboard diagrams, live microscope images of prepared slides, video recordings of process explanation and PowerPoint slide presentations. Questions will be welcomed at any point in the lecture.

Examinations will consist of preparing labelled diagrams of stem, root, leaf and flower structures, life cycles and processes. The ability to define terms and a good understanding of the angiosperm and gymnosperm life cycles is also necessary. A look at the scope of the course will tell you what we will be doing this semester, and staying up with the material should be a priority.

An extensive chemistry background is not necessary, nor is a course in either plant physiology or plant anatomy. For you to have taken a fundamental biology class that covered mitosis/meiosis, basic plant structure and anatomy is a definite plus. For those lacking this background, I will be glad to bring you along collectively with the class or individually. A review of a basic botany textbook, available in the library or on-line sources, will also help as we move through the material.

It is my desire to present this class in a way that it is an enjoyable challenge. I love teaching people about trees. Research and “real-world” experience is the foundation of the information and techniques you will be presented with, and you should use and learn from them. The goal is to present the fundamental structure and function of the different systems of the tree, coupled with my experience in working with these systems in a variety of settings, to provide the foundation for decision making in forest management settings. It is my sincere intent to make the challenge of this course purposeful for you this semester and in the years ahead. I look forward to this semester with you!

Course grading will be as follows:

2 1-hour lecture exams @ 200 pts. each	400
1 Final Lecture Exam @ 200 pts.	<u>200</u>
Total Points for the Course	600

Approximate grading scale will be:

A = 90.0-100%; **B** = 80.0-89.9% **C** = 70.0-79.9%; **D** = 60.0-69.9%; **F** < 60.0%

- **All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.**
- **All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://life.umt.edu/vpsa/student_conduct.php.**