

Syllabus

EEB 414 - Plant Anatomy and Development

Spring semester 2014

Instructor: Dr. Joe Williams**Office: Hesler 341; Telephone: 974-6202**

Tuesdays and Thursdays

3:40 p.m. to 4:55 p.m.

Hesler room 202

Textbook (choose one of two options):**1) Esau, K. 1977. *Anatomy of Seed Plants, 2nd Ed.* New York, NY: Wiley. **This is the required text.******A more expensive alternative:****2) Evert, RF 2006. *Esau's Plant Anatomy. Meristems, cells, and tissues of the plant body: their structure, function, and development* Hoboken, NJ: Wiley-Interscience. **This is an up-to-date alternative, but it does not cover the material as broadly.****

No.	Date	Day	Subject
1.	Jan. 9	Th	Introduction – course organization – using the microscopes, sizes of cells
2.	Jan. 14	T	Using the microscopes and cameras continued, making hand sections
3.	Jan. 16	Th	Plant body plans and growth
4.	Jan. 21	T	The Plant body continued - <i>paper discussion #1 (instructor)</i>
5.	Jan. 23	Th	Plant tissue systems and cell types
6.	Jan. 28	T	Plant cell biology (John Reese) - <i>First photos are due by 5pm by email</i>
7.	Jan. 30	Th	Plant cell walls - <i>paper discussion #2</i>
8.	Feb. 4	T	Epidermis * cell wall lect. T and cell contents this week, not epidermis**
9.	Feb. 6	Th	Epidermis * cell contents this week, not epidermis**
10.	Feb. 11	T	<i>Exam 1</i>
11.	Feb. 13	Th	Xylem and secondary growth *snow day
12.	Feb. 18	T	Xylem and vascular cambium continued - <i>paper discussion #3</i>
13.	Feb. 20	Th	Xylem continued *finished epidermis today
14.	Feb. 25	T	Phloem
15.	Feb. 27	Th	Cork cambium - <i>paper discussion #4</i>
16.	Mar. 4	T	Shoot apical meristems and branching
17.	Mar. 6	Th	Shoots continued...

No.	Date	Day	Subject
16.	Mar. 4	T	Shoot apical meristems and branching
17.	Mar. 6	Th	Shoots continued...
18.	Mar. 11	T	Root apical meristems and roots
19.	Mar. 13	Th	Roots - <i>paper discussion #5</i>
Mar. 17-21		Spring break	
20.	Mar. 25	T	Secretory structures
21.	Mar. 27	Th	Exam 2
22.	Apr. 1	T	Leaves
23.	Apr. 3	Th	Leaves - <i>paper discussion #6</i>
24.	Apr. 8	T	Flowers
25.	Apr. 10	Th	Female gametophytes
26.	Apr. 15	T	Male gametophytes
27.	Apr. 17	Th	Embryos and seeds - <i>paper discussion #7</i>
28.	Apr. 22	T	Fruits
29.	Apr. 24	Th	Exam 3
	May 5	W	Final projects are due by 2:30 p.m. - Monday, May 5 NO EXCEPTIONS!

Grading system	Exam 1 (100)	10 %
	Exam 2 (100)	10 %
	Exam 3 (100)	10 %
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Exam total:		30 %
	Paper and discussion (200)	20 %
	Photo journal (400)	40 %
	First photos = 50	
	Final project = 350	
	Class participation (100)	10 %
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Total		100 %

If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact the Office of Disability Services at 191 Hoskins Library at 974-6087. This will ensure that you are properly registered for services.

Please use *Blackboard* to download class materials and to monitor your progress.

<http://online.utk.edu/>

Exams. The exams will focus on the most recent material covered, but you will be expected to have retained and be able to use material from past exam(s). Exams are mostly designed to test your ability to recognize structures and to apply concepts learned in lecture.

Laboratory notebooks. It is really helpful to keep notes and drawings in a notebook. You can buy a 1” ring binder at the bookstore – paper will be provided for you in the lab.

Present a published paper with a partner (or two) for an in-class discussion. We will read and discuss an article from the plant anatomy primary literature every two weeks. The team leading the discussion will provide images from the paper and some background material in a powerpoint format to lead a 20 minute discussion. I will present an example or two in class. Each of you will write a one page summary of the paper, to be turned in by the next class. The summary should highlight the main findings of the paper *and* the discussion we had in class. 50 % of your grade will be on the quality of the group presentation and 50 % will be on your individual written summary.

Photo journal (you may do this with one partner or alone). Individually, *or with a partner*, you will build up a series of photos of the internal anatomy of the plant body from material prepared in class and photographed on various cameras. These images will be copied into a powerpoint file and then labeled and captioned, so that any viewer can appreciate what parts of the plant are being described. *To make a good journal, you will have to make time to work in the lab outside of the normal class hours.* If you work as a team, the journal will have both of your names on it, but I expect the labeling and captions to be done *individually*. In other words, you can share photos and interpretations of structures, but each person must process these photos separately.

Extra credit: Do you want to add an extra credit hour for this class? Some of you may want to do a more detailed plant anatomy project – if so, *you can register for EEB 400, section 009, for one credit hour.* Please discuss this option with me if you have a project in mind, or I can help you choose one.

The fine print section:

Make-up exams will only be given when a student has a valid excuse recognized by the University.

Such excuses are:

- a. A death in the family
- b. A medical illness of a severity that prevents a student from attending class (includes accidents)
- c. A University-sponsored activity or event that requires that a student miss class (requires letter)
- d. In order to take a make-up exam, a student must notify the Instructor as soon as possible and provide written documentation of one of the legitimate excuses listed above where possible. Students missing an exam due to a University-sponsored event should provide the Instructor with documentation of the event *prior to* the scheduled exam so that a make-up can be scheduled. **Make up exams for this type of course, which involve practical set ups, are time consuming for the instructor to give. Make up exams should be a last resort only. If you fail to come to a scheduled makeup exam, you will lose the opportunity.**

Communication: You can reach me by email or phone. Generally, I will make announcements about class matters only during lecture. I will post announcements in Blackboard occasionally, and in unusual circumstances (such as an emergency), e-mails will be sent. It is your responsibility to attend class and check Blackboard regularly!

Citizenship: Please arrive on time and do not leave early unless for emergency. Please keep socializing in class to a minimum and cell phones off. We have very little lab time!

YOUR RIGHT TO KNOW:

Tennessee law requires that you are provided notice that some of the laboratory exercises involve contact with chemicals which have been identified with potential health hazards. These include, but are not limited to: ethyl alcohol and stains. While every effort has been made to make the materials as safe as possible, these chemicals are toxic or dangerous and you must be responsible for their safe handling. If you feel you are at a higher risk than normal because of some medical condition, we recommend that you consult your physician before taking this course.