

Syllabus - Fall 2014

EEB 424 – Plant Diversity and Evolution

Instructor: Dr. Joe Williams
 Lab instructor: John Reese
 Lectures: Mondays and Wednesdays 9:05 to 9:55 a.m.
 Lab: Thursdays 3:40 to 6:20 p.m.

Office: Hesler 341; Telephone: 974-6202
 Office: Hesler 317; Telephone: 974-9371
 Hesler 427
 Hesler 202

No.	Date	Day	Subject	Quiz	Bold 87 Chapters
1.	Aug. 20	W	Introduction – plants and plant diversity		Handout
Lab 1	Aug. 21	R	Introduction; Cyanobacteria and Euglenophyta		2, 6
2.	Aug. 25	M	Eubacteria versus Cyanobacteria (Blue-Green Algae)		2
3.	Aug. 27	W	Cyanobacteria and Euglenophyta		2, 6
Lab 2	Aug. 28	R	Other algae plus Rhodophyte (Red algae)	Q1	4, 7, 8, 9
	Sept. 1	M	LABOR DAY – NO CLASS		
4.	Sept. 3	W	Phaeophyta, other Chlorophyll a + c Algae		4, 7, 8
Lab 3	Sept. 4	R	Green Algae - Chlorophyta and Streptophyta (Charales, Coleochaete)	Q2	4, 5
5.	Sept. 8	M	Rhodophyta (Red Algae) (Discuss Beerling ch. 1 and 2)		9
6.	Sept. 10	W	Introduction to Chlorophyta (Green Algae)		4
Lab 4	Sept. 11	R	Introduction to Land Plants. Hepatophyta (Liverworts)	Q3	11
	Sept. 15	M	Streptophyta (Charales and Coleochaete) (Discuss Beerling ch. 3)		5
7.	Sept. 17	W	Origin of Land Plants. Hepatophyta (Liverworts)		11
Lab 5	Sept. 18	R	Anthocerotophyta (Hornworts) and Bryophyta (Mosses)	Q4	11, 12
8.	Sept. 22	M	Hepatophyta and Anthocerotophyta (Hornworts)		11
9.	Sept. 24	W	Anthocerotophyta and Bryophyta (Mosses) (Discuss Beerling Ch. 4)		11, 12
Lab 6	Sept. 25	R	Introduction to Vascular plants	Q5	13
10.	Sept. 29	M	Introduction to Vascular plants, fossils, evolution		13, 20 pp. 469-506

No.	Date	Day	Subject	Quiz	Bold 87 Chapters
11.	Oct. 1	W	Microphylophyta (Lycopods) (Discuss Beerling ch. 5)		14
Lab 7	Oct. 2	R	Microphylophyta (Lycopods)	Q6	14
12.	Oct. 6	M	Introduction to Monilophytes (Ferns) and fossils		20 pp. 506-523
13.	Oct. 8	W	Psilotales and Ophioglossales (Pteridophyta I)		16, 19
Lab 8	Oct. 9	R	Early-divergent Monilophytes	Q7	16, 19
	Oct. 10	F	Photo journal due Friday by 5pm		
14.	Oct. 13	M	ArthropHYta (Horsetails), Marattiales (Pteridophyta I)		15, 16
15.	Oct. 15	W	Pteridophyta II (early-divergent Leptosporangiate ferns) (Discuss Beerling ch. 6)		17
	Oct. 16	R	FALL BREAK – NO LAB		
16.	Oct. 20	M	Pteridophyta III (leptosporangiate ferns)		18, and p. 506 – 523
17.	Oct. 22	W	Ferns summary and introduction to Seed plants		21, 25
Lab 9	Oct. 23	R	Pteridophyta II and III and Ferns summary	Q8	16-18
18.	Oct. 27	M	End Monilophytes; Intro to Lignophytes		21
19.	Oct. 29	W	Intro seed plants: Ginkgophyta (Discuss Beerling ch. 7)		22
Lab 10	Oct. 30	R	Cycadophyta and Ginkgophyta	Q9	21, 22, 25
20.	Nov. 3	M	Coniferophyta		23
21.	Nov. 5	W	Gnetophyta and evolution of “Gymnosperms” (Discuss Beerling ch. 8)		24, 25
Lab 11	Nov. 6	R	Coniferophyta and Gnetophyta	Q10	23, 24
22.	Nov. 10	M	Anthophyta (“angiosperms”): origin and early evolution		Handout
23.	Nov.12	W	Anthophyta (vegetative)		26
Lab 12	Nov. 13	R	Anthophyta vegetative diversity	Q11	26
24.	Nov. 17	M	Anthophyta (vegetative continued...)		26
25.	Nov. 19	W	Anthophyta (fossils, origins) (Discuss Beerling ch. 9)		26

Lab 13	Nov. 20	R	Anthophyta reproductive diversity	Q12	27
No.	Date	Day	Subject	Quiz	Bold 87 Chapters
26.	Nov. 24	M	Anthophyta (reproductive)	Q13	27
27.	Nov. 26	W	Anthophyta fossil history (take home quiz)		26, 27
	Nov. 27	R	THANKSGIVING BREAK – NO CLASS		
28.	Dec. 1	M	Final lecture	Q13 due	27
	Dec. 3	W	Study day! No class		
	Dec. 5	F	Final papers due by 12 noon (our scheduled exam time)		

This schedule is tentative and subject to change!

*Aug 29 - Last day to drop without a "W"; Nov. 11 - Last Day to Drop with a "W" (WP/WF);
Dec. 2 - Last Day for a University Withdrawal*

REQUIRED READING:

The Emerald Planet: How Plants Changed Earth's History, 2007, by David Beerling. Oxford U. Press.

*Or, you can check out the eBook version for free from the library.

IN-CLASS TEXTBOOK (I WILL PROVIDE, OR YOU CAN BUY YOUR OWN COPY USED):

Morphology of Plants and Fungi, Fifth Edition, 1987, by Harold C. Bold, Constantine J. Alexopoulos, and Theodore Delevoryas, Harper & Row Publishers, New York.

*Or, you can buy your own versions online, used.

GRADING

	<u>Total</u>
Lab quizzes – 13 @ 10 points ea. – drop one = 120 points*	40 %
Mid-term photo presentation = 60 points	20 %
Final illustrated paper = 120 points	40 %

*Please note: there are no make-up quizzes.

Grade distribution

A > 92%	C > 72%
A- ≥ 90%	C- ≥ 70%
B+ > 87%	D+ > 67%
B > 82%	D ≥ 62%

B- \geq 80%

D- $>$ 58%

C+ $>$ 77%

F \leq 58%

Mid-term photo journal

Prepare a presentation with a **minimum of 6 labeled pictures** that you will take over the course of the first half of the semester. You will do this by taking photos under the microscope and then importing or pasting the photos into a blank Word file. The goal for the mid-term is to learn how to take quality photographs, how to label them in an informative way, and then to get them into a program where you can describe in words what is being shown. For the mid-term project, you are simply getting 6 photos into presentation format, with a short figure legend for each.

Hints about presentation will be given in class. For example, label clearly what you want the viewer to see and make sure to center the featured structure and make it fill the frame (ie. no extraneous material). The legend should have a title, and perhaps a line or two of description, especially if there are labels in the photo. Arrows can be used either with an arrowhead or just a simple line, coupled with a short label. Too much text on the slide can take away from the impact of the picture. Keep it simple!

Your presentation will be graded according to the quality of the photos and the effectiveness of the labeling and framing at calling attention to relevant and interesting aspects of morphology.

Final illustrated paper

For the final paper, you will review the book we have read (Beerling's, *The Emerald Planet*), illustrated with 5 or more photos of structures that you saw this semester. Choose structures that you think truly made a difference in the evolution of land plant diversity. Take as a question, for example, what are the structures that truly changed the world? David Beerling has taken a geologic and physiological viewpoint of plant history and its impact on the earth and other life, but that impact was mediated very specific structures. Maybe you even disagree with his thesis and think that other attributes of plants we studied were just as or more important. Review the book, but also make an argument for how and why certain structures that lie at the heart of his narrative functioned to bring about the changes. Use the figures to call the reader's attention to what you are talking about in the review. An extra careful paper would include a phylogeny as one of the photos, with the origins of the traits you discussed indicated on the tree.

We will finish reading the book on **November 19th**. All of the major groups of plants will have been introduced by mid-November, but remember, more than 90 % of land plants are flowering plants, or Angiosperms. So you might also want to think about why that should be so, as you write.

The final paper is due by noon on **December 5th**.

Academic integrity:

Academic dishonesty of any sort will not be tolerated. Plagiarism includes the copying of phrases, portions of sentences or the main ideas from ANYONE (including a classmate) on ANY work submitted for a grade (exams, assignments, quizzes, etc). Academic dishonesty also includes assisting other students on quizzes or exams.

You are expected to abide by The University of Tennessee honor statement in Biology and in all of your university activities as pledged in the honor code:

“An essential feature of the University of Tennessee, Knoxville, is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.”
(2014-2015 Undergraduate Catalog)

Depending on the offence, penalties for academic dishonesty range from a minimum of a zero for the assignment, to an F for the course, to the filing of formal academic dishonesty charges seeking dismissal from The University of Tennessee. These choices are at the discretion of the instructor, and can occur in either the lecture or the lab portion of the class.

You should be familiar with the requisites of academic honesty and what constitutes academic dishonesty as outlined in the UT Undergraduate Catalog (<http://catalog.utk.edu/>).

Other information

Disability Services: If you need course adaptations or accommodations because of a documented disability, please contact me privately to discuss your needs. If you have questions or concerns about disabilities or emergency information to share, please contact Disability Services: 2227 Dunford Hall; 974-6807; Email: ods@utk.edu; Website: <http://ods.utk.edu/>.

Academic Assistance:

Tutoring: The Division of Biology does not offer tutoring services. Contact the Student Success Center and the Academic Support Unit of The Office of Minority Student Affairs for information about tutoring opportunities.

- **Student Success Center:** The comprehensive source for information, services, and resources to assist your success at UT: <http://studentsuccess.utk.edu>
 - 812 Volunteer Boulevard, Greve Hall, room 324
 - 865 974-6641, Email: studentsuccess@utk.edu

Technical Assistance:

Blackboard, clickers, or general information technology assistance:

- Help Desk: 865 974 9900 (M – F, 8:00 – 5:00)
- OIT Walk-In Help Desk: Commons, 2nd floor Hodges Library
- Turning Technologies (clickers): 866 746 3015

Counseling Center: <http://counselingcenter.utk.edu/>

1800 Volunteer Boulevard

865 974-2196, Email: counselingcenter@utk.edu

OTHER RESOURCES FOR STUDENTS:

- One Stop: <http://onestop.utk.edu> (start here for any question you have)
- Undergraduate Catalogs: <http://catalog.utk.edu> (Listing of academic programs, courses, and policies)
- Hilltopics: <http://dos.utk.edu/hilltopics> (Campus and academic policies, procedures and standards of conduct)
- Course Timetable: https://bannersb.utk.edu/kbanpr/bwckschd.p_disp_dyn_sched (Schedule of classes)
- Academic Planning: <http://www.utk.edu/advising> (Advising resources, course requirements, and major guides)
- Library: <http://www.lib.utk.edu> (Access to library resources, databases, course reserves, and services)
- Career Services: <http://career.utk.edu> (Career counseling and resources; HIRE-A-VOL job search system)