BIOL 301 – PLANT TAXONOMY – revised syllabus, 9 February 2016

SPRING, 2016
M 1:30 – 5:30 PM, 207 Harborwalk West, MEET AT 1:30 AT THE LIBRARY PARKING LOT FOR FIELD TRIPS
WF 1:30 – 2:20 PM, 207 Harborwalk West

INSTRUCTOR:	Dr. Jean Everett
TEMP OFFICE:	303 Harborwalk East
OFFICE HOURS:	Wednesday and Friday, 11:30AM – 1:00PM; and by appointment.
OFFICE PHONE:	953-7843
MAILBOX:	Biology Department Temp Office, 231 New Science Center (SSMB)
EMAIL:	everettj@cofc.edu (If I don't respond, please try again or phone me.)
WEBPAGE:	http://everettj.people.cofc.edu/BIOL301.html - note this is NOT OAKS

REQUIRED TEXTS:

Judd, W.S., C.S. Campbell, E.A. Kellogg, P.F. Stevens and M.J. Donoghue. 2016. Plant Systematics: A Phylogenetic Approach, 4th Ed. Sinauer Associates.

Radford, A., H. Ahles, and C.R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. University of North Carolina Press, Chapel Hill.

Porcher, R.D. and D.A. Rayner. 2002. A Guide to the Wildflowers of South Carolina. University of South Carolina Press – OUT OF PRINT!!! Try to get a copy from the public library.

COURSE GOALS:

Students will:

- improve skills in critical, synthetic thinking and logical reasoning
- develop the ability to identify plants using a variety of mechanisms
- develop an integrated understanding of local vegetation patterns and the underlying ecosystem factors that control vegetation patterns

LEARNING OUTCOMES:

Students who successfully complete this course will demonstrate that they:

- have improved skills in critical, synthetic, scientific thinking and logical reasoning, are able to successfully read scientific papers and successfully write a topical review paper
- know the identifying characteristics of the most important plant families; regionally and globally
- know the vegetative and floral characteristics that enable identification of plants using a dichotomous key
- are comfortable using dichotomous keys
- are able to sight identify approximately 150 keystone plant species that are linked to different local ecosystems
- understand how ecological relationships contribute to plant species distributions in the region
- recognize the major plant communities found in this region
- understand basic soil characteristics as they influence plant species distributions
- understand the local geomorphological patterns that control surface soil and hydrological characteristics
- are able to integrate information on geomorphology, soils and hydrological patterns to predict and understand local plant communities

GRADE:

Midterm Exams (3) = 30%
Comprehensive
Final Exam = 10%
Flip Participation = 5%
Paper = 15%
Lab Quizzes = 25%
Lab Keying = 5%
Lab Final = 10%

GRADING SCALE				
	88-89% = B+	78-79% = C+	68-69%=D+	
93-100% = A	83-87% = B	73-77% = C	63-67%=D	
90-92% = A-	80-82% = B-	70-72% = C-	60-62%=D-	<60%=F

The midterm and final exams will include technical definitions by term and from photos or diagrams, family identifications from written descriptions and photos, and short answer questions about material covered in both lecture and lab. All electronic devices will be surrendered for the duration of each exam.

Flip Participation involves your preparation and contributions to the reverse lectures, where you will learn the material on some families on your own, filling out the worksheets linked on our web site. We will then discuss the families and any questions in class. See families marked with an * on the schedule for reverse lecture preparation. I've had mixed evaluations of this process, so if, as a class, we prefer straight lecture, we may discontinue the flipped classroom project.

The paper will be 5-7 pages (not including Literature Citation section), double spaced, typed in a readable font (eg: Times New Roman 12, Arial 10) on any topic of your choice that is related to this course. You must cite at least 15 modern primary literature papers. Use Web of Science in the library database section of MyCharleston to search for primary literature papers. Use the librarians for help researching your topic. Please use standard scientific citation format (though not numbered). You must also submit your paper to a plagiarism checking site, writecheck.com, and submit the receipt along with your paper. The site charges around $8 to check a paper. You must explain your similarity score. See schedule for one-page outline and paper due dates.

Lab quizzes will be conducted both in the field and in the lab. Each quiz will include 10 specimens to be identified by family, genus and species. SPELLING COUNTS. Quiz dates are listed on the lab schedule. I will drop your lowest quiz score, if it is not a zero from an unexcused absence. If I have credible evidence that you have cheated on a quiz, your score for that quiz will be zero.

Lab keying exercises will be conducted as listed on the lab syllabus. Each of you will independently key 3 to 5 fresh specimens to family, genus and species. Be certain to bring your *Manual to the Vascular Flora of the Carolinas* to each keying exercise.

The lab final will be conducted in the lab, and will include 100 specimens (fresh or photographed) to be identified by family, genus and species. Students with a perfect quiz average, including any extra credit, may be exempted from the lab final.

PLEASE NOTE: No makeups will be given for exams without prior notice and a documented absence memo from the Absence Memo Office at 67 George Street. In an emergency, contact me **as soon as possible** for makeup arrangements. Also, no student will be permitted to begin an exam if any student has already completed the exam. Lab quizzes and the lab final **CANNOT** be made up.

ATTENDANCE: Your final grade will be dropped by 5% if you miss more than 3 classes, and by 10% if you miss 5 or more classes. Tardiness will count as an absence. If you have a documented absence memo from the Absence Memo Office at 67 George Street, you will be excused from that absence.

ACADEMIC INTEGRITY: I expect each of you to work independently unless specifically instructed otherwise, and to adhere to the College of Charleston Honor System as described in the Student Handbook.

SPECIAL NEEDS: If you will need any special accommodations to complete the requirements for this course, please contact me as soon as possible.

ALLY PROGRAMS: I am a Safe Zone Ally and a Green Zone Ally, and happy to assist.

TENTATIVE LECTURE and LAB SCHEDULE – please note: this revised syllabus reflects the new edition of Judd, et al, and also note a mistake I made on the schedule. We covered Classification and Nomenclature in our first lab, but we are back on track.

		All handouts on web. An * indicates a reverse lecture.	
DATE		**TOPIC**	**CHAPTER**
8	Jan.	Introduction	1
11	Jan.	How to really look at plants	1-4, App. 1
	Lab	How to really look at plants, continued	App. 2, handouts
13	Jan.	Classification and Nomenclature – **last day to drop/add**	
15		Intro to families; *Lycopodicaceae*, Ferns, *Equisetaceae*	5-7
18	Jan.	MLK Holiday	
	Lab	MLK Holiday	
20	Jan.	*Pinaceae*, *Cupressaceae*; Intro to floral formulas	7-8
22	Jan.	Maritime Ecosystems	P&R
25	Jan.	No lecture (4 hour field trip)	.
	Lab	Field trip to maritime ecosystems at Seabrook	P&R
27	Jan.	Ecological factors that influence plant species distributions	
29	Jan.	*Magnoliaceae*, *Ranunculaceae*, **Caryophyllaceae*	See note

NOTE: For all angiosperm families, read the introduction to Chapter 8, the information on each relevant clade, class, subclass, and order, and then the information on each listed family. Use the Table of Contents or the quick reference guide inside the front cover to find page numbers. Be sure to note updates from the 3rd edition – these may not be reflected on my PowerPoint slides – use the 4th edition material!

DATE		TOPIC	CHAPTER
1	Feb.	No lecture (4 hour field trip)	
	Lab	Field trip Sewee Shell Mounds	P&R
3	Feb.	*Cactaceae, Euphorbiaceae, *Hypericaceae*	
5	Feb.	**EXAM 1**	
8	Feb.	No lecture – learning how to key	
	Lab	Keying exercise	
10	Feb.	Geomorphology	handout
12	Feb.	Geomorphology, continued	
15	Feb.	No lecture (4 hour field trip)	
	Lab	Field trip to longleaf pine and pocosin ecosystems	P&R
17	Feb.	*Fabaceae*	
19	Feb.	Longleaf Pine Ecosystems	
22	Feb.	No lecture (4 hour field trip)	
	Lab	Field trip to longleaf pine ecosystems	
24	Feb.	*Rosaceae*	
26	Feb.	**Fagaceae, *Betulaceae, *Juglandaceae*	
29	Feb.	No lecture – keying **– Outlines DUE**	
	Lab	Keying exercise	
2	Mar.	**Ulmaceae, *Cucurbitaceae*	
4	Mar	**EXAM 2 – be aware – this is the Friday before break**	
7-11	March	**Spring Break**	
14	March	No lecture (4 hour field trip)	
	Lab	Field trip to Caw Caw Nature & History Interpretive Center	
16	March	**Onagraceae, *Brassicaceae, *Malvaceae*	
18	March	Beech Ecosystems **– last day to withdraw**	P&R
21	March	No lecture (4 hour field trip)	
	Lab	Field trip to beech ecosystems	P&R
23	March	*Ericaceae, *Solanaceae*	
25	March	*Lamiaceae, *Scrophulariaceae*	
28	March	No lecture – keying	
	Lab	Keying exercise	
30	March	*Apocynaceae, *Apiaceae*	
1	April	Feeding habits and pollination mechanisms of carnivorous plants (*Sarraceniaceae, Lentibulariaceae, Droseraceae*)	+P&R

DATE		TOPIC	CHAPTER
4	April	No lecture (4 hour field trip)	
	Lab	Field trip to swamp forest	P&R
6	April	*Asteraceae*	
8	April	**EXAM 3**	
11	April	No lecture (4 hour field trip)	
	Lab	Field Review and Longleaf Pine Savanna Ecosystem	P&R
13	April	Introduction to Liliopsida; **Liliaceae*, **Iridaceae*	
15	April	**Arecaceae*, **Araceae*, **Lemnaceae***; **Papers DUE**	
18	April	**Final Lab Exam** (~1:30 – 5:30 pm)	
	Lab		
20	April	*Orchidaceae*	
21	April	*Poaceae, *Cyperacaeae, *Juncaceae*	Handout
	Lab	Review; mandatory in-class evaluations	
29	**April**	**COMPREHENSIVE FINAL EXAM, 12 – 3 PM**	

TENTATIVE LAB SCHEDULE

DATE		LAB TOPIC
11	Jan.	How to really look at plants (1:30 – 5:30 pm
18	Jan.	MLK Holiday
25	Jan.	Field trip to maritime ecosystems at Seabrook (1:30 – 5 pm)
1	Feb.	Field trip to Sewee Shell Mounds (1:30 – 5 pm) **Field Quiz**
8	Feb.	Keying exercise (1:30 – 5 pm) **Lab Quiz**
15	Feb	Field trip to longleaf pine and pocosin ecosystems (1:30 – 5 pm) **Field Quiz**
22	Feb.	Field trip to longleaf pine ecosystems (1:30 – 5 pm) **Field Quiz**
29	Feb.	Keying Exercise (1:30 – 5 pm) **Lab Quiz**
7	March	Spring Break!!
14	March	Field trip to Caw Caw Interpretive Center (1:30 – 5 pm) **Field Quiz**
21	March	Field trip to beech woods (1:30 – 5 pm) **Field Quiz**
28	March	Keying exercise (1:30 – 5 pm) **Lab Quiz**
4	April	Field trip to swamp forest (1:30 – 5 pm) **Field Quiz**
11	April	Field Review and longleaf savanna search (1:30 – 5 pm) **Field Quiz**
18	April	**Final Lab Exam** (~1:30 – 5 pm)
21	April	Review; mandatory in-class evaluations

INDOOR LABS: Be sure to bring your Manual to all the keying exercises. You may also want to bring your lecture text on those days. If the weather looks bad on a field trip day, bring your Manual, as we may work indoors and reschedule the field trip. See our website for weather links.

FIELD TRIPS: Dress to get wet, dirty, wet, buggy, wet, scratched, wet, muddy, wet, wet and wet. BE PREPARED! I strongly recommend that you wear long sleeves, long pants, and old shoes or rubber boots. **YOU MUST WEAR CLOSED SHOES** (no Teva's, Crocs or other sandals). If you do not wear closed shoes to field labs, you will be dismissed from that lab, as an unexcused absence. Consider a hat and/or sunscreen, and you may want bug spray (**no** bug spraying in or near the van!). You should bring plenty of water and perhaps a snack. You might want to consider a head net for gnats and mosquitoes.

Have some way to record information on the species and communities that we learn (clipboard, notebook, cards, tape recorder, camera…). I will permit you to collect a small sample of most of the species we cover. You can bring clippers and a notebook or magazine to press these specimens in the field. You can also label samples with a marking pen or masking tape, keep them fresh in a plastic bag, and press them later. Most plant parts will dry within a week if pressed between several sheets of newsprint, held down with a stack of heavy books or some such. See Appendix 2 in your text for more information.

You will find complete species descriptions in the Manual to the Vascular Flora of the Carolinas, and a lot of ecosystem information in Porcher and Rayner.

I will post our species lists on the web site, including a list linking images, generally by late Monday evening after each field trip.

Please note: You **must** wear your seatbelt at all times when riding in the van, and no one will sit in the back seats if there are free seats to the front. These are safety issues and non-negotiable. There will be **no** smoking and **no** cell phone or other electronic device use (other than imaging) on our field trips. If you smoke, please do not smoke right before getting in the van. These restrictions are also non-negotiable.

If you are allergic to bee stings or other venoms, please let me know immediately. You must carry medication. If you are diabetic, please set up a buddy system with a classmate.

Some field trips may run late due to unpredictable traffic. Please schedule accordingly, and please let me know as soon as possible if late field trips are going to be a problem for you.