

**BSC 430/L: Aquatic and Marsh Plants
University of Southern Mississippi**

Fall 2009, Tuesdays 1:00-5:05 P.M. and Thursdays 1:00–3:40 P.M.

Instructor

Dr. Mac H. Alford
Johnson Science Tower 308
Campus Box #5018
Telephone: 601-266-6531
E-mail: mac.alford@usm.edu
Website: www.usm.edu/biology/faculty/Faculty_Profile_Mac_Alford.htm

Office Hours

- (a) 10–11 A.M.
- (b) By appointment.

Course Description

Lecture 2 hrs. Lab 2 hrs. Collection, identification, and ecology of plants of fresh and brackish water.
Prerequisite: BSC 226 (General Botany).

Course Overview

This course trains students to identify aquatic and wetland plants, accurately describe the kinds of communities in which they grow, and understand morphological adaptations and life history strategies that are common among aquatic and wetland plants. Wetland delineation and associated legal ramifications will also be introduced.

Course Objectives

Students will develop and demonstrate:

- Ability to accurately identify aquatic and wetland plants by learning a substantial number of species common to the southeastern United States by sight and by learning to use traditional taxonomic keys, interactive electronic keys, reference guides, and herbarium collections to identify unknowns,
- Ability to recognize and describe aquatic and wetland plant communities,
- Knowledge of the morphological adaptations of aquatic and wetland plants to their environments,
- Knowledge of common life history strategies of aquatic and wetland plants,
- Knowledge of invasive aquatic and wetland plants and the underlying reasons for their spread, and
- Awareness of the roles and uses of aquatic and wetland plants in natural and anthropogenic settings.

Required Texts

Godfrey, Robert K. and Jean W. Wooten. 1979. *Aquatic and Wetland Plants of Southeastern United States: Monocotyledons*. Athens, GA: University of Georgia Press.

Godfrey, Robert K. and Jean W. Wooten. 1981. *Aquatic and Wetland Plants of Southeastern United States: Dicotyledons*. Athens, GA: University of Georgia Press.

Other Useful Texts (optional)

Cronk, J. K. and M. S. Fennessey. 2001. *Wetland Plants: Biology and Ecology*. Boca Raton, FL: CRC Press.

Eleuterius, L. N. 1980. *An Illustrated Guide to Tidal Marsh Plants of Mississippi and Adjacent States*.
Mississippi–Alabama Sea Grant Consortium, Publication No. MASGP–77–039.

Lyon, J. G. 1993. *Practical Handbook for Wetland Identification and Delineation*. Boca Raton, FL: CRC Press.

Mitsch, W. J. and J. G. Gosselink. 2007. *Wetlands*, 4th ed. Wiley.

Tiner, R. W. 1999. *Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping*. Boca Raton, FL: CRC Press.

Other Useful Equipment (optional)

10× or 14× hand lens (=loupe, magnifier), \$20-50. Several online dealers include:

<http://www.kooters.com/handlens.html>

<http://www.ascscientific.com/lens.html>

<http://www.compleatnaturalist.com/default.htm>

<http://www.forestry-suppliers.com> (search for pocket magnifiers)

A pocket-size notebook. Use discretion here. Something is needed that you will feel comfortable carrying with you and taking notes in the field. Some people prefer small clipboards; others prefer reporter-style steno notebooks. Just make sure it can fit in a pocket or pouch, or you can attach it to a carabineer and clip it onto your belt loops. If you bring a larger notebook, you will probably be frustrated as one hand is always occupied or you have to put it in and take it out of your backpack incessantly.

Field Trips

Because field trips involve wetlands, plan to get dirty and wet. Shorts, sandals, and flip-flops are discouraged. Long pants with a snug hem (no loose bell-bottoms) and long sleeve shirts will help minimize insect bites, sun exposure, and cuts / scratches. Typical khaki pants are much better than blue jeans because they are lighter, cooler, and dry more easily if (when!) you get wet, but blue jeans are thicker protection against briars and other prickly plants. You should wear a pair of shoes that can get wet. I prefer good old rubber boots, but some people get blistered feet from walking in them for a long period. Don't forget a water bottle if you are easily dehydrated. We won't always have an opportunity to stop and pick up a cola and tater logs.

Class Procedures and Requirements

Attendance is critical. This course is designed as a hands-on approach to aquatic and wetland plant identification and communities, and only attendance for field trips and extensive practice in the lab will provide the student adequate time to master these skills. Some plants or plant communities may be encountered only once, and the student is responsible for learning these. The indicated chapter(s) and required articles from the literature should be read before class, which will prepare you for the material presented in lecture or lab. The exams may cover any of this material, plus applications learned in lab. Be prompt to class. We must leave on time for field trips to maximize field experience. Cellular phones, pagers, and other electronic devices should not disrupt class. Laptop computers may be used, but be aware of and eliminate noises or habits that may distract other students.

Wetland Delineation Report

Students will prepare a wetland delineation report on a site that we will visit during the semester. More details will be supplied later.

Plant Collection

A collection of 30 pressed aquatic or wetland plants is required. Each plant must have at least some reproductive structures (flowers, fruits, cones, sori, even flower buds), must be correctly identified to family, genus, and species, must be aesthetically prepared and appropriately sized for mounting as a herbarium specimen, and must include a label on archival paper (available from the professor) with the appropriate information. Details about pressing and preparing the label are provided in a separate, more thorough handout. The project is your opportunity to *practice* the material learned in class, lab, and field trip and to learn additional plants.

Evaluation Criteria (lecture and lab will be considered together for one final grade applied to both)

Exam 1	15%	(75 points)
Lab Practical 1	15%	(75 points)
Lab Practical 2	15%	(75 points)
Final Exam / Practical	15%	(75 points)
Wetland Delineation	10%	(50 points)
Plant Collection	30%	(150 points)

Grading Scale

90–100%	A	(450–500 points)
80–89%	B	(400–449 points)
70–79%	C	(350–399 points)
60–69%	D	(300–349 points)
0–59%	F	(0–299 points)

Make-Up Exams and Late Projects

Make-up exams are given **only** if written corroboration of a serious research conflict or disabling condition or situation is provided (doctor's note, advisor's note, parental note [with phone number] about funeral, police report). Contact professor immediately about re-scheduling. Re-scheduling after 48 hours is not possible.

Plant collections cannot be turned in late.

Academic Honesty

When cheating is discovered, the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student will be reported to the Dean of Students. In addition to being a violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. Students on disciplinary suspension may not enroll in any courses offered by the University of Southern Mississippi.

ADA Policy

If a student has a disability that qualifies under the Americans with Disabilities Act and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by the ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies. Mailing address: 118 College Drive #8586, Hattiesburg, MS 39406-0001; Telephone: 601-266-5024; TTY: 1-800-582-2233; Fax: 601-266-6035; e-mail: suzanne.hebert@usm.edu.

Class Schedule*

Date	Topic	Reading Assignment
August 20	Course Logistics Introduction to Aquatic and Wetland Plants Classification and Nomenclature	
25	no lab	
27	Collecting Aquatic and Wetland Plants Tour of the Herbarium	G&W–D, pp. 1–5, handout
28	Last day to register for class	
September 1	Review of Botany Vegetative and Reproductive Morphology	handouts
3	Taxonomic Keys	
8	Field Trip	
10	Wetland Classifications, Maps, and Sampling Methods	FWS handout
15	Field Trip	
17	FIRST EXAM (1:00–2:15 P.M.)	
	Large Hydrophytes (after exam)	
22	Field Trip	
24	Small Hydrophytes	
29	FIRST LAB PRACTICAL (Keying and Identification by Sight)	
30	Last day to drop course	
October 1	Compositae / Asteraceae	Handout First part of collection due (8 specimens with labels)
(Saturday) 3	Field Trip to Gulf Coast (NOTE: Jewish Sukkot, “Feast of Tabernacles”)	8:00 A.M. – 6:00 P.M.
6	Field Trip	
8	Fall Break no lecture or lab	
13	Field Trip	
15	Juncaceae and Cyperaceae – part 1	handout

20	Field Trip	
22	Juncaceae and Cyperaceae – part 2	
27	Field Trip	
29	Gramineae / Poaceae – part 1	handout
November 1	Daylight Saving Time ends. Set clocks back one hour.	
3	Field Trip	
5	Gramineae / Poaceae – part 2	
10	SECOND LAB PRACTICAL (Keying and Identification by Sight)	
12	Wetland Delineation	COE handout
17	Field Trip: Wetland Delineation Site	
19	Soils and Hydrology	TBA
24	Collections and Keying**	
26	Thanksgiving Holiday no lecture or lab	
December 1	Collections and Keying	
3	Invasive Species, Dispersal, and Geographical Relationships	handouts Plant Collections due 3:40 P.M.
Thursday, December 10 1:30 – 4:00 P.M.	Final Exam Comprehensive (Lab and Lecture)	

*Schedule may be revised if necessary. Students will be notified if this is the case.

** Optional.