

MWF 8:00 – 8:50AM, ROOM 223A ETHEREDGE

Dr. Gary N. Ervin, Instructor

e-mail: gervin@biology.msstate.edu

Phone: 325-1203

internet: <http://www.msstate.edu/courses/ge14/>

Office: A212 HPCC (Research Park)

Office Hours: W 9:30 to noon, and by appointment

Office Hours: Room 11, Harned Biology

INSTRUCTIONAL MATERIALS

Text: Cronk, J. K. and M. S. Fennessey. 2001. Wetland Plants: Biology and Ecology.

Lewis Publishers, Boca Raton, FL.

Other primary and reference literature as needed - - note also reference texts on reserve in the MSU library.

COURSE DESCRIPTION

This will be an advanced undergraduate/graduate course focusing on the biology of aquatic and wetland plants. Topics to be covered include growth forms, evolutionary relationships, habitat, and growth and reproductive adaptations of hydrophytic vegetation. The course also includes discussion of interactions of hydrophytes with one another and their surroundings, the role of plants in the functioning of aquatic and wetland ecosystems, and other timely topics related to hydrophytes and their environments.

COURSE OBJECTIVES

Upon completion of this course, students should have an understanding of:

1. General taxonomy and identification of aquatic and wetland plants,
2. Adaptations hydrophytic plants have evolved for dealing with various stresses and challenges faced in the aquatic environment,
3. Interactions among aquatic and wetland plants and between these plants and their environments,
4. Contemporary issues related to hydrophytes and the aquatic and/or wetland environments (such as the use of plants as environmental indicators, role of plants in ecosystem function, and the ecological hazards imposed by invasive species and habitat loss & fragmentation).

METHODS OF INSTRUCTION

This course will be taught primarily through lectures but discussion will be encouraged strongly. We periodically will read pertinent review material from scientific journals, with time set aside for in-depth discussion of those papers. Participation in classroom discussions will make up part of the final grade, as described on the following page.

EXAMS

Two in-class exams will be given during the semester, with a comprehensive final exam at the termination of the course. No make-up exams will be given. ***In extreme cases only***, with written documentation of the reason the exam was missed, the percentage score from the Final Exam may be used to replace one missed exam. In the event that an exam must be postponed due to cancellation of a class meeting, that exam will be re-scheduled for the next lecture period (unless announced otherwise).

GRADUATE STUDENTS

In addition to the other required assignments (*see next page*), each student receiving graduate credit for this course will be required to present at least two mini-lectures during the semester. These presentations will serve to introduce topics covered during the lecture sessions and will consist of approximately a 15 minute general overview of the selected topics. A list of 4-6 topics of interest will be submitted to the instructor, and two of these will be assigned for delivery during the appropriate class periods.

ACADEMIC HONOR CODE (see also final page of syllabus**)

Cheating, plagiarism, or any other form of academic dishonesty will be dealt with according to the new Mississippi State University Honor Code policy as described at: <http://students.msstate.edu/honorcode/> (as of 04 August 2009).

STUDENTS WITH DISABILITIES

The University understands that each individual has a unique set of abilities and limitations, and the institution's intent is to integrate every student as completely as possible into regular student life activities. Accommodations will be made, as necessary, in cooperation with Student Support Services to fulfill this intent; however, it is the student's responsibility to make his or her needs known.

LATE ASSIGNMENTS

Assignments may be submitted late only with a valid *reason* (medical, death in family, etc.). If you think you may not be able to turn in an assignment or take an exam at the time it is due, try to make earlier arrangements with the instructor. Late assignments, except when excused by the instructor will lose 10% of the assignment value *per calendar day* that they are late – no exceptions. It is the student's responsibility to know when assignments are due. If a due date is changed, such will be announced repeatedly to ensure students are aware of the revised date.

GRADING

Two one-hour exams (following "Environmental Factors" and "Biotic Factors" sections), periodic short essays, assigned readings, one writing assignment, a cumulative final exam, and laboratory exercises will be required during this course. Grades will be calculated and assigned as follows:

<u>Grade Composition</u> undergrad% (grad%)	<u>Final Grade Determination</u>
Exams (two) – 15% each (12.5% each)	A ≥ 90%
Writing Assignment – 20% (20%)	B 80-89%
In-class participation – 5% (10%)	C 70-79%
(includes classroom discussions, short essays, and graduate student mini-lectures)	D 60-69%
Final Exam – 20% (20%)	F ≤ 60%
Laboratory – 25% (25%)	(all rounded to zero decimal places)

****Class attendance is important****

After three absences, 0.5 point will be deducted *from the final class average* for each unexcused absence.

WRITING ASSIGNMENT

One major writing assignment is required in this course. It is expected that the paper be a relatively complete treatment of the chosen topic and, thus, papers of less than 10 or so pages would probably not receive high ratings (unless they are unusually succinct *and* comprehensive). Papers should be printed in 10 to 12-point font; double-spacing is fine, but keep in mind that papers will be evaluated on the *quality* of the writing – not satisfaction of the 10-page suggestion above. The paper should be submitted no later than 5PM Tuesday November 24, 2009 (beginning of the Thanksgiving holiday).

The assignment is for each student to choose a section of the text (Cronk and Fennessy 2001) and provide a critique or revision, including research published since the text went to press. For example, one might select section IV (Competition and Community Dynamics) from Chapter 7 (Community Dynamics in Wetlands). The latest reference from this section was published in 2000, so one might (1) search for literature published in 2000 and later dealing with interactions among aquatic plants, (2) search for older papers that may or may not have been discussed in the text, (3) *read those papers*, and (4) review/summarize the newer information, relative to Cronk and Fennessy's treatment and/or provide a critique on sections believed to be flawed or incomplete based on the literature review.

Along with their papers, **graduate students** will be required to include an annotated bibliography, in which they provide one to a few sentences on the quality and importance of each source referenced. An example will be provided if there are uncertainties as to what this entails.

Your paper should follow this general format (undergrad points/grad):

Abstract page (10pts/10)

- title, student's name, and date submitted
- a brief but thorough summary of the paper
- ideally, ~150-250 words range (300 maximum)

Introduction (10 pts/10)

- purpose/reason for choosing the topic – professionally done
- brief description of the section chosen and specific objectives of your review

Outlined body of the paper (60 pts/45)

- provide the “meat” of the paper here:
 - Have things changed since 2000? How? How much?
 - Were the authors on the mark in their conclusions? Did they omit any important information or misinterpret papers they included?
 - Are there new findings that would have added sections to their work if those data had been available before 2000?
 - Do any of the papers cited in the text represent repeated efforts of previous researchers? (That is, is credit for ideas incorrectly attributed to more recent authors?)
- each section of the paper should have a brief, descriptive heading, as in the textbook

Conclusion/Discussion (10 pts/10)

- summarize the points you addressed and convince the reader (Dr. Ervin) that your work is accurate and important

References (10 pts/25)

- you must correctly cite all literature consulted in preparation of your paper
- be sure all literature used is cited and all literature cited is used
- use only sources that are pertinent to the topic, a few directly relevant articles are better than lots of tangentially-related ones

Figures and tables may be embedded within the text (preferred) or placed at the end of the paper. If the figures are not the original work of the student, proper acknowledgement should be given to the original source (in figure caption state “From Author DATE” – e.g. “From Wetzel 1990”).

I will be evaluating your paper on the following criteria:

Criteria listed above, plus...

Accuracy

- Did you accurately interpret the authors' original work?
- Did you provide accurate assessments of the literature you surveyed?

Completeness

- Did you include the information you said you were going to include?
- Did you miss key publications, recent or otherwise?

Grammar

use of complete sentences, proper punctuation, subject-verb agreement, correct spelling, etc.

Strength of argument

- Did you provide thorough and sufficient evidence for your arguments/conclusions?
- Did you make a logical argument based on the information you provided?

TENTATIVE Lecture Outline

<u>Weeks</u>	<u>Topic</u>	<u>Text Reference</u>
1-2	Introduction	
17 Aug to 28 Aug	Definitions and origins Hydrophyte growth forms Community types & distribution	pp. 1-6, 17-20 pp. 7-16 pp. 16, 29, 34-60
3-5	Environmental Factors & Adaptations	
31 Aug to 18 Sep	Hydrology Oxygen Carbon Dioxide Light Mineral Nutrients	pp. 61-73 pp. 74-78, 87-109 pp. 83, 129-131 pp. 81-82, 127-128 pp. 74-79, 114-127
21 SEP (MON)	EXAM ONE	
6-8	Reproduction and vegetative propagation	
23 Sep to 07 Oct	Sexual reproduction Vegetative (asexual) propagation	pp. 147-176 pp. 177-190
8-12	Biotic Factors	
09 Oct to 06 Nov	Productivity Herbivory Community dynamics	pp. 191-236 pp. 134-135 pp. 237-278
09 NOV (MON)	EXAM TWO	
13-15	Important issues in aquatic and wetland ecosystems	
11 Nov to 30 Nov	Invasive species Plants as biological indicators Plants in restored ecosystems	pp. 279-325 pp. 363-388 pp. 326-362
FINAL EXAM	Friday, December 4th at 8-11AM	

Dates to remember:

Sep 07	NO CLASS – Labor Day Holiday
Oct 5-6	NO CLASS – FALL BREAK
Nov 25-29	NO CLASS – THANKSGIVING BREAK
Nov 30	LAST DAY OF CLASS

LABORATORY

Laboratory meets on **Wednesday from 1:00 to 4:50 PM**, on the dates indicated below. Labs will begin during the second week of classes (Wednesday, August 26th) and we will meet outside Room 11 of Harned Biology, except for September 2, 9, & 16 labs.

Assignments - Each laboratory will require submission of a report or other summary pertaining to data collected or observations made. The specific criteria for these assignments will be provided during that week's laboratory session (or sooner). The laboratory assignments in total represent 25% of the course grade.

- ⌞ **Wetland plant collection trip (August 26)**
 - ⌚ Field trip to Trim Cane WMA to collect plant specimens for use in subsequent three weeks
- ⌞ **Wetland plant identification labs (September 2, 9, 16) 2.5% each lab**
 - ⌚ Meet in room 209 of Harned Biology – MS State University Herbarium
 - ⌚ Identification of specimens collected at Trim Cane WMA
 - ⌚ Particular emphasis on Grasses (2nd), Sedges (9th), and Rushes (16th), along with any other important herbaceous species on the 16th
- ⌞ **Greentree Reservoir Ecology (September 23) 2.5% *****
 - ⌚ Field trip to Noxubee NWR to see research on GTR ecology
- ⌞ **Aquatic weed management (September 30) 2.5% *****
 - ⌚ Field trip to North and South Farm facilities to see MSU Weed Science aquatic vegetation management research
- ⌞ **Managed wetlands (October 7) 2.5% *****
 - ⌚ Field trip to Noxubee NWR for an overview of herbaceous and forested wetlands managed for wildlife habitat
- ⌞ **Wastewater treatment facility (October 14) 2.5% *****
 - ⌚ Field trip to area wastewater treatment facilities to observe similarities between wetland plant and artificial (human) cleaning of surface or waste water

There will be one Saturday field trip during the semester. There will be exam questions and a laboratory assignment pertaining to observations made and data collected during the trip (that also are related to topics covered in lectures). This trip will involve surveys for aquatic plants on a nearby lake and adjacent wetland areas.

- ⌞ **Flora survey field trip (September 05, 12, or 19) 7.5%**
 - ⌚ *All-day Saturday field trip* to Noxubee NWR
 - ⌚ Part I: Collect data on distribution of aquatic and wetland plants on Bluff Lake, followed by identification of the plants, to be performed at the nature center area
 - ⌚ Part II: Visit other Noxubee wetland areas for plant ID, especially woody species

***** Tentative days/times for these labs. A final lab syllabus will be provided once all are confirmed.**

Texts requested for reserve for AQUATIC BOTANY

1. Hutchinson, G. Evelyn 1903-[c1993]
A treatise on limnology, Volume 3 (Limnological Botany)
New York, Wiley [1957-
Call Number: QH98 .H82 V.2
2. Wetzel, Robert G.
Limnology : lake and river ecosystems
San Diego : Academic Press, c2001.
Call Number: QH96 .W47 2001
3. Sculthorpe, C. D.
The biology of aquatic vascular plants
London, Edward Arnold, 1967.
Call Number: QK 930 .S35
4. Cronk, J. K. and M. Siobhan Fennessy
Wetland plants : biology and ecology
Boca Raton, Fla. : Lewis Publishers, c2001.
Call Number: QK938.M3 C76 2001
5. Mitsch, William J. and James G. Gosselink
Wetlands
New York : Van Nostrand Reinhold, c1993.
Call Number: QH104 .M57 1993
6. Arber, Agnes Robertson, 1879-1960 (with a pref. by William T. Stearn)
Water plants; a study of aquatic angiosperms
Weinheim, J. Cramer; New York, Hafner Pub. Co., 1963.
Call Number: QK103 .A7 1963
7. Haslam, S. M. 1934- (illustrated by P.A. Wolseley)
River plants : the macrophytic vegetation of watercourses
Cambridge : Cambridge University Press, 1978.
Call Number: QK 932.7 .H37
8. Haslam, S. M. 1934-
Understanding wetlands : fen, bog, and marsh
London ; New York : Taylor & Francis, 2003.
Call Number: QH87.3 .H38 2003
9. Moore, Peter D. and D. J. Bellamy
Peatlands
New York, Springer-Verlag [1974]
Call Number: GB621 .M66 1974B
10. Batzer, Darold P.
Ecology of freshwater and estuarine wetlands
University of California Press
Call Number: QH541.5 .M3 E266 2006

ACADEMIC HONOR CODE

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MSU Libraries provide an online guide (<http://library.msstate.edu/content/templates/?a=692&z=126>) to help in understanding how to appropriately cite other peoples' work – and specifically on how to avoid plagiarism. You should familiarize yourself with that information before signing below.

I. DEFINITION OF ACADEMIC MISCONDUCT

Academic misconduct is any activity which may compromise the academic integrity of the University.

Academic misconduct includes, but is not limited to, deceptive acts such as the following:

- A. Using unauthorized materials (crib notes, books, etc.) as an aid during an examination.
- B. Looking at or using information from another person's examination, report, or assignment.
- C. Providing assistance to, or receiving assistance from, another person in any manner prohibited by the instructor.
- D. Possessing or providing an examination or assignment, or any part thereof, at any time or in any manner not authorized by the instructor.
- E. Taking a quiz, examination, or similar evaluated assignment for another person; or utilizing another person to take a quiz, examination, or similar assignment in place of oneself.
- F. Submitting any course materials or activities not the student's own, allowing such a submission to be made for oneself, or making such a submission for another.
- G. Using the ideas, organization, or words of another from a book, article, paper, computer file, or other source in any assignment without giving proper credit following accepted citation rules (plagiarism).
- H. Altering, stealing, and/or falsifying research data used in research reports, theses, or dissertations.

II. SANCTIONS AGAINST ACADEMIC MISCONDUCT

When it is determined by the Honor Code Council or a faculty member that a student has violated the MSU Honor Code, *the normal sanction assigned for a first offense will be an "XF" for the course*, probation, and a requirement to complete the Academic Integrity Intervention Program. The Honor Code Council or faculty member will only impose a lesser grade sanction (a lowered course grade rather than an F) in exceptional circumstances, such as a case where the assignment involved is a minor part of the final course grade. The dishonesty notation ("X"), probation and the intervention program will be required with all grade sanctions. If a faculty member wishes to impose a more severe penalty than an XF, then the case must be referred to the Honor Code Council. The Honor Code Council has the authority to remove a student from the University, even for first offenses. Decisions by the Honor Code Council Hearing Panels are binding on all parties.

By signing below, the student acknowledges that s/he has read and understands the University policy on Academic Misconduct. Further, the student acknowledges that any act that may be interpreted as misconduct will be subject to action in accordance with the policy. The act does not necessarily have to be a willful and deliberate violation of the University policy in order for disciplinary actions to be initiated. Thus, it is in the student's best interest to act in such a manner as to avoid creating or becoming part of a situation in which the appearance of misconduct is evident.

Finally, the student understands that it is his/her responsibility to inquire with the instructor or his representatives (e.g., teaching assistants) if a situation arises which could be interpreted by the instructor or others as a violation of the policy on misconduct.

Student name, printed

Student number (*NOT* SSN)

Student signature

Date

****NO GRADES WILL BE ASSIGNED IN THIS COURSE FOR STUDENTS WHO FAIL TO SIGN AND RETURN THIS FORM TO THE INSTRUCTOR****