

NRES 965 MANAGED AQUATIC ECOSYSTEMS
Spring 2011

INSTRUCTORS:	Dr. Mark A. Pegg 402 Hardin Hall 472-6824 mpegg2@unl.edu	Dr. Kevin L. Pope 424 Hardin Hall 472-7028 kpope2@unl.edu
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OFFICE HOURS: Open-door or by appointment

CLASS TIME and LOCATION: Tuesday & Thursday, HARH 209 (08:45-10:15)

COURSE DESCRIPTION: Anthropogenic disturbances are commonplace in inland waters of developed and developing countries. This course is designed to increase students' understanding of ecological processes that occur in regulated river basins and associated problems or opportunities that arise with fishery management. The focus is primarily on fishes and understanding how structure, process and function of aquatic systems are influenced by human activities. However, other biota can and likely will be discussed. Topics covered include river continuum concept, Thorton's reservoir continuum model, flood-pulse concept, nutrient cycling, population dynamics, and biotic interactions. Particular attention will be paid to the river-reservoir interface and how aquatic organisms deal with this anthropogenic anomaly. A unique aspect of this course is the presence of both professors in the classroom; that is, this course is truly team-taught, providing students the formal opportunity to interact with two faculty members that have differing experiences and sometimes differing opinions.

COURSE OBJECTIVES: This course will

- (1) examine physical and ecological process within rivers and reservoirs,
- (2) provide an understanding of the numerous alterations to ecosystems resulting from human activity, and
- (3) provide opportunities for interpersonal reflection of one's current views about ecological processes in rivers and reservoirs.

LEARNING OBJECTIVES: At the completion of this course, students should be able to

- (1) critique scientific studies; in particular, students will be able to identify strengths and weaknesses of scientific studies,
- (2) summarize the basic features of primary concepts in river and reservoir ecology,
- (3) discuss possible effects of human activity on river and reservoir ecosystems,
- (4) synthesize ecological concepts at the river-reservoir interface, and
- (5) express their own personal view of scientific paradigms for rivers and reservoirs.

TEXT: No formal textbook is required for this course. However, numerous journal articles (scientific literature) will be discussed in this course; some of these papers will be posted (PDF format) on Blackboard or emailed to class participants.

ATTENDANCE and PARTICIPATION: Regular attendance is required. This will be a "hands-on" class and much of the material cannot be learned by just reading the text (or questioning classmates). Full participation in all discussions and class activities is required.

A grade will be assigned for each student's class participation. The grading scale for participation will be very coarse (i.e., participated fully = 200 points; participated frequently = 170 points; participated infrequently = 140 points).

STUDENT PRESENTATION: Each student will be required to lead a one hour discussion session. The topic for that session will be determined by each student, with approval from the instructors. Students will be given a great deal of latitude (must be professional) for their presentation format. However, Powerpoint presentations **will not** be allowed. Students will not provide a lecture to the class. Rather, they will lead a discussion.

A grade will be assigned for each student's course presentation and for participation in other student-lead discussions. A form detailing the specific grading scheme will be provided.

COURSE PROJECT: Each student will be required to develop a detailed case study. The mechanics of a case study will be discussed in more detail during class, but should focus on application of a theory (discussed in class or elsewhere) to real-world problems associated with river and/or reservoir ecology. A form detailing the specific grading scheme will be provided. Class discussions following the project deadline may focus on editing and revisions.

EXAM: An oral exam will be given on March 17.

A grade will be assigned for each student's oral responses. As this type of exam results in different questions for each student, grades will be somewhat subjective. The exact format and evaluation approach will be discussed in class prior to the exam.

GRADING: Grades for this course will be determined based on performances on four assignments:

Class Participation	200 points
Presentation	300 points
Course Project	400 points
Oral Exam	100 points

Course grades will be assigned as follows:

90 -100.0%	A (minimum of 900 points)
80 - 89.9%	B (minimum of 800 points)
70 - 79.9%	C (minimum of 700 points)
60 - 69.9%	D (minimum of 600 points)
0 - 59.9%	F

These percentages may be adjusted downward; however, only by attaining these percentages can you be assured of receiving a desired grade.

STUDENT CONDUCT: Students are expected to adhere to all University policies.

STUDENTS WITH DISABILITIES: The School, College, and University endorse PL 101-336, the Americans with Disabilities Act of 1990. Any student who, because of a disability, may require some special arrangements in order to meet course requirements should contact the instructors as soon as possible to request necessary accommodations. Students should present appropriate verification from the Office of Services for Students with Disabilities (SSD). No requirement exists that accommodations be made prior to completion of this approved University process.

Tentative Schedule (subject to change at any given moment): topics and reading materials, if any, for each class meeting will be posted as they become available.

Month	Day	Topic	Deadlines
January	11	Course Introduction and Planning Discussion	
	13	Discussion – Reservoir zonation Discussion – Reservoir aging	Student discussion topics due
	18	Discussion – River Continuum & Serial Discontinuity concepts	
	20	No Class – Sturgeon Middle Basin Meeting	
	25	Discussion – Ecomorphology of fishes Discussion – Ecology and Ecohydraulics – Lancaster and Downes 2010	
	27	Discussion – Trophic Interactions Discussion – Match-mismatch hypothesis	
February	1	Discussion – Biotic homogenization Discussion – Meta-community paradigms	Case Study topics due
	3	Guest Discussion with Dr. Wayne Hubert	
	8	Student led discussion – Student led discussion –	
	10	Student led discussion – Student led discussion –	
	15	No Class – NE AFS meeting	
	17	Student led discussion – Student led discussion –	
	22	Student led discussion – Student led discussion –	
	24	Discussion – TBA Discussion – TBA	Case Studies due
March	1	Discussion – TBA	
	3	Discussion – TBA	
	8	Discussion – TBA	
	10	No Class – Missouri River Natural Resources Conference	
	15	Discussion – TBA	
	17	Oral Exam	
	22	SPRING BREAK – No Class	
	24	SPRING BREAK – No Class	
Mar 25 – May 6		Field work	