

WL 413/513 -- Advanced Fisheries Management, 3 credits

Fall, 2008

South Dakota State University

M, W 10:00-10:50 a.m.; F 10:00 a.m.-12:50 p.m.; SNP 179

Instructor: Brian Graeb SNP 141D 688-6990, and Dave Willis SNP138C 688-6121,
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Course description: Principles and techniques of selected practices for lentic and lotic fisheries sampling, assessment, and management.

Course prerequisites: WL 367, WL 412, or consent of instructor.

Technology skills: Word processing, graphics, D2L, and statistical software.

Course goal: We wish to provide an atmosphere where several of the more important topics in fisheries ecology, assessment, and management can be discussed in depth. We will review the history of these topics, and then use active learning exercises to enhance understanding of these topics, often in a team-based format. We will stress professional differences of opinion during discussion of topics, which is intended to guide students toward an understanding that ecological principles rarely are simple and that current dogma can at times be incorrect or incomplete. Finally, this course is directed at improving student communication (written and electronic information/technology based) and critical thinking skills.

Course objectives:

1. Learning to apply course material (to improve thinking, problem solving and decision).
2. Learning fundamental principles, generalizations, or theories.
3. Learning to analyze and critically evaluate ideas, arguments, and points of view.
4. Developing skills, competencies, and points of view needed by professionals.

Description of Instructional Method: We will attempt to maximize the quality and quantity of learning through at least some departure from the traditional lecture format. You have reached the point in your education where we expect you to guide your learning. The "lecture" portion of the course will focus on applied ecology, sampling, and exploitation/harvest regulations. Each topic will be partially "self-taught" using materials that we provide. Each lecture topic will be overviewed by a set of notes (including examples), a list of references, and/or direction to pursue independent research. Part of our class and laboratory time will be used to work on projects (e.g., sample fish communities at several locations and develop regulation toolboxes). Also, a series of guest speakers will be invited to make class presentations. Some of these guests will use the laboratory period for speaking so that we will not be constrained by the 50-minute class period during lecture. All of these individuals have volunteered their time and energy to improve your education; please make them welcome! Finally, Ph.D. students Justin VanDeHey, Mark Fincel, and Michael Weber will be the graduate teaching assistants for the course.

Course assumes knowledge of: population structure and dynamics (i.e., the dynamic rate functions), sampling gears, and fishery science topics such as length-frequency analysis, stock density indices (and confidence intervals), catch per unit effort (and confidence intervals), condition indices, weight-length regressions, population estimation, fish marking, mortality rate estimation, body length/scale radius relationships, age and growth, food habit analysis, and creel survey. Do not be concerned if you have some weaknesses among these topics. Everyone has a different educational background and set of experiences. This diversity is a strength for this class! We recruit students from a sufficiently broad geographic range that our group discussions are enhanced if people bring up examples from their varied backgrounds. If you are “weak” in any of these areas, see me for supplemental materials. Several, but not all, of these subjects will be covered in substantial depth during this course.

Group work: actually can require more work than individual effort. If you have not previously worked in groups, then this will be a new and worthwhile experience to help prepare you for your future conservation careers. The most important thing to remember is to divide the various assignments that need to be accomplished, and set clear deadlines that everyone must meet. It is essential that you handle the division of labor immediately and in the open. Be certain that **all** team members clearly understand their responsibilities.

Freedom in learning: Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should first contact the instructor of the course. If the student remains unsatisfied, the student may contact the department head and/or dean of the college which offers the class to initiate a review of the evaluation.

Course requirements: There is no required textbook for this course. Specific reading assignments will be provided in Desire2Learn (D2L), as indicated in the schedule below.

Attendance: Attendance will not be taken in the course. Attendance is recommended, and each student is responsible for all materials.

Grading procedures: Final grades for WL 513 and WL 413 will be assigned on the following basis. 90-100%=A, 80-90%=B, 70-80%=C, 60-70%=D, and <60%=F. There are 450 points possible in the course for graduate students (WL 513). Undergraduates (WL 413) are not required to complete the genetics case study and will be graded out of 425 possible points. The number of points may change during the semester if assignments are added or eliminated. If this occurs you will be given ample warning and explanation.

<u>Assignments/activities</u>	<u>Points</u>
1. Ecology and management	10
2. Missouri River ecosystem management plan	20
3. Group presentation- standardized sampling	25
4. Black crappie case study	25
5. Watkins Mills- indirect effects case study	25
6. Debate 1. "Pain" in fisheries	50
7. Group presentations- walleye toolbox	35
8. Innovative approaches to urban fisheries management	10
9. Genetics case study	25
10. Debate- evolution in fisheries	50
11. Group presentations- current issue in fisheries	25
12. Yellow perch case study	25
13. Final presentations- group projects	75
14. Participation (discussions, etc.)	50

Readings: These papers are available on D2L.

Magnuson Fish and Fisheries Ecology
 Palmer and Allan Ecosystem restoration case studies
 Koehler, C., and E. Blair. Putting it back together
 Sampling fall 08
 Exploitation and harvest fall 08
 Pond Management
 Pine et al Mark recapture model review

TENTATIVE Course Schedule

<u>Month</u>	<u>Date</u>	<u>Day</u>	<u>Topic</u>	<u>Activity</u>	<u>Materials</u>	
September	3	W	Introduction	Syllabus		
	5	F-lab	Fisheries Management	In-class assignment (1)	Magnuson paper	
	8	M	Ecosystem management	MR ecosystem plan (2)	Palmer and Allen	
	10	W	Ecosystem management	Discussion	Koehler and Blair	
	12	F-lab	Ecosystem management	Wayne Nelson-Statsny		
	15	M	Sampling evolution	Discussion	Sampling handout	
	17	W	Sampling	Design stand. sampling protocols		
	19	F-lab	Standardized sampling	Std. Samp. Presentations (3)		
		22	M	Regulations	Review packet	Regulations handout
		24	W	Regulations	Black Crappie case study (4)	
	26	F-lab	Regulations	Watkins Mills Case Study (5)		
October	30	M	Regulations	Assign toolboxes and discussion		
	1	W	No Class	Work on toolbox and debate		
	3	F-lab	Animal welfare	Debate-"pain" and fishes (6)		
	6	M	Animal welfare	Arlinghaus		
	8	W	Toolbox 1	Presentations- walleye toolbox (7)		
	10	F-lab	Toolbox 1	Blackwell and Lucchesi		
	13	M	NO CLASS	Holiday- Native American Day		
	15	W	Pond management	Pond mgmt. urban fisheries (8)		
	17	F-lab	Pond management	Willis discussion	Read Inland update	
	20	M	Genetics	VanDeHey		
22	W	Genetics	VanDeHey Genetics case study (9)			
24	F-lab	Genetics	VanDeHey			
27	M	Managing recruitment	Discussion			
29	W	Stock recruitment				
31	F-lab	Evolutionary effects of harvest	Debate- evolution angling (10)			
November	3	M	Stock recruitment	Discussion- SR freshwater fisheries		
	5	W	Mark-recapture	Lecture/discussion	Pine et al paper	
	7	F-lab	Mille Lacs	Pat Schmalz, MN DNR		
	10	M	Current issues in fisheries	Idea generation/discussion		
	12	W	No class	Work on presentations		
	14	F-lab	Current issue in fisheries 2	Group presentations (11)		
	17	M	Non game	Fincel		
	19	W	Non game	Fincel		
	21	F-lab	Non-native	Scott Gangl, NDGF		
	24	M	No class	Work on final projects		
26	W	No class	Work on final projects			
28	F-lab	NO CLASS	Holiday- Thanksgiving			
December	1	M	Great Lakes	Weber		
	3	W	Great Lakes	Weber - yellow perch case study (12)		
	5	F-lab	Great Lakes	Weber		
	8	M	Group project summary	Final presentations (13)		
	10	W	Group project summary	Final presentations (13)		
12	F-lab	No Class				

ADA statement: Students are entitled to reasonable accommodations under the provisions of the *Americans with Disabilities Act*. Those in need of such accommodation should notify the instructor and make appropriate arrangements with the SDSU Office of Disability Services, Binnewies Hall 145, 688-4504.

**Department of Wildlife and Fisheries Sciences
Academic Dishonesty Policy
(Revised Nov. 2000)**

The Department and the University have taken a strong and clear stand regarding academic dishonesty. We believe that it is unethical and unprofessional to present work done by others in a manner indicating that the student/s is/are presenting material as his/her original ideas or work; such activity is academic dishonesty. Plagiarizing or knowingly assisting others in plagiarizing on tests, quizzes, problems, assignments, research papers, theses, dissertations, or other academic activities is unacceptable behavior. All academic work completed by students is expected to be the original work of that individual student, unless permission is specifically granted beforehand by the faculty member for some form of team effort or other format. If students are unsure if a particular activity may be regarded as a form of academic dishonesty they should consult the faculty member before undertaking such an activity.

The University has a policy on academic honesty, procedures for academic grade and dishonesty appeals, and sanctions for such activities (see Student Code). The Student Code has **different** procedures for undergraduate and graduate students.

The Department policy described in this handout is intended to attempt to address perceived academic dishonesty violations between the faculty member/s and student/s **before** Student Code procedures are implemented. This is done because under Student Code procedures the **minimum** penalty for academic dishonesty is Disciplinary Probation. These added Department steps (Steps 1, 2, and 3 of the Undergraduate Student and Graduate Student Procedures) should not be construed as an attempt to circumvent the Student Code system; both students and/or the faculty member have the option to go directly into that system. The Department procedures portion of this policy are only available to a student one time; any second perceived offense will immediately follow the Student Code procedures.

Undergraduate Student Procedure

1. When a student/s is/are determined to have broken the Academic Dishonesty Policy, he/she will be notified **verbally** by the faculty member involved as to the problem and sanction selected. This is similar to procedures 02:02:01:03 and 02:02:01:04 in the Student Code. The faculty member will do this immediately after the perceived violation occurs. Sanction options available to the faculty member are as follows:

- a. provide the student/s a grade of zero or some other score on the test, quiz, problem, assignment, or other academic endeavor involved;
- b. provide the student/s a grade of "F" in the course;
- c. request that the student/s withdraw from the course;
- d. request that the student/s change the grading for the course to an "audit"; or
- e. immediately refer the case to the Student Code procedures.

The sanction selected is at the discretion of the faculty member, based on the seriousness of the situation.

2. If the student/s agrees to the sanction proposed by the faculty member the process is completed.
3. If the student/s does not agree to the sanction proposed by the faculty member, he/she has the right to appeal the faculty member's decision. This **Informal Phase Appeal** should be made directly (**both verbally and in writing**) to the faculty member involved within 5 class days of notification or within 7 calendar days of notification, if the incident is at the end of the semester. The faculty member may then modify or leave unchanged the sanction proposed in step 1. A copy of the student's **written appeal** and the faculty member's **written response** will be sent to the Department Head so that a confidential record to protect the student/s and the faculty member is established. The student/s written appeal and faculty member written response will be secured in the student's file until graduation or he/she leaves the program; if no further perceived violations have occurred these materials will be purged from the student's file.
4. If the student/s is/are still dissatisfied with the decision he/she can appeal to the Department Head. This **Informal Phase Appeal** should be made **verbally**. The Department Head will utilize this verbal appeal and the written student appeal and faculty written response described in step 3 to reach a decision. (These are steps 02:02:01:05, 02:02:01:06, and 02:02:01:07 in the **Informal Phase Appeal** process described in the Student Code).
5. If the student/s and faculty member agree with the Department Head's decision, the process is completed. Up to this point, no one other than the student/s, faculty member, and Department Head has been made aware of the situation.
6. If the student/s or faculty member is/are dissatisfied with the Department Head's decision they can enter the **Formal Phase** of the Student Code process (Student Code 02:02:02). It is the responsibility of the faculty member and student/s to be aware of the procedures and penalties involved.

Graduate Student Procedure

1. Same as Undergraduate Student Procedure step 1, except that the student's advisor and/or Advisory Committee **may** be involved (see Student Code 02:05:01:02, 02:05:01:03, and 02:05:01:04).¹

2. Same as Undergraduate Student Procedure step 2, except that the student's advisor and/or Advisory Committee **may** be involved (see Student Code 02:05:01:02, 02:05:01:03, and 02:05:01:04).
3. Same as Undergraduate Student Procedure step 3, except that the student's advisor and/or Advisory Committee **may** be involved (see Student Code 02:05:01:02, 02:05:01:03, and 02:05:01:04).
4. If the student/s is/are still dissatisfied with the decision he/she can **verbally** appeal to the Graduate Dean. (These are steps 02:05:01:05, 02:05:01:06, and 02:05:01:07 in the **Informal Phase Appeal** process described in the Student Code.)
5. If all agree on the proposed sanction at this point, the process is completed. Up to this point, no one other than the student/s, faculty member, Graduate Dean, and possibly the student's advisor and Advisory Committee has been made aware of the situation.
6. If the student/s, faculty member, advisor, or Advisory Committee are dissatisfied with the Graduate Dean's decision they can enter the **Formal Phase** (Student Code 02:05:02) of the Student Code process. It is the responsibility of the student/s, faculty member, and student's advisor and Advisory Committee to be aware of the procedures and penalties involved.

¹The student's advisor and/or Advisory Committee **may** be included because items other than class work could be involved.