

## WL 412, Principles of Fisheries Management Spring Semester, 2009 (3 credits)

South Dakota State University

Lecture: Tues/Thurs, 9:00 a.m., SNP 103

Labs: Mon, 1:00-3:50 p.m. (Instructor Justin Van De Hey); Mon 4:00-6:50 p.m. and  
Wednesday 1:00- 3:50 (Instructor: Michael Weber), SNP 179

### **Instructor:**

Dr. Brian Graeb, SNP 141d, 605-688-6990, Email use D2L; office hours Tues and Thurs 10 a.m.-12 p.m., by appointment, or stop by.

### **Lab instructors**

Justin Van De Hey (Mon afternoon lab), SNP 167, Justin.VanDeHey@sdstate.edu; office hours Mon 12-1pm.

Michael Weber (Mon evening and Wed afternoon labs), SNP 144,

Michael.Weber@sdstate.edu; office hours Mon 3-4, Wed 4-5.

**Course description:** Fisheries management as a science with an emphasis on freshwater fishes and ecosystems. Emphases include biota, habitat, and human management. Prerequisite WL 367 or department written consent. Corequisite WL 412L.

**Course goals:** My intention in this course is to provide an introduction to both fishery management (lecture) and fishery science (laboratory). These two subjects will then be integrated through the management plan that will capstone the course. In addition, this course is directed at improving student communication (written and electronic information/technology based), statistical and analytical, and critical thinking skills.

**Book:** The textbook for this course is *Inland Fisheries Management in North America* (**second edition**) published by the American Fisheries Society. Readings will be assigned for each third of the course. Some questions on each exam will be taken from these readings. Your laboratory exercises will frequently require reading assignments in *Fisheries Techniques* (**second edition**). You purchased this book for WL230, Wildlife and Fisheries Techniques.

<u>Exam</u>	<u>Chapters in <i>Inland Fisheries Management in North America</i></u>
1	1, 5, 13, 14, 17, 19
2	8, 9, 10, 11, 20, 21
Final	15, 16, 17, 18, 22, 23

**Attendance:** Attendance will not be taken. It is, however, highly recommended and each student is responsible for all materials presented in class.

**Lab manual and lecture handouts:** This course will utilize D2L for delivering course content, communication, and grades. Both the PowerPoint files for lecture and the

laboratory exercises will be provided to you in D2L. All materials will be in Adobe format (.pdf files). The Adobe Acrobat reader can be downloaded free of charge from the Internet. We recommend that you download and print lecture notes and lab handouts, and bring them to class with you. This syllabus will also be posted on the departmental web page (<http://wfs.sdstate.edu/>). Click first on "undergraduate curriculum," and then on "courses offered." This should take you to the following web address (<http://wfs.sdstate.edu/wfsdept/undergraduate%20courses.htm>).

**Exams:** Most questions will be of the essay type (comprehensive questions rather than "memorization" questions). Exams will include material from lectures, labs, and assigned readings. Make-up exams will not be allowed unless you contact me or the department secretary **prior** to the exam. Note: dates for exams 1 and 2 are subject to change, based on class progression. The exam dates below are tentative.

*Exam dates* Exam 1 → Feb 19; Exam 2 → April 9; Final Exam → May 7 (Noon-1:40 p.m.)

**Management plan:** One management plan will be written from a data set that we provide, and will be worth 100 points. You will be asked to form teams. I would prefer that you choose your own teammates, but I certainly can help you find a partner if needed. 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 all people must meet. It is essential that you handle the division of labor immediately (i.e., early) and openly.

The following format will be used: Introduction, Study Area, Methods, Results, Discussion, and References. Copies of previous management plans will be available in D2L. In the discussion, I will ask you to 1) list all feasible management alternatives, 2) choose the one you believe to be most appropriate, and 3) defend that choice. Management plan data will be distributed early in the semester, and the plan will be due **April 23**. The best approach to writing a successful management plan is to begin analyzing data early in the semester. To that end, we will periodically discuss the management plan during lab sessions.

**Communication skills:** Communication skills represent an integral part of the course; 100 points -- management plan of the course grade is based on performance in this area. The final grade for the management plan will be based on writing style (40%; concise, complete sentences, spelling, etc.), data analysis (40%), and the quality of your management recommendations (20%). Writing style should follow the format of our fisheries discipline; check the American Fisheries Society *Guide for Authors* when you have format questions. This assignment requires literature searching (e.g., Fish and Fisheries Worldwide through the Briggs Library) and assignment completion that involves electronic information/technology based skills (e.g., word processing, statistics, graphics, etc.).

**Grading:** A total of 680 points will be available for this course. They will be distributed as follows.

Exam 1	100
Exam 2	100
Management plan	100
Final exam	100
Assignment 1	5
Case Study 1	25
Case study 2	25
Case study 3	25
Case study 4	25
Lab exercises	150
<u>Final lab exercise</u>	<u>25</u>
Total	680

Grades will be assigned according to the following schedule. I will lower these limits if dictated by a lower distribution; however, only by attaining these averages will you be **assured** of receiving a desired grade.

90-100% → A; 80- 89% → B; 70- 79% → C; 60- 69% → D

**ADA Statement:** Students are entitled to reasonable accommodations under the provisions of the American with Disabilities Act. Those in need of such accommodation should notify the instructor and make appropriate arrangements with the SDSU Office of Disabilities Services, 110 West Hall, 688-4504 or 688-4032.

***ACADEMIC FREEDOM AND RESPONSIBILITY***

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.

**Lecture schedule: (Note the below schedule may be altered as needed)**

Introduction - population dynamics and population structure  
Food web ecology- understanding trophic interactions  
Biota management  
    Reducing the abundance of undesirable fishes  
    Reclamation- starting from scratch  
    Freshwater salmon programs

- Use of hybrids in fisheries management
- Fish stocking as a management tool
- Prey fish management
- Management of sport vs. nongame fishes
- Genetic tools in fisheries management- Justin Van De Hey
- Ecosystem management
- Human user management
  - Exploitation and harvest regulations
  - Creel surveys and angler-collected data
- Factors affecting year class strength (recruitment)
- Habitat management
  - Reservoir construction and operation
  - Water level management
  - Artificial structure (standing water)
  - Aquatic vegetation
  - Winterkill and summerkill
  - Nebraska aquatic habitat stamp program
  - Stream habitat improvement

**Tentative Lab Schedule, Cover Page, and Table of Contents Reading \***

Jan 26	Management plan, size structure analysis, and relative abundance T: 22-24, 158-159, 250-251, 466-467; review T: Chapters 6,7,8	
Feb 2	Stock density indices, confidence intervals, Swingle ratios	T: 33, 463-475
Feb 9	PSD review and use; 2c: pallid sturgeon case study	None
Feb 16	<b>No labs</b> (President's Day holiday; Dakota AFS meeting)	
Feb 23	Condition indices; 4b: Powerpoint file	T: 454-463
Mar 2	Linear regression review; 5b: weight-length regressions	T: 30-43, 50-53, 454
Mar 9	<b>No labs</b> (Spring break)	
Mar 16	Aging, food habits, Otolith/stomach removal	T: 483-495, 502-503
Mar 23	Otolith/Stomach analysis; aging various structures	None
Mar 30	Growth	T: 497-508; I: 151-155
Apr 7	Recruitment	
Apr 13	<b>No labs</b> (Easter)	
Apr 21	Mortality and mark-recapture	I: 140-150
Apr 28	Fisheries management in the real world (25 pts.)	

\* T = *Fisheries Techniques*; I = *Inland Fisheries Management in North America*

**Reminder** - Lab material will be tested during lecture exams

Important dates Note: These dates are subject to change

Jan 19	Martin Luther King Day- no Mon or Wed labs
Jan 23	Last day to drop
Jan 27	No Class- attend MN DNR guest seminar (6pm SNP103)
Feb 6	Last day to submit graduation applications
Feb 16	Presidents day- No Mon or Wed labs
Feb 19	Exam 1 (Biota Management)
Feb 24	No Class Dakota Chapter AFS, Bismarck, ND
Mar 9-13	Spring break-No class or lab
Apr 10-13	Easter- No Mon (4/13) or Wed (4/15) labs
Apr 9	Exam 2 (Human User Management)
Apr 23	Management plan due
May 7	Final Exam (Habitat Management) Noon-1:40 p.m.

**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 is only available to a student one time; any second perceived offense will immediately follow the Student Code procedures.

Undergraduate Student Procedure

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:

- provide the student/s a grade of zero or some other score on the test, quiz, problem, assignment, or other academic endeavor involved;
- provide the student/s a grade of F in the course;
- request that the student/s withdraw from the course;
- request that the student/s change the grading for the course to an audit•; or
- 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.

If the student/s agrees to the sanction proposed by the faculty member the process is completed.

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.

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).

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.

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

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).<sup>1</sup>

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).

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).

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.)

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.

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.

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