

**ZOOLOGY 477/677: WILDLIFE AND FISHERIES MANAGEMENT TECHNIQUES  
SPRING, 2012**

**INSTRUCTOR:**

Craig Stockwell

Stevens Hall 116 & 105

231-8449; [Craig.Stockwell@ndsu.edu](mailto:Craig.Stockwell@ndsu.edu)

**Office HOURS:** M, W, F 11-12pm; by appointment

**COURSE DESCRIPTION & OBJECTIVES:** Students will learn techniques used in the study and management of fish and wildlife populations. Students will design an independent field research project to be executed during a field trip (typically 2-4 days in length). Students will prepare a written research proposal and final paper based on original research conducted during the field trip. The proposal and paper will also be presented orally. Students will also learn to maintain a professional field journal. Finally, students will critique and discuss peer reviewed papers.

**SCHEDULE:** Last 7 weeks of spring semester, 2012 (March 19 – May 4);

**LECTURE: M,W, F: 9:00-10:50; Morrill 107;** Mondays will be reserved for group members to meet and for occasional class discussions.

**LAB:** Section 1 – 12:30-3:00; Section 3:30-6:00 - **Locations vary** see schedule below

**FIELD TRIP: TBA (mid-April)**

DATE	SCHEDULE	Assignment Due
March 19, 21, 23	Research approaches overview, questions, observations and hypothesis testing	Assignment #1 Due 3/25; 9am
March 22 (LAB)	Selecting a research question and literature review Group A: 12:30 – 3:00 - Group B: 3:30 – 6:00 -	
March 26, 28 & 30	Experimental design and proposal preparation	Assignment #2 Due 3/30; 9am
March 29 (LAB)	Critiquing scientific work Group A: 12:30 – 3:00 - Group B: 3:30 – 6:30 -	
April 2, 4	Data Analyses and proposal preparation	
April 5 (LAB)	Critiquing scientific work Group A: 12:30 – 3:00 - Group B: 3:30 – 6:30 -	
April 11, 13	Keeping a journal & habitat sampling	Proposal Due 4/13 – 9am
April 12 (LAB)	Proposal presentations April 12 & 13 Group A: 12:30 – 3:00 - Sudro 120 Group B: 3:30 – 6:30 - Sudro 120	
April 14 - 22	FIELD TRIP	
April 23, 25, 27	Preparing Final Paper	
April 26 (LAB)	Group A: 12:30 – 3:00 - Sudro 120 Group B: 3:30 – 6:30 - Sudro 120	
Apr 30, May 2, 4	Prepare Final paper & final presentation	Final Presentations May 3 & 4
April 3 (LAB)	Group A: 12:30 – 3:00 - Sudro 120 Group B: 3:30 – 6:30 - Sudro 120	Final paper due May 6 <sup>th</sup>

## LABORATORY

Laboratory will meet on Thursday afternoons in two sessions; 12:30-3:00 and 3:30-6:00. A field trip will occur in mid April and typically lasts 3-4 days. Therefore be prepared to be flexible in terms of scheduling. For the field trip come prepared for extreme weather conditions. You should dress warmly, wear water-repellent footwear and gloves (leather preferred). For the indoor *laboratories*, we will meet on campus.

## RESEARCH PROPOSAL AND PAPER

Each group (2 students) will identify a research problem, prepare and present a written proposal (4-5 pages) and write a paper in scientific format (5-10 pages). Each group will prepare a project contract that specifies the research goals for the group and how project will be conducted. Both individuals will work on both the proposal and the paper. One student will present the proposal to the class and the other group member will present the final paper. Both presentations will be made with power point. Data will be collected during the class field trip. The final paper will be due the final week of class.

## HOMEWORK ASSIGNMENTS

Three assignments will be provided all of which support the primary research project. Assignments will be docked 10% for each day late (25% over the weekend). Undergraduates will attend and participate in 2 of 4 discussions. Graduate students will participate in all four discussions and each graduate student will lead one discussion (see below).

Assignment #1: Group Contract	Due 3/25 (5pts)
Assignment #2: Library Research	Due 3/30 (5pts)
Assignment #3: Discussion participation (two discussions)	(10pts)

## JOURNAL

You will keep a formal research journal. The research journal will include the following sections: date & time, study site locality and route, weather and climate, habitat and vegetation, species list, techniques and procedures used, equipment and materials used, observations and hypotheses. Provide comments on the techniques considered including strengths or limitations. Due May 9<sup>th</sup> at 12noon.

## GRADUATE CREDIT:

### Reading Group:

In place of homework assignments #1 and #2, graduate students will each lead one discussion (10pts). They will also be expected to actively participate in all discussions (Assignment #3-10pts.) For each meeting all students will read 1-3 assigned papers. The discussion leader will provide a short summary of the paper(s) and lead the discussion. For each session, we will read at least one fundamental paper concerning research philosophy and design. Topics will include the following: 1) Philosophy of Science, 2) Experimental Design and pseudo-replication, 3) Multiple Hypotheses. 4) Hypothesis testing vs. emerging analyses paradigms. Papers for these topics will be provided by the instructor.

### Other responsibilities for Graduate Students:

Graduate students will conduct their research project independently; however, the class can be involved in data collection. Graduate students will also be expected to play a leadership role during the field trip. Finally, graduate students will present both the proposal and the final paper.

**REQUIRED STUDENT RESOURCES:**

Lectures, assignments and other resources will be posted on blackboard.

**GRADES: ALL ASSIGNMENTS MUST BE COMPLETED TO PASS THIS COURSE.**

Research journal (due May 9 <sup>th</sup> ; 12 noon)	10%
Assignments (Discussion for Graduate Students)	20%
Presentation	20%
Proposal (due Wednesday April 13; 9am)	20%
Paper (due Friday, May 6 <sup>th</sup> 9am)	30%

**ATTENDANCE POLICY**

This course relies heavily on participation of all students in the class; therefore, attendance is mandatory. Class periods will periodically be focused on group research activities. **More than one (1) unexcused absence will result in the loss of a letter grade for each additional absence.**

**Grades will be assigned as follows:**

90-100 =	A
80-89 =	B
70-79 =	C
60-69 =	D
below 60 =	F

**SPECIAL NEEDS:** Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor as soon as possible.

**ACADEMIC RESPONSIBILITY:** All work in this course must be completed in a manner consistent with NDSU University Senate Policy, section 335, Code of Academic Responsibility and Conduct (<http://www.ndsu.nodak.edu/policy/335.htm>).