**FW 370**  
**DESIGN OF FISH AND WILDLIFE PROJECTS**  
**SPRING 2018**

**Meeting time**  
Tuesday & Thursday 10:00 – 11:40

**Locations**  
Wagar 107 (lectures and discussion) & NR 232 CLL West (Labs)

**Credits 3**

**Instructor**  
Dr. Lise M. Aubry, FWCB department  
Email: lise.aubry@colostate.edu  
Office: Wagar 241  
Office hours: Thursday 11:45am-1:45pm

**Teaching Assistant**  
Shelley Spear, PhD student, FWCB department  
Email: slspear@rams.colostate.edu  
Office: TBA  
Office hours: Tuesday 11:45am-1:45pm

Welcome to FW 370! For this learning experience to be a success, please review the syllabus thoroughly. It has all the information you need to be successful in this course. If any part of the syllabus remains unclear, please e-mail me at lise.aubry@colostate.edu. Note that all course materials will be posted on Canvas.

**Course Description**  
The purpose of this course is to introduce you to the general principles of conducting research in fish, wildlife and conservation biology. The class will cover all phases of the scientific process, from generating hypotheses and study design, to data collection and analysis, interpretation and reporting of results.  
The course will emphasize philosophy and history of science, application of the scientific method in ecological research, preparation of research proposals, experimental design, data collection/analysis, scientific writing and scientific communication.  
These skills underpin modern natural resource management and related fields, and will increase competitiveness for those seeking careers in biological conservation, wildlife management, fisheries, etc. Individuals that have great difficulty with basic statistics and computing should not be discouraged, but will have to spend extra time working on the course material.
Course Resources

Textbook

- **Required:** Gotelli and Ellison (2013) *A Primer of Ecological Statistics* (“G&E” on the tentative schedule)
- **Recommended:** McMillan (2006) *Writing Papers in the Biological Sciences* (“M” on the tentative schedule)

**Canvas.** Canvas is the Learning Management System that we will use for our course. We will be using Canvas’ Modules, Quiz, Assignment, Discussion, and Announcement tools. The Discussion tool can be used amongst students to discuss course content, but **should not** be used to exchange results pertaining to lab assignments, quizzes, or exams.

**Software.** You will be using Microsoft Office (mainly word and excel) to complete your lab assignments, as well as R ([https://www.r-project.org/](https://www.r-project.org/)) for programming purposes.

Course Activities

**Lectures.** Powerpoints covering key topics — 60 minutes in length. Topics will fall under the umbrella of 1) history and application of the scientific method to ecological problems, 2) experimental design, data collection, and statistical analysis applied to ecological data, 3) scientific writing and communication.

**Readings.** Will be posted each week to deepen your understanding of topics presented in the lectures and labs. In addition to the assigned readings from Gotelli and Ellison, we will also discuss papers from the scientific literature. Papers will emphasize philosophy of science, experimental design and the importance of using the scientific method in fishery and wildlife research. These papers will be available on Canvas. Reading materials should not be neglected since they will be used to design questions pertaining to assignments, quizzes, and the exam.

**Lab assignments.** Computer-oriented sessions designed to help practice quantitative topics presented in the lecture, namely statistical analysis. These labs will be graded individually and your answers should be submitted online through canvas.

**Quizzes.** You will be required to complete multiple online quizzes throughout the semester. These quizzes will consist of approximately 10 to 20 multiple-choice, fill-in-the-blank, matching and (or) true/false questions based on lectures, labs, and readings. You will have two attempts and one week to complete each quiz.

**Exam.** There will be one exam designed to test your general knowledge of all topics covered in the class up to that point and will demand problem solving, short answers, and longer essays.

**Research proposal.** A research proposal (15-20 pages) describing a fish, wildlife or conservation biology investigation is required. Students will work in teams of 3 to develop the proposal. The proposal will include a comprehensive literature review, a statement of the hypothesis being tested, justification for the importance of conducting the proposed research, detailed methods including statistical analyses, expected results, and a budget. Examples of previous proposals and other information will be available on Canvas.

**Poster presentation.** During the last week of class, each team will develop a poster presentation describing and defending their proposed research. Poster presentations are open to graduate students and faculty in the department.
Grading

Lab assignments: 20%
Online Quizzes: 10%
Exam: 20%
Poster presentation: 10%
Research proposal: 30%
   Pieces (Abstract, Intro, outline, etc.): 10%
   Final Proposal with Group evaluation: 20%
Bonus points (participation and weekly rapidity game on canvas)

All lab assignments, quizzes, poster and research proposal must be turned in on time for full credit. Exceptions will be granted only under the most stringent conditions, requiring official medical or university documentation. Otherwise late assignments and quizzes will be docked 25% of the grade for each day late. Your grade will be calculated as follows:

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Course Policy

Feedback/Communication. I will use the Announcements page in Canvas to communicate changes to the course and other information each week. I will answer all questions you may have regarding course materials by e-mail (lise.aubry@colostate.edu) and will do my best to answer within 12 hours on weekdays. Make use of office hours with the instructor or the TA for course-related questions that are better discussed in person. You will receive specific feedback on your Assignments in the form of text comments appended to your electronic submissions. If you experience a legitimate emergency that prevents you from completing required coursework on time, please let me know ASAP. Make sure you state the nature of the emergency when making such inquiries.

Syllabus Changes. The syllabus is subject to change. I will notify the class regarding all changes via the Announcement page on Canvas.

Submitting Electronic Files. Please name your assignment file using the following convention: labnumber_yourname (e.g. lab1_liseaubry).
University Policy

**Accommodations.** Students who need accommodation in academic programs should contact the Office of Resources for Disabled Students, (970) 491-6385, to initiate the process. The website address is: Resources for Disabled Students: [http://www.rds.colostate.edu](http://www.rds.colostate.edu). Please let the instructor know of any accommodation you may need to be successful in the course at the beginning of the semester.

**Ethics.** The course will adhere to

- CSU’s Academic Integrity Policy: [http://catalog.colostate.edu/general-catalog/academic-standards/academic-policies/](http://catalog.colostate.edu/general-catalog/academic-standards/academic-policies/)
- the Student Conduct Code: [http://www.conflictresolution.colostate.edu/conduct-code](http://www.conflictresolution.colostate.edu/conduct-code)
- Violations will result in a grading penalty in this course and will be referred to the Office of Conflict Resolution and Student Conduct Services: [http://learning.colostate.edu/integrity/index.cfm](http://learning.colostate.edu/integrity/index.cfm), [http://learning.colostate.edu/integrity/ways_to_avoid.cfm](http://learning.colostate.edu/integrity/ways_to_avoid.cfm)

**Classroom environment.** Discriminatory behavior related to a person’s age, sex, gender identity, sexual orientation, race, ethnicity, national origin, creed, religion, or disability is unacceptable and will not be tolerated. Proper behavior for students prominently includes refraining from actions that disrupt class. Here are some useful resources to help identify and report such behaviors: [http://catalog.colostate.edu/general-catalog/policies/discrimination-harassment/](http://catalog.colostate.edu/general-catalog/policies/discrimination-harassment/)