Course Meeting Times/Places: Tu/Th 10-11:40, Wagar 132 (Lecture & Discussion) or NR 232, CLL West (Lab)

Instructors:

Dr. Rachel Buxton
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Course Objectives: The purpose of this course is to introduce you to the principles of conducting sound scientific research in fish, wildlife, and conservation biology. Major concepts that we will cover include the philosophy and history of science, application of the scientific method in fish, wildlife, and conservation biology research (from asking good questions to designing experiments to address those questions), and data collection & analysis. We will also address searching and reading the literature, scientific writing, and communication through preparation of ‘real-world’ research proposals. The course format will include lectures, group discussion of papers from the primary literature, and laboratory sessions designed to reinforce skills in statistics.

Course Reading & Additional Resources:

Discussion papers, lab documents, and other readings: Provided as PDFs on our Canvas page

Course Assignments:

Class discussions: Two class discussions will be held. Papers for these discussions will be taken from the primary literature emphasizing the philosophy of science, the scientific method, and the future of research in fish, wildlife and conservation biology. These papers will be posted on RamCT. Participation in discussion sessions is expected so it is critical that you read the papers, work through the discussion questions, and generally prepare to actively participate in discussion. Short quizzes (5-10min) before the discussion should be expected. Participation in the ‘How-to-Read-a-Scientific-Paper’ sessions is also expected.

Lab assignments & Homework: Three short ‘reports’ from the laboratory sessions will be due approximately one week after each lab session. We’ll also have several homework assignments to gain some practice in some key areas.

Research proposals: A formal research proposal (15-20 pages in length) describing a proposed scientific research project in fish, wildlife, or conservation biology is required. You will work in groups of two to three to develop the proposal. The proposal will include a comprehensive literature review that motivates your topic, a statement of the problem or question being examined, the main hypotheses and predictions, justification/importance for your proposed research, detailed methods, expected results, and a detailed budget. Several ‘pieces’ of the proposal will be due as smaller assignments throughout the semester to help guide the process. You will also have the opportunity to give (and receive) anonymous peer feedback about the proposal process (see below). Previous proposals and other helpful information will be posted on Canvas.

Proposal poster session: During the second to last week of class, each group will present a poster describing their proposed research during a formal scientific meeting-style poster session. Peers will attend the poster session, interact with presenters, and provide peer feedback to incorporate into the final written proposal. These poster sessions will be open to faculty and others in the department.
Student Evaluation & Grades:

Letter grades will be assigned with grade ranges as follows: A (90% or higher), B (80-89%), C (70-79%), D (60-69%), and F (<60%).

The following point distribution (1000 points possible; breakdown by assignment provided on Canvas) will be used:

- Participation, Discussions, Peer Feedback: 20%
- Midterm Exam: 12.5%
- Proposal ‘Pieces’: 20%
- Final Research Proposal: 20%
- Poster Presentation: 15%
- Lab Assignments, Homework: 12.5%

Course Policies & Additional Information:

The course will adhere to CSU’s Academic Integrity Policy which is found at (http://www.catalog.colostate.edu/Content/files/2014/FrontPDF/1.6POLICIES.pdf) and the Student Conduct Code (http://www.conflictresolution.colostate.edu/conduct-code). At a minimum, violations will result in a grading penalty in this course and will be referred to the Office of Conflict Resolution and Student Conduct Services.

Academic integrity is at the heart of a University and is central to our job as objective scientists. Academic integrity is conceptualized in this course as doing and taking credit for one’s own work on written materials, exams, and other coursework. A number of excellent resources are available (http://learning.colostate.edu/integrity/index.cfm, http://learning.colostate.edu/integrity/ways_to_avoid.cfm) to help students better understand what constitutes plagiarism and why it’s so important to give credit where it’s due. We will also talk in class about how to properly cite outside sources.

Because our class is large relative to the lab spaces we are assigned, we’ll all need to be patient and considerate of each other, and those in adjoining classrooms, to get the most out of our class sessions and so that everyone has sufficient space and help from instructors. Also, aspects of the syllabus and schedule may change as the course proceeds. Any change will be announced in class and schedule changes will be posted as an updated schedule on our Canvas site and on lecture PDFs.