

# SYLLABUS

NR791 INTRO. TO RESEARCH, 2020  
9 AM, FRIDAY; VIRTUAL CLASSROOM  
INSTRUCTOR: JAMES COOK, jcook@uwsp.edu

Text: "**How to Do Ecology**" 2<sup>nd</sup> edit. by R. Karban and others, 2014.  
Available at the Univ. Bookstore for purchase (can't rent).

<u>DATE</u>	<u>TOPIC &amp; READING</u>	<u>DUE DATE FOR</u>
9-4	Course structure & objectives Canvas site for class Intro to Study Plan Searching for Lit.	---
9-11	How to Manage Your Program <b>Editorials - Stearns + Huey*</b> <b>Working with Others - Chap 5</b> <b>Study Plan</b> - brief overview	---
9-18	Experimental Design* [H/O]** <b>Chap. 3; Steel et al. #3, 5</b>	
9-25	Experimental Design(cont) (same as last period)	Critique Asgn
10-2	Discuss Critique assignment Complete Exp. Design	
10-9	Experimental Design - Aquatic systems	D. Isermann
10-16	Sampling <b>Steel et al. #4,6</b>	Exp. Design
10-23	Discuss Exp. Design assignment Statistics: uses, definitions, types [H/O] Measures of central tendency	---
10-30	Statistics - assumptions Parametric vs. non-parametric <b>Chap. 4</b>	---
11-6	Buffer period	Study Plan Part #1
11-13	Statistics - inference <b>Brosi &amp; Biber 2009</b>	

11-20	Stats - wrap-up & application Discuss Study Plan - Methods <b>Cherry; Steel et al. #1,2,8,12,14,16</b> <b>Note - other points from Steel et al. may be of prime relevance to you, depending on analyses used</b>	---
12-4	Publish & Peer Review Process <b>McCoy, 1993*</b> <b>Pp. 88-92 in text</b>	Study Plan Part #2
12-11	Final hurdles -> Thesis & Defense No reading assignment	---

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\* Indicates a reading assignment is provided and these **are indicated in Bold**. Readings are provided in Canvas site for class.

\*\* A handout (outline) for this topic provided via Canvas.

#### GRADING

Class Preparation & Participation.....	10%
Critique of Study Plan - <b>due 9-25</b> . . . . .	10%
Experimental Design assignment - <b>due 10-16</b> .. . . .	12%
Study Plan	
1) Part 1: Intro., Lit. Rev. & Objectives <b>due 11-6</b> .	38%
2) Part 2: Methods - <b>due Dec. 4<sup>th</sup></b> .....	30%

#### EXPECTATIONS

A considerably higher level of initiative and performance is expected at the graduate level. This includes the level of preparation for class, and your willingness to contribute to class discussions. More specifically, this means:

1. For assigned readings, you should be able to explain the main points, and any weaknesses. You should be able to do this when you walk into the classroom.
2. Any writing should be a) thoroughly researched (if appropriate), b) logically organized and c) mechanically sound.

#### LEARNING OBJECTIVES

1. Be able to write an appropriate research hypothesis.
2. Demonstrate the ability to write clearly and concisely in a standard, scientific style.
3. Be able to produce written and verbal evaluations & summaries of articles from the primary literature.

4. Demonstrate the ability to apply principles of experimental design.
5. Understand the various roles of statistics in research, assumptions of parametric tests, differences among various categories of statistics, and the factors that determine the choice of a statistical method.

CITATIONS for PEER-REVIEWED SOURCES USED in CLASS

Brosi, Berry J. and Eric G. Biber. 2009. Statistical inference, Type II error and decision making under the US Endangered Species Act. *Frontiers in Ecology & Environment* 7(9):487-94.

Cherry, Steve. 1998. Statistical tests in publications of The Wildlife Society. *Wildlife Soc. Bull.* 26(4):947-53.

Steel, E. Ashley, Maureen C. Kennedy, Patrick G. Cunningham and John S. Stanovick. 2013. Applied statistics in ecology: common pitfalls and simple solutions. *Ecosphere* 49(9):1-13.

RESOURCES AVAILABLE - ON REQUEST or in CANVAS

1. Rules for Writers - some guidelines
2. Writing with Precision, Clariyy and Economy - some more guidelines