

FNR 5800-001: Research Methods for Natural Resource Social Scientists

Fall 2013

Department of Forestry and Natural Resources, Purdue University

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Course Information

Meeting Times: Tuesdays, Thursdays 10:30–11:45

Class Location: FORS 208

Credit Hours: 3

Office Hours: By appointment (or just stop by)

Purpose of Course

Designing research projects so that they answer critical research questions and advance scientific knowledge is a challenging endeavor. There are many considerations that go into well-crafted research. These considerations are the same for all disciplines. However, learning about research is easier when the examples used are of particular interest to the students. This course will cover the same concepts covered in many research design courses both at Purdue and at other universities. But it will use natural resource examples to illustrate the concepts. It is hoped that this direct application of the material will enhance learning among students interested in the natural resource social sciences and other similar disciplines.

There are several learning objectives for this course: 1) understand fundamental concepts such as theories and paradigms that are essential precursors to designing

sound research, 2) be able to articulate clear research questions and testable hypotheses, 3) differentiate between different research designs and know which are appropriate under which circumstances, 4) understand overarching issues such as validity and reliability, 5) know under which circumstances qualitative, quantitative or mixed methods are appropriate, 6) demonstrate knowledge of a variety of commonly-used research methods, 7) articulate basic steps involved in analyzing qualitative and quantitative data, and 8) demonstrate the ability to write a research proposal.

Course Basics

There will be a substantial amount of reading for this course. Students are expected to arrive in class having read and processed the assigned readings. Except when the material is especially difficult, course lectures and discussions will not rehash the reading materials. Rather class activities will build upon the reading materials.

Class will start on time each class session. Repeated tardiness will not be tolerated as it disrupts the flow of the class and limits the ability of students to learn.

Evaluation

Grades for the course are based on four evaluation mechanisms. The grading breakdown is as follows:

Exams – 300 points
Participation / attendance – 100 points
Assignments – 200 points
Presentations – 50 points
Proposal – 350 points

Final grades will be assigned based on the following distribution:

97-100%, A+
93-96.9%, A
90-92.9%, A-
87-89.9%, B+
etc.

Tasks

Exams

There will be two exams. These exams will be open-book, open-note, take-home exams. They are intended to ensure that you are grasping the material. Questions on the exams will ask you to apply the concepts covered in class to a variety of examples.

Participation/Attendance

You can earn up to 100 points for class participation. Each day you do not attend class without a good excuse, you will lose 10 points. If you miss more than 5 classes, you will get zero points for class participation. If you consistently attend class, but do not actually participate you will get up to 70 points. You will get up to 80 points for participating only occasionally and only in 'easy' ways, e.g. offering basic information from the readings. You will get up to 100 points for frequently contributing to class discussions in ways that improve student learning, e.g. asking thoughtful questions, offering insightful examples, etc. You will lose points if your participation prohibits others from participating, e.g. you monopolize conversation, you are disrespectful, you interrupt, etc.

Assignments

Each student will complete four assignments throughout the semester. The first of these assignments will focus on a critique of one of two research proposals that you will read for the second week of class. For this assignment you should write a maximum two page review that includes the following: (1) what was this proposal trying to accomplish? (2) what are the research questions and hypotheses in this proposal? (3) what are the independent and dependent variables? (4) how was theory used? (5) what are strengths and weaknesses of this proposal? Be prepared to discuss your thoughts in class.

Assignments 2 and 3 will focus on critiques of peer-reviewed literature. You will sign up for dates/articles during the first week of class. Due dates for this assignment will vary; your short essay is due at the beginning of the class period that we will be discussing the article. This essay should be a maximum two page review of the article. Refer to Appendix B of Schutt for ideas of things to discuss. You should demonstrate critical thinking about the article in your review. In particular, make sure to discuss how the article illustrates (either positively or negatively) the use of the method we're scheduled to discuss in class. You should be prepared to open class discussion with your thoughts and questions about the article.

Assignment 4 will be assigned in class.

Presentations

Each student will give two short (~5-minute) presentations in class. The first will be on a social science theory and is due on September 12. The second, on a social network

analysis journal article, is due on November 21. More information will be given about these assignments in class.

Proposal

Each student is expected to write a research proposal (no longer than 15 pages). You may choose to write this about anything you like – if you are ready to write a thesis or dissertation proposal, then we strongly recommend you use this assignment to help you progress. However, if you are not ready to write an official proposal, then we suggest you choose a research question from a list that we will provide in class. These questions are designed to challenge you and allow you to apply course concepts.

The Fine Print

Late Policy

Assignments received after the due date will be downgraded one full letter grade per day (24-hour period). If you can not attend class on a due date, it is your responsibility to turn in the assignment through a classmate or in advance. You must let me know if circumstances out of your control make it impossible to complete the assignment on time (e.g. a family emergency).

Academic Dishonesty

Dishonesty in connection with any class assignment will not be tolerated. The penalty for dishonesty will be a zero credit for the examination or assignment and the reporting of the dishonest activity to the Dean of Students for disciplinary action. Scholastic dishonesty includes, but is not limited to, cheating, use of illegal crib notes, copying during examinations, copying of assignments, exercises, and computer programs, plagiarism, and knowingly furnishing false information. Moreover, knowingly aiding and abetting, directly or indirectly, other parties in committing dishonest acts is in itself dishonest.

Diversity Statement

In this course, each voice in the classroom has something of value to contribute. Please take care to respect the different experiences, beliefs and values expressed by students and staff involved in this course. We support Purdue's commitment to diversity, and welcome individuals of all ages, backgrounds, citizenships, disability, sex, education, ethnicities, family statuses, genders, gender identities, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences.

Campus Emergencies

In the event of a major campus emergency or any campus-wide circumstances that disrupt the normal course schedule, the course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Here are ways to get information about changes in this

course: Blackboard web page, email (lprokopy@purdue.edu, carltons@purdue.edu) and phone: (765) 496-2221.

Syllabus May Change!

We reserve the right to modify the syllabus as the semester progresses to ensure that students learn as much as possible.

Readings

One book is required for this class:

Schutt, Russell K. 2012. Investigating the Social World: The Process and Practice of Research, 7th edition. Thousand Oaks, CA: Pine Forge Press. ISBN: 9781412999809.

This textbook has a sociology emphasis. None of the examples deal with natural resource issues. We will supplement the text with journal articles that apply the concepts to natural resource social sciences. We will also read other method books to fill in gaps (e.g. case studies, mixed methods) that this text book does not cover in sufficient detail.

All readings except the main text will be available through Blackboard. The full bibliographic information for the readings is included at the end of this syllabus.

Schedule

Topic 1: Research Overview

August 20: Course overview; what is science?

August 22: Types and goals of social research; theories & paradigms
Schutt, Chapter 1

Topic 2: Process and Problems of Social Research

August 27: Qualitative and quantitative research; proposal writing
Schutt, Chapter 2

August 29: Research questions and hypotheses; proposal writing
Prokopy et al. NSF proposal
Prokopy et al. USDA proposal

Assignment 1 Due

September 3: Ethics. Guest Lecturer: Patrick Freeland
Reviews of Prokopy et al. NSF submission
Reviews of Prokopy et al. USDA submission
Schutt, Chapter 3
Prokopy 2008

Topic 3: Conceptualization and Measurement

September 5: Conceptualization & Measurement
Schutt, Chapter 4
Brehm and Eisenhauer, 2006

Research Question Due

Topic 4: Sampling

September 10: Sampling; Guest Lecturer: Dr. Rebecca Perry-Hill
Schutt, Chapter 5
Guest et al. 2006

September 12: Social Science Theories

5-minute presentation on a natural resource social science theory

Topic 5: Research Design

September 17: Research design and causation

Schutt, Chapter 6

September 19: Experiments

Schutt, Chapter 7

Schultz 1998

September 24: No class, work on exam

September 26: No class, work on exam (**Exam 1 due 9/27**)

Topic 6: Experiments and Quasi-Experiments

October 1: Quasi-experiments

Reichardt 2009

October 3: Validity

Cook and Campbell 1979, Chapter 2

[October 8: October Break]

Topic 7: Case Studies

October 10: Case studies 1

Yin 2008, Chapter 1

Floress et al. 2009

October 15: Case studies 2

Yin 2008, Chapter 2

Baxter 2010

Cronin and Ostergren 2007

Topic 8: Evaluation Research

October 17: Evaluation research & logic models

Schutt, Chapter 11

Charnley & Engelbert 2005

McLaughlin & Jordan 1999

Topic 9: Survey Research

October 22: Surveys 1

Schutt, Chapter 8

Dillman et al., Chapter 7

Assignment 4 Due

October 24: Surveys 2
Jacobson et al. 2007
Brunke and Hunt 2007

October 29: Surveys 3; the practical side
Guest lecture: Dr. Zhao Ma

Topic 10: Qualitative Research

October 31: Overview of qualitative research: trustworthiness, applicability, consistency
Schutt, Chapter 9
Whittemore et al. 2001

November 5: Interviews; Guest Lecturer: Dr. Nicholas Babin
Patton, 2002, chapter 7
Yung and Belsky 2007

Draft Research Proposal Due (optional)

November 7: Miscellaneous Methods (Focus groups, Delphi technique, participant observation)
Mangun et al. 2007
De Urioste-Stone et al. 2006
Widner and Roggenbuck 2000

Topic 11: Data Analysis

November 12: Qualitative data analysis; Guest Lecturer: Amber Mase
Schutt, Chapter 10
Ryan and Bernard 2003
Miles et al. Chapter 4

November 14: Quantitative analysis
Schutt, Chapter 14

Exam 2 Due

Topic 12: Additional Methods

November 19: Content and discourse analysis
Schutt, Chapter 13 (focus on pp. 430-444)
Muter et al. 2009.

November 21: Social Network Analysis

*** 5-minute presentation on Social Network Analysis paper due***

Topic 13: Mixed Methods

November 26: Mixed Methods

Sale et al. 2002

Morse 2003

[November 27–30: Thanksgiving Break]

December 3: Proposal presentations

December 5: Proposal presentations; Course wrap-up

Research Proposal Due December 6, 5 PM

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