

Course Outline

EST 603

RESEARCH METHODS & DESIGN**David A. Sonnenfeld***Department of Environmental Studies*

SUNY College of Environmental Science and Forestry

*Fall 2017, TuTh 9:30-10:50 am, Bray 300***DESCRIPTION****Overview**

This course surveys foundations of (especially, social) scientific research methods and design. All master's and PhD students in Environmental Studies, Environmental Science, Natural Resources Management, Landscape Architecture, or other fields with a 'human dimensions' or policy aspect to their research are welcome. Topics include the scientific method; research ethics; research design; measurement; sampling; quantitative, qualitative, and multimethod data collection techniques; data analysis and interpretation; and research proposal development. Students learn how to define a research question, explore the strengths and limitations of a variety of social science research methods, gain practical experience with several data collection methods, and draft a preliminary research proposal. Following completion of this course, it is expected that students will conduct further, in-depth study of those method(s) of data collection and analysis most appropriate to their research topic, research question(s), and field(s) of study.

Prerequisites

Prior or concurrent coursework in statistical analysis is recommended.

Objectives

By the completion of this course, students should be able to:

- Define a scientific research question, clearly and succinctly;
- Determine appropriate levels and units of analysis for that research question;
- Locate, critically review, and apply relevant peer-reviewed, scholarly literature on a selected question;
- Operationalize a research question, specifying dependent and independent variables;
- Select appropriate method(s) of data collection and analysis for various types of research questions;
- Demonstrate familiarity with ESF/SU policies and procedures for the protection of human subjects, including via the Institutional Review Board (IRB); and
- Draft a preliminary thesis/ dissertation research proposal.

Requirements

- Attend all class sessions
- Read all required texts
- Participate in all class discussions
- Complete all homework assignments, including online training modules on the protection of human subjects
- Write a preliminary research proposal

Grading

Homework assignments	30%
Mid-term exam	30%
Research proposal & presentation	30%
Attendance and participation	10%

Communication

Office: 211B Marshall

Hrs.: M 3:30 –5:30 pm, Tu 3:30–4:30pm, & by appt.

E-mail: <dsonn@esf.edu> and <DASonnenfeld@gmail.com>

Web: <http://www.esf.edu/es/sonnenfeld>

TEXTS

Required

Singleton, Royce A., Jr., and Bruce C. Straits. 2017. *Approaches to Social Research*, 6th ed. New York: Oxford Univ. Press. ISBN 978-0-19-061424-9 *** Must be 6th ed. ***

Recommended

Kuhn, Thomas S. 2012. *The Structure of Scientific Revolutions*, 50th Anniversary ed. Chicago: University of Chicago Press. ISBN 978-8-0226-45812-0

Öberg, Gunilla. 2011. *Interdisciplinary Environmental Studies: A Primer*. Hoboken, NJ: Wiley-Blackwell. ISBN 978-1-4443-3687-0

Meadows, Donella H. 2008. *Thinking in Systems: A Primer*, ed. Diana Wright. White River Junction, VT: Chelsea Green Publishing. ISBN 978-1-60358-055-7

Bui, Yvonne N. 2013. *How to Write a Master's Thesis*, 2nd ed. Los Angeles: Sage. ISBN 978-1-452-20351-5

Lester, James D., and James D. Lester, Jr. 2015. *Writing Research Papers: A Complete Guide*, 15th ed. Upper Saddle River, NJ: Longman. ISBN 978-0-32195-295-0

Bookstore

ESF Virtual Bookstore, available via myESF. For further information see:

<http://www.esf.edu/students/books.htm>

LIBRARY GUIDE

<http://libguides.esf.edu/est603>

SCHEDULE

PART I: SCIENCE IN CONTEXT

Week 1 – The Scientific Context: Philosophy of Science

Tues., 8/29: Course introduction

Why study research methods?

Aims of this course

Assumptions

Syllabus review

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, preface, ch 1

ADDITIONAL:

Fuller, Steve. 1997. *Science*. Minneapolis: University of Minnesota Press.

*** Weekly Assignment #1 – Essay: Why Science? (due Tues., 9/5) ***

Thurs., 8/31: The scientific method

In historical perspective

Scientific revolutions (Kuhn)

Strengths, limitations & critiques

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, intro to Part I, ch 2

RECOMMENDED:

Kuhn, *Structure of Scientific Revolutions*

Öberg, *Interdisciplinary Environmental Studies*

ADDITIONAL:

Russell, Bertrand. 1965. *On the Philosophy of Science*. Indianapolis: Bobbs-Merrill.

Law, John. 2004. *After Method: Mess in Social Science Research*. NY: Routledge.

Week 2 – The Intellectual Context: Selecting a Research Topic

Tues., 9/5: Selecting a problem or topic

The relationship between theory and method

What makes a problem/ topic interesting?

What is researchable? Feasibility...

The 'so what?!' factor

The value of simplicity

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 4

RECOMMENDED:

Bui, *How to Write a Master's Thesis*, ch 2

ADDITIONAL:

Alford, Robert. 1998. *The Craft of Inquiry: Theories, Methods, Evidence*. NY: Oxford.

Blaikie, Norman. 2010. *Designing Social Research: The Logic of Anticipation*, 2nd ed. Malden, MA: Polity Press.

Newing, Helen. 2011. *Conducting Research in Conservation: Social Science Methods and Practice*. New York: Routledge.

*** Weekly Assignment #2 – Preliminary Research Question (due Tues., 9/12) ***

Thurs., 9/7: Review of prior scholarship

Identifying relevant, peer-reviewed journals

Accessing scientific literature

Review essays

Critical perspectives

Properly citing and referencing source material

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 17, pp. 558-563

RECOMMENDED:

Bui, *How to Write a Master's Thesis*, ch's 3, 6

Week 3a – The Scholarly Context: Reviewing Prior Studies

Tues., 9/12: Workshop: selecting a research topic

*** Weekly Assignment #3 – Complete SU/ IRB CITI training (due Tues., 9/19) ***

*** Weekly Assignment #4 – Preliminary Bibliography (due Tues., 9/26) ***

Week 3b – The Ethical Context: Protecting Human Subjects

Thurs., 9/14: Protecting human subjects

Who are 'human subjects'? (definition)

Why do they need protection, and from whom?

How are they protected, and by whom?

Federal guidelines and regulations, incl. the Belmont Report

Professional codes of conduct

SU/ ESF Institutional Review Board policies and procedures

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 3

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. 1979. "The Belmont Report. Ethical Principles and Guidelines for the Protection of Human Subjects of Research." National Institutes of Health, April 18.

RECOMMENDED:

Bui, *How to Write a Master's Thesis*, ch 4

Week 4 – The Ethical Context: Protecting Human Subjects (cont'd)

Tues., 9/19: Workshop: research ethics

GUEST SPEAKER:

Jeanne Dietrich, IRB Administrator, Office of Research Integrity and Protections, Syracuse University (invited)

REQUIRED:

Collaborative Institutional Training Initiative (CITI) Web-based Training Program, available via on-campus access of the website of Syracuse University's Office of Research Integrity and Protections. Estimated duration: 2-6 hrs. *Must be completed prior to class; bring copy of completion certificate.*

Thurs., 9/21: NO CLASS

PART II: RESEARCH DESIGN

Week 5 – Units of Analysis & Variables

Tues., 9/26: Levels and units of analysis

Research stages

Levels of analysis; levels of abstraction

Units of analysis

Ecological fallacy

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 4

RECOMMENDED:

Bui, *How to Write a Master's Thesis*, ch 2

ADDITIONAL:

Alford, Robert R., & Roger Friedland. 1985. "Theoretical perspectives as modes of inquiry." Ch. 1 in *Powers of Theory: Capitalism, the State, and Democracy*. Cambridge, UK: Cambridge University Press.

Alford, Robert R. 1998. *The Craft of Inquiry: Theories, Methods, Evidence*. NY: Oxford Univ. Press.

Blaikie, Norman. 2010. *Designing Social Research: The Logic of Anticipation*, 2nd ed. Malden, MA: Polity Press.

*** Weekly Assignment #5 – Research Question Elaboration (due Tues., 10/3) ***

Thurs., 9/28: Variables and relationships

Variables

Types of variables

Relationships between variables

Formulating research questions and hypotheses

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 4

ADDITIONAL:

Alford, Robert R. 1998. *The Craft of Inquiry: Theories, Methods, Evidence*. NY: Oxford.

Week 6 – Measurement and Sampling

Tues., 10/3: Measurement

The measurement process
Operationalization
Levels of measurement
Reliability
Validity

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 5

*** Weekly Assignment #6 – Measurement/ Sampling Exercise (due Tues., 10/10) ***

Thurs., 10/5: Sampling

Defining the population of interest
Sampling and case study approaches
Data analysis and interpretation
Sampling bias
Generalization

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 6

ADDITIONAL:

Ragin, Charles C., & Howard S. Becker, eds. 1992. *What Is a Case? Exploring the Foundations of Social Inquiry*. NY: Cambridge Univ. Press

Week 7 – Course Review & Mid-Term

Tues., 10/10: Research design: review & discussion

Research stages
Levels and units of analysis
Variables
Measurement
Sampling

*** Weekly Assignment #7 – Research Proposal Outline (due Thurs., 10/19) ***

Thurs., 10/12: Mid-term examination

*** Bring pencils and an eraser ***

Week 8 – Writing Research Proposals

Tues., 10/17: Elements of a research proposal

Why write a research proposal?
Elements of a research proposal

REQUIRED:

Pzreworski, Adam, & Frank Salomon. 1998. *The Art of Writing Proposals*. NY: Social Science Research Council.

Thurs., 10/19: Workshop: research funding

Research funding

Pivot funding database

GUEST SPEAKER:

Jane Verostek, Moon Library (invited)

RECOMMENDED:

"ESF Grants Search" Library Guide: <http://libguides.esf.edu/grants>

*** Note: Class session will be in the Baker 437 computer lab (to be confirmed) ***

PART III: RESEARCH METHODS**Week 9 – Overview; Survey Research Design****Tues., 10/24: Overview of research methods**

Overview of research methods

Quantitative (multivariate) methods

Qualitative (interpretive) methods

Using available data

Multimethod and applied research methods

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 1 (review); intro to Part III

RECOMMENDED:

Singleton & Straits, *Approaches to Social Research*, ch's 7, 8

Bui, *How to Write a Master's Thesis*, ch 6

ADDITIONAL:

Alford, Robert R. 1998. *The Craft of Inquiry: Theories, Methods, Evidence*. NY: Oxford.

Fahy, Frances, & Henrike Rau, eds. 2013. *Methods of Sustainability Research in the Social Sciences*. Los Angeles: Sage.

Newing, Helen. 2011. *Conducting Research in Conservation: Social Science Methods and Practice*. New York: Routledge.

Ragin, Charles C. 2011. *Constructing Social Research: The Unity and Diversity of Method*. Thousand Oaks, CA: Sage.

*** Weekly Assignment #8 – Literature Review (due Tues., 10/31) ***

Thurs., 10/26: Survey design

General features of survey research

Uses and limitations of surveys

Survey research designs

Steps in and forms of survey research

Administering surveys

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 9

RECOMMENDED:

Singleton & Straits, *Approaches to Social Research*, ch's 15-16

*** Weekly Assignment #9 – Survey Research Exercise (due Tues., 11/7) ***

Week 10 – Survey Research Methods

Tues., 10/31: Survey instrumentation

Designing and developing a survey

Types of questions

Pretesting

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 10

RECOMMENDED:

Singleton & Straits, *Approaches to Social Research*, ch's 15-16

ADDITIONAL:

Dillman, Don, et al. 2009. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*, 3rd ed. Hoboken, NY: John Wiley.

Thurs., 11/2: Survey research practicum

*** Note: Class session in the Baker 437 computer lab (to be confirmed) ***

Week 11 – Field Research Methods

Tues., 11/7: Field research methods

Participant observation/ ethnographic research

Participatory action research

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 11

RECOMMENDED:

Wilmsen, et al., *Partnerships for Empowerment*

ADDITIONAL:

Fetterman, David M. 1998. *Ethnography: Step by Step*, 2nd ed. Thousand Oaks: Sage.

Emerson, Robert M., et al. 1995. *Writing Ethnographic Fieldnotes*. Chicago: Univ. Chicago Press.

Colfer, Carol Pierce, ed. 2005. *The Equitable Forest: Diversity, Community, & Resource Management*. Washington, DC: Resources for the Future

*** Weekly Assignment #10 – Participant Observation Exercise (due Tues., 11/14) ***

Thurs., 11/9: Participant observation practicum

Week 12 – Using Available Data

Tues., 11/14: Using available data

Discourse/ content analysis

Comparative historical analysis

Case-study based research

What is a case?

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 12

RECOMMENDED:

Ragin, Charles C., & Howard S. Becker. 1992. *What Is a Case? Exploring the Foundations of Social Inquiry*. NY: Cambridge Univ. Press.

ADDITIONAL:

Ragin, Charles C. 1987. *The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies*. Berkeley: UC Press.

Yin, Robert K. 1992. *Case Study Research: Design and Methods*. Thousand Oaks, Calif.: Sage.

*** Weekly Assignment #11 – Available Data Research Exercise (due Tues., 11/28) ***

Thurs., 11/16: Available data practicum

*** Note: Class session in the Baker 310 computer lab (to be confirmed) ***

THANKSGIVING BREAK**Week 13 – Integrative Research Methods****Tues., 11/28: Mixed, systems & applied methods**

Mixed research methods

Systems approaches

Applied research methods

Meta-analysis

REQUIRED:

Singleton & Straits, *Approaches to Social Research*, ch 13

RECOMMENDED:

Meadows, *Thinking in Systems*

Singleton & Straits, *Approaches to Social Research*, ch 14

ADDITIONAL:

Brewer, John, & Albert Hunter. 2006. *Foundations of Multimethod Research: Synthesizing Styles*. Thousand Oaks, Calif.: Sage.

Clark, Tim W. 2002. *The Policy Process: A Practical Guide for Natural Resource Professionals*. New Haven, CT: Yale Univ. Press.

Kasemir, Bernd, et al. 2003. *Public Participation in Sustainability Science: A Handbook*. New York: Cambridge University Press.

Stoecker, Randy. 2005. *Research Methods for Community Change: A Project-Based Approach*. Thousand Oaks: Sage.

Vaccaro, Ismael, Eric Alden Smith, & Shankar Aswani, eds. 2010. *Environmental Social Sciences: Methods and Research Design*. New York: Cambridge University Press.

PART IV: RESEARCH PROPOSALS**Thurs., 11/30: Research proposals – open workshop**

Week 14 – Student Presentations/ Discussion

Tues., 12/5

Thurs., 12/7

Finals Week – Research Proposals Due

NOTICES

Accommodations

SUNY-ESF works closely with the Office of Disability Services (ODS) at Syracuse University in assisting students with learning and physical disabilities. If you may need accommodations in this course related to a disability, please contact the ESF Office of Student Affairs, 110 Bray Hall, tel. 315.470.6660, for assistance with the process. You may also contact ODS directly, 804 University Avenue, rm. 309; call 315.443.4498, to schedule an appointment. ODS is responsible for coordinating disability-related accommodations and issues Accommodation Authorization Letters to students with documented disabilities, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. To learn more about ODS, visit <http://disabilityservices.syr.edu>.

Academic integrity

Plagiarism is presenting others' work as your own without acknowledgment of its source(s). Plagiarism includes verbatim and close paraphrasing of material from course texts and other published materials, cutting and pasting from electronic sources, and unattributed paraphrasing. Acts of academic dishonesty are defined in the [ESF Academic Integrity Handbook](#) and violate the College's *Code of Student Conduct*. Students are accountable for such acts. If you have any questions about how to properly quote or reference others' work, please consult writing reference texts, your instructor, or other campus resources.

Personal electronics

This course is intended to be an educational experience for all. To ensure that the classroom environment is conducive for learning, please follow these guidelines in use of personal electronics: *Cell phones* should be *off* while class is in session. If you need to maintain your phone on silent mode due to a personal emergency, please notify the instructor in advance. Digital devices may be used for reading, note-taking, and course-related research activities. *Text messaging, social media* viewing, updating, etc., during class is disruptive and not permitted. Disruptive behavior is a violation of [ESF's Code of Student Conduct](#). Students who are disruptive may be asked to leave the classroom; persistent disruptions will have further consequences.

Fire alarm procedures

If a fire alarm sounds, exit the building immediately, to the area designated for this course. Stay together as a class until released. Take all personal belongings with you, including keys, backpacks, electronics, and coats. Let your instructor know in advance if you have any special needs in case of a building evacuation. For further information, contact the Office of Student Affairs, tel. 315.470.6660.