Description

Overview
This course surveys foundations of (especially, social) scientific research methods and design. It is designed especially for first-semester MS in Environmental Studies students. Graduate students from other programs who have a 'human dimensions' or policy aspect to their research are welcome, as well. Topics include the scientific method; research ethics; research design; measurement; sampling; quantitative, qualitative, and mixed 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 various research methods, gain brief practical experience with several data collection methods, and draft a preliminary research proposal. Upon successful completion of this course, it is expected that students will study in greater depth those particular method(s) for data collection and analysis most appropriate for their research topic, question and field(s) of study.

Prerequisites
There are no formal prerequisites for this course. Prior or concurrent coursework in statistics is recommended, however.

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

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

- Attend all class sessions;
- Read all required texts;
- Complete the CITI online protection of human subjects training module;
- Complete all course research practica; and
- Write a preliminary research proposal.

Grading

Weekly assignments (11) 20%
Mid-term exam 35%
Research proposal & presentation 35%
Attendance and participation 10%

Communication

Office: 211B Marshall
Hrs.: M Tu 3:30–5:20pm & by appointment
Tel. 315.470.4931/ 6636, fax 470.6915
E-mail: <dsonn@esf.edu>, and <DASonnenfeld@gmail.com>
URL: http://www.esf.edu/es/sonnenfeld

TEXTS

Required


Recommended


Bookstore

Syracuse University Bookstore, Schine Student Center, tel. 315.443.9900, http://bookstore.syr.edu/
RESEARCH PROPOSAL

Focus. This major, end-of-semester, assignment may take the form of a preliminary research or funding proposal for master's thesis research (for MS students), a draft dissertation research or funding proposal (for PhD students), or a proposal for a research-based internship or synthesis project (for MPS students).

Contents. All of the following should be included: title, abstract, statement of problem/ research question, justification, review of the literature, formal statement of research question, dependent and independent variables, hypotheses, proposed research design and methods, measures for protection of human subjects, proposed research schedule, resource requirements, budget, possible funding sources, preliminary bibliography.


Oral presentation. Present your research proposal in class, 10-15 min., including questions and discussion. Week 14. (20% of assignment grade)

Written proposal. Cover sheet, abstract, spelling and grammar checked, citations and references. Maximum length, 20 pp. double-spaced, inclusive. Due at beginning of the regularly scheduled Final Exam period for this course. (80% of assignment grade)

SCHEDULE

PART I: SCIENCE IN CONTEXT

Week 1 – The Scientific Context: Philosophy of Science

Tues., 8/27: Course introduction

Why study research methods?
Aims of this course
Assumptions
Syllabus review
REQUIRED:
Singleton & Straits, Approaches to Social Research, preface, ch 1
ADDITIONAL:

Thurs., 8/29: The scientific method

In historical perspective
Scientific revolutions (Kuhn)
Strengths, limitations & critiques

REQUIRED:
Singleton & Straits, *Approaches to Social Research*, ch 2

RECOMMENDED:
Kuhn, *Structure of Scientific Revolutions*
Öberg, *Interdisciplinary Environmental Studies*

ADDITIONAL:

*** Weekly Assignment #1 – Essay: Why Science? (due Tues., 9/3) ***

**Week 2 – The Intellectual Context: Selecting a Research Topic**

**Tues., 9/3: 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:

*** Weekly Assignment #2 – Preliminary Research Question (due Tues., 9/10) ***

**Thurs., 9/5: NO CLASS**

**Week 3 – The Scholarly Context: Reviewing Prior Studies**

**Tues., 9/10: Workshop: selecting a research topic**

**Thurs., 9/12: 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. 568-573
RECOMMENDED:
Bui, *How to Write a Master's Thesis*, ch 3

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

*** Weekly Assignment #4 – Preliminary Bibliography (due Tues., 9/24) ***

**Week 4 – The Ethical Context: Protecting Human Subjects**

**Tues., 9/17: 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 procedures

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

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

**Thurs., 9/19: Workshop: research ethics**

GUEST SPEAKER:
Tracy Cromp & Jeanne Diederich, Office of Research Integrity and Protections, Syracuse University

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: http://orip.syr.edu/humanresearch.php. Estimated duration: 2-6 hrs. *Must be completed prior to class; bring copy of completion certificate.*

**PART II: RESEARCH DESIGN**

**Week 5 – Units of Analysis & Variables**

**Tues., 9/24: 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:

*** Weekly Assignment #5 – Research Question Elaboration (due Tues., 10/1) ***

**Thurs., 9/26: Variables and relationships**

Variables
Types of variables
Relationships between variables
Formulating research questions and hypotheses

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

RECOMMENDED:
Vayda & Walters, *Causal Explanation for Social Scientists*

ADDITIONAL:

**Week 6 – Measurement and Sampling**

**Tues., 10/1: 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., 10/8) ***
Thurs., 10/3: 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:

Week 7 – Course Review
Tues., 10/8: Research design: review & discussion

Research stages
Levels and units of analysis
Variables
Measurement
Sampling

Thurs., 10/10: Mid-term examination

*** Bring pencils and an eraser ***

Week 8 – Writing Research Proposals
Tues., 10/15: Elements of a research proposal

Why write a research proposal?
Elements of a research proposal
Research funding
Community of Science (CoS)

REQUIRED:

*** Weekly Assignment #7 – Research Proposal Development (due Tues., 10/22) ***
**Thurs., 10/17: Workshop: research funding**

GUEST SPEAKER:
Jane Verostek, Moon Library

RECOMMENDED:
"ESF Grants Search" Library Guide: [http://libguides.esf.edu/grants](http://libguides.esf.edu/grants)

*** Note: Class session will be in Computer Lab (TBA) ***

**PART III: RESEARCH METHODS (Methods of Data Collection)**

**Week 9 – Overview; Survey Research Design**

**Tues., 10/22: 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)

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

ADDITIONAL:

*** Weekly Assignment #8 – Literature Review (due Tues., 10/29) ***

**Thurs., 10/24: Survey research 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's 9, 15-16
Week 10 – Survey Research Methods

**Tues., 10/29: Questionnaire construction**

- 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:

*** Weekly Assignment #9 – Survey Research Exercise (due Tues., 11/5) ***

**Thurs., 10/31: Survey research practicum**

*** Note: Class session in Computer Lab (TBA) ***

Week 11 – Field Research Methods

**Tues., 11/5: 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:

*** Weekly Assignment #10 – Participant Observation Exercise (due Tues., 11/12) ***

**Thurs., 11/7: Participant observation practicum**

Week 12 – Using Available Data

**Tues., 11/12: 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:

ADDITIONAL:

*** Weekly Assignment #11 – Available Data Research Exercise (due Tues., 11/19) ***

**Thurs., 11/14: Available data practicum**

*** Note: Class session in Computer Lab (TBA) ***

**Week 13 – Integrative Research Methods**

**Tues., 11/19: Systems and multimethod research**

Systems approaches
Mixed research methods
Applied research methods
Meta-analysis

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

RECOMMENDED:
Meadows, *Thinking in Systems*

ADDITIONAL:

**Thurs., 11/21: Research proposals – open workshop**

**THANKSGIVING BREAK**
PART IV: RESEARCH PROPOSALS

Week 14 – Student Presentations/ Discussion

Tues., 12/3
Thurs., 12/5

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 believe that you need accommodations for a disability, you may 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, Room 309 of 804 University Avenue, 315.443.4498, to schedule an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, 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.

Cellular phones

This course is intended as an educational experience. To ensure that the classroom learning environment is conducive for all, please turn your cellular phone off while class is in session. (If, due to a personal emergency, you need to maintain your phone on silent mode, please notify the instructor in advance.)

Academic integrity

Plagiarism is presenting others’ work as your own without properly acknowledging 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 use & cite others' original work, please consult writing reference texts, your instructor, or other campus resources.

Fire alarm procedures

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