EAS 641: Social Research Methods in Environment and Sustainability is oriented to students who are likely to engage in research of any kind, formal or informal, that is concerned with people and the environment. The course has been useful for those with minimal research experience as well as students who have carried out research in the past. The course is equally applicable whether you anticipate doing a thesis or dissertation, are in the throes of carrying out a study, and/or hope to gain perspective on past efforts with the research process. Neither statistics nor current involvement in research is prerequisite to the course. In the latter portion of the semester, working in teams, a small study is carried out that provides the opportunity to put many of the course’s themes to use.

Objectives

- As a consumer of others’ research: to be critical and insightful;
- As a producer of research: to acquire a sense for appropriate and inappropriate shortcuts; to learn to anticipate possible outcomes and alternative interpretations.
- To become facile in a different way of thinking about research, emphasizing "multiplism" with respect to measures, methods, settings, etc.;
- To recognize the obligations that come with doing research;
- To gain a sense for the normal frustrations inherent in the research process and for ways that the joys of discovery can be enhanced.

“Office hours”

Please see me before or after class, send an email, or call to set up a time to meet. More often than not, it will be within a day or two.
Course formats
We meet on Tuesdays and Thursdays, 11:30-1:00 pm. Generally, the Tuesday class session each week is oriented to the reading assignment. Thursdays focus on using the information, making it all too evident how much harder research is to "do" than to read about.

Readings / Discussion
This is not a class where you will sit back, relax, and hope the lectures will be enchanting. You will find that what you learn has a great deal to do with your active participation. That means that you can't just read the assigned material; you actually have to think about it. And the thinking can't be passive. Come to class with questions, with puzzles you are trying to figure out. Be involved in setting the agenda for the discussion.

There is no text; the reading assignments are on Canvas (http://umich.instructure.com).

Empirical articles
Empirical articles provide "case studies" for examining research issues. Our focus is thus on the methods and results sections of these articles.

Small groups
Our usual format for puzzling over problem sets is to meet in small groups. The groups provide the opportunity for exchanging information and for all group members to get feedback on their ideas and understanding. The effectiveness of this procedure depends on shared expectations: no one dominates, everyone should be heard, the tone must be constructive, and group members should feel free to ask for help when needed.

Small Experiments
Using a common research theme, the course includes opportunities for designing studies, collecting data, data analysis, and presentation of results. The purpose is to gain experience with various aspects of doing research, and especially with keeping the process manageable.

The mini's
There are four graded assignments, due on specified dates. The mini's require thought rather than further reading; they tend to be challenging, and possibly a little frustrating. Mini's are distributed three class periods before they are due. There is always time during the two intervening class meetings to raise any questions about the mini. Before the mini's are due we often have problem sets in class that focus on parallel issues. Class discussion about the mini's is strongly encouraged; discussion with others outside of class is not permitted. Mini's must be your own work.

Criteria for grades:
Performance on the four mini's constitutes 70% of the final grade. 15% of the grade reflects involvement in class, with respect to the readings and small group sessions. The remaining 15% is related to the Small Experiments.

Your own research
There is no requirement that you do research of your own for this course. You can, however, use the course to help with current or anticipated projects. The best way to do that is to provide a brief (a page or less) description of the project and indicate the kind of help you are seeking.
OVERVIEW OF RESEARCH

Independent & Dependent Variables; Course Logo

     (Republished by Ann Arbor: Ulrich's, 1989)
     ❸ Ch. 9: Research as intermediate technology (Pp. 197-200).
     ❸ Ch. 2: Types of variables (Pp. 32-35, 36-37)
     ❸ Conceptualization (Pp. 50-52, 54)
     ❸ Conceptual definitions; Operational definitions (Pp. 36-40)

Course Logo

1/11 ♦ Abstracts

MEASUREMENT VALIDITY

Reliability; Criterion and Content Validity

     ❸ Criteria for measurement quality (Pp. 140-145).
     ❸ Criterion-based & Content validity (Pp. 17-22).
     ❸ Components of observed score (Pp. 81-83) Reliability (Pp. 83-84)
     ❸ Table 5.1: Validity: An overview of types and measurements
     ❸ Table 5.2: Reliability: An overview of types and measurements

1/18 ∞ Measurement and validity

Construct Validity

1/23  Kaplan & Kaplan [1/9]
     ❸ Ch. 9: Research as intermediate technology (Pp. 209-217).
     (Excerpts: Pp. 1584-88; 1594-97)
     Hoyle, et al. [1/16]
     ❸ Maximizing construct validity (Pp. 33-35)
     ❸ Operational definitions are necessary but rarely sufficient (Pp. 76-79)
     ❸ Convergent validity, discriminant validity, validity and the nomological net (Pp. 87-89)
     Carmines & Zeller [1/16]
     ❸ Construct validity (Pp. 22-27)

1/25 © Mini-one due

Validity Review
RESEARCH DESIGN

Design strategies; Controls; Internal and External Validity


Table 1.1: The vocabulary of experiments (p.12)

Hoyle, et al. [1/16]

Maximizing internal validity (Pp. 36-41)


Internal validity: The third variable problem (Pp. 4-6 end of 1st paragraph)


2/1 Research in practice

True & Quasi Research Design; Factorial Designs; Interaction Effects

Ch. 11: Randomized experiments (Pp. 237-244)
Ch. 13: Nonrandomized designs (Pp. 307-312)


2/8 Different approaches to designing a study


2/13 Examining empirical articles


Mini-two (Part I) due

2/15 Toward mini-two (Part II):

RESEARCH STRATEGIES AND BASIC TOOLS

➤ Surveys, Questionnaires

  ➤ Survey research in the social sciences (Pp. 208-213)
  ➤ Refine and test questions (Pp. 223-224)
  ➤ Asking & answering survey questions: Cognitive & communicative processes (Pp. 150-152)
Bernard [1/9] Questionnaires and survey research (Pp. 228-236)
  ➤ Table 5.1 A summary of common sampling techniques (p. 118)

2/22 ◯ Mini-two (Part II) due
  ∞ Small Experiment study: Begin group project
  When does a class assignment require IRB approval? (UM policy statement)
  http://www.hrpp.umich.edu/initiative/classactivities.html

“But Spring” Break

➤ Observational methods / Coding

  ➤ “From Halcombe’s Methodological Chronicle” (Pp. 199)
  ➤ Data collection methods: Observation (Pp. 84-87)
  ➤ Collecting primary data: Observation (Pp. 238-242, 244-247)
  ➤ Learning to observe (Pp. 256-259)

3/8 Design Review
Interviews / Focus Groups / Asking questions

3/13 Patton [3/6]
- Qualitative interviewing: “From Halcolm’s Epistemological Parables” (Pp. 277-278)
- Qualitative methods (Pp. 134-138, 152)
  - Tape recording and transcription (Pp. 353-356)

3/15 Toward mini-three

Evaluation & Qualitative / Quantitative

3/20 Robson [1/30]
- Carrying out an evaluation (Pp. 180-182)
  - Evaluator’s role (Pp. 353-355)
  - Qualitative methodology: An overview (Pp. 268-269)
  - Qualitative vs. quantitative research (Pp. 7-10)
  - Friend or foe? Ethics of qualitative research (Pp.732-733)
  - Subjects and objects (Pp. 733-734)

3/22 Mini-three due
- What to do with the data?
Case Studies / Action Research

  • Box 1: Six different types of case studies (p.5)
  • Box 13: Replication, not sampling logic, for multiple case studies (p.110)
  • Box 15: The unit of analysis: A critical concept in doing case studies (p.114)
  • Action research designs
  • Introduction (Pp.1-2)

Putting the pieces together


ETHICS, IMPACT AND THE LARGER VIEW

Ethics, humaneness, and the burden of responsibility

  • Ethical problems and principles (Pp. 32-39)
  • Figure 7.3: Statement of professional an ethical responsibilities
  • Figure 7.1: Sample informed consent form
eResearch: FAQ (selected items) http://www.umich.edu/~eresinfo/errm/faq.html

4/5 ∞ Small Experiments: Presentations

4/10 ∞ Small Experiments: Presentations

4/12 ∞ Small Experiments: Presentations

"Enquiry" and Creativity

  • Models of research (Pp. 10-17)
  Available at: http://www.cs.unc.edu/~stotts/204/nohawth.html (Pp.1-4)

4/19 ⊂ Mini-last due - 5 pm
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