

V450 Research Design
Syllabus
Last update: August 24, 2015

Fall 2015

Class time: Monday and Wednesdays, 4:00-5:15 PM

Class location: School of Public Health (HPER), Room 019

Instructor: Professor Sanya Carley

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Office: SPEA 353

Office phone: 812-856-0920

Professor's office hours: Wednesday 12:00 – 2:00, and by appointment

Office Administrative Assistant: Susie Van Doren; located on the 3rd floor of SPEA

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Course Writing Tutor: Eric Martin

Course Writing Tutor's email: evmartin@indiana.edu

Overview

This course is an intensive introduction on how to conduct in-depth social science research. The course is designed to prepare students to develop their own research projects, and to understand and incorporate the elements of effective research designs. The course is a blend of research design, data management and methods, and skills development.

Course objectives

The objectives of this course are as follows:

- Prepare students to conduct their own research projects for a thesis, consulting effort, or peer-review publication.
- Develop strong capabilities in the following areas:
 - Writing a proposal
 - Conducting a literature review
 - Constructing a database
 - Managing, coding, and cleaning data
 - Describing data
- Introduce students to some of the resources available on campus to help with research efforts.
- Understand how to construct different types of research designs, and the strengths and limitations of each approach.
- Understand the differences between causality and correlation, and be able to construct a narrative about relationships.

As a result of taking this course, students will learn how to pose a research question, develop a literature review, express a theoretical foundation upon which their research will build, draft a purpose statement, gather primary and secondary data, code and clean data, estimate basic descriptive statistics, create data visuals, choose among a variety of research designs to tailor a specific research design to their data, communicate research objectives and design, and understand the main advantages and drawbacks of different research designs.

Course Style & Format:

This course is heavily participation-based and takes a learning-by-doing approach to the topic of research design. Our classroom will be an active learning workspace. While the majority of class sessions will involve some degree of lecture, many class sessions will also involve group work, class-wide or mini discussions, and hands-on activities.

This course is divided into three sections, although there is much fluidity across the sections. The first section is entitled “Getting Started: Elements of Research Design.” In this section, the course materials will introduce students to the field of research design, the research process, how to construct a research question, how to conduct a literature review, and the foundations of research inquiry. The second section, entitled “Data Acquisition and Management,” will help students understand variable construction, and gain experience with building a database, cleaning data, writing statistical code, and visualizing and interpreting data. The third and largest section of the course, “Different Research Designs,” will introduce students to each type of research design, and provide the opportunity to try out some of these designs in applied classwork and assignments. A variety of “skills development modules” are scattered across these three sections, in which the class will experiment actively with different skill sets.

Prerequisites

There are no prerequisites for this course. It is expected, however, that students have had prior exposure to statistics.

Office Hours

My office hours are on Wednesdays from noon until 2 PM, or by appointment. I fight hard to preserve these times for office hours, so I do not miss a session and leave a student waiting outside of my office. If, for some reason, I have to cancel a session, which generally only happens when I am out of town or seriously sick, I will find an alternate time and inform the class of this change. I ask that you do not drop by unexpectedly. If you have classes during my office hours and need to meet, please email me to set up an appointment for another time.

Student Responsibilities

I ask that students that take my courses abide by three rules and, in return, I will do the same:

1. Work hard.
2. Be respectful.
3. Do not complain.

Both teaching and taking a class can be far from enjoyable when just one of these rules is broken, by either students or the professor. Individual courses, and your time in school more generally, are significantly more rewarding—in both the short and, especially, the long term—if you work hard to learn the material, connect concepts, and learn and practice the skills that the course aims to impart. Respect for your peers, your professor, and yourself helps establish a positive learning environment, and working relationships that may last years, if not decades. Finally, there is nothing worse than listening to whining and complaining about a class, from either a student or a professor. Complaining affects morale and class dynamics, and makes both teaching and learning significantly more difficult. When everyone works hard and respects each other, however, there is little need or inspiration for complaint.

There are also a number of more concrete student responsibilities that will help you succeed in this course, including the following:

- Active participation in this course is required.
- All readings and pre-class assignments must be completed **before** the class period in which the reading is due.
- Students are expected to attend all class sessions. Plenty of material and exercises will be covered during class sessions that one cannot simply extract from their readings. Thus it is necessary for students to be active learners and participate in all class sessions.

- Students are expected to refrain from checking email, texts, or other social media during class hours. I allow computers in my classroom but find it personally insulting when a student surfs the internet, checks email, or texts during class sessions. If it is too much of a temptation to check e-communication during class, then please do not bring any electronic devices into the classroom.

Required Texts

There is one required textbook for this course: O'Sullivan, E., Rassel, G. R., Berner, M. 2007. *Research Methods for Public Administrators*, 5th Edition. Pearson. Any reading assignment from this book is hereafter abbreviated as "RMPA".

In addition to the assigned readings from this textbook, several other excerpts or chapters are assigned from other textbooks throughout the course of the semester, as listed in the syllabus and available for download on the class' Canvas website.

Assignments

This course requires many assignments in order to help students gain the experience necessary to conduct their own research. There will be three types of assignments in this class: homework assignments, pre-class exercises, and a final proposal.

There are seven homework assignments. Six of them are assigned on specific dates, as indicated in the course schedule table. One assignment is "floating," that is, assigned on the first day of class and due whenever a student completes it. Each student needs to complete his or her homework assignments individually. The format in which the assignment must be submitted (e.g., electronic or printed/handwritten) will be outlined on each homework prompt.

The pre-class exercises will require students to research or prepare something small before a specific class session. For example, the class session on August 26th will require students to make a list of topics that are of personal interest (e.g., renewable energy development; food insecurity in America; campaign finance reform), and bring this list with them to class. The class activities will use all students' pre-class exercises so it is especially important that students complete these exercises. I will randomly collect your pre-class exercise folder.

The final proposal is a group project in which students will write a full research proposal and present it to the rest of the class. This proposal will contain elements of the many topics covered throughout the course, and help students gain experience with brainstorming and drafting a formal research proposal. I have set up informal due dates for the various elements of this assignment in the course schedule. I do not ask that students submit their materials on the due dates outlined, but rather meet these dates as a group and continue to make progress on their proposal without any graded feedback. If students wish for feedback throughout the process, however, I would be happy to provide it in person during office hours.

Exams

Because this class is so assignment-heavy, there will only be one exam: a cumulative final. The final is scheduled for December, 14th, from 5-7 PM.

Grades

Homework assignments will be graded either on a typical letter scale, if the work is in written narrative format, or on a numerical scale if the elements of the assignment are easily quantifiable (i.e., assignments are itemized and a point distribution is assignable to each component).

Students' written work will be assessed according to the following criteria:

- Ability to answer assigned questions or ability to relate the topic back to course readings and information—Are you answering the question that was asked? Have you covered all of the assigned

readings and course materials? Is it evident that you read and understood the course materials? Are you able to apply the theories and ideas covered in the readings to other topics?

- Degree of critical thinking and analysis.
- Clarity of argument and writing – Are you writing with concrete words and precise statements? Have you eliminated all vagaries from your thoughts and writing? Have you expressed your observations and ideas so clearly and concretely that there is no possibility of my misunderstanding them?
- Coherence of argument and writing—Is your argument coherent, well supported with evidence, and logically consistent? Are your statements relevant to the course materials and to your argument?
- Grammar and composition—Correct spelling, grammar, and punctuation.

A perfect assignment demonstrates perfection along all five dimensions. For homework assignments, the first dimension—ability to answer question asked—is the most important. For the final class proposal, all five elements are weighted equally.

If you would like help with your written work, I encourage you to work with our class writing tutor.

All pre-class exercises will be graded with a check system:

- Check-plus when the full task was completed, and clearly completed with thought.
- Check if the task was completed or partially completed, but it appears as though little time or effort was devoted to the task.
- Check-minus if the task was not completed.

Students should keep all pre-class exercises in a designated folder and the instructor will randomly collect and then return this folder throughout the course of the semester.

Any assignment that is submitted to the instructor but is also submitted to another class will be *automatically assigned a failing grade*. Similarly, any assignment that I find has any plagiarized sentences or clauses from other sources, including your peers' written work, will also automatically receive a failing grade.

One's participation grade is based primarily on the quality of his or her contributions to the discussion, as well as quantity of participation, attendance, and punctuality.

The grade distribution for this course is as follows:

Homework assignments (7 at 5% each): 35%
Pre-class exercises: 10%
Research proposal: 20%
Research proposal presentation: 5%
Final exam: 20%
Participation: 10%
Total: 100%

I will always consider and respect grade change requests, whether I made a grading mistake or if you simply believe that your work was not evaluated fairly. If you want to contest a grade, you must explain in written form—submitted to me as a Microsoft Word document either printed or attached to an email—why you believe that I should reconsider the grade. Please be respectful in these requests and I will be happy to consider your petition. If you are not respectful, I will not consider the petition.

Academic Honor Code

I will not tolerate violations of the student honor code. I have pasted the section of the code on academic misconduct below, and mandate that all students comply with the code or otherwise confront potentially severe penalties for noncompliance. I have bolded the issues that I have encountered most frequently during my career. For additional reading, please refer to the code: <http://www.iu.edu/~code/code/index.shtml>

Begin code quotation here:

Academic misconduct is defined as any activity that tends to undermine the academic integrity of the institution. The university may discipline a student for academic misconduct. Academic misconduct may involve human, hard-copy, or electronic resources.

Policies of academic misconduct apply to all course-, department-, school-, and university-related activities, including field trips, conferences, performances, and sports activities off-campus, exams outside of a specific course structure (such as take-home exams, entrance exams, or auditions, theses and master's exams, and doctoral qualifying exams and dissertations), and research work outside of a specific course structure (such as lab experiments, data collection, service learning, and collaborative research projects). The faculty member may take into account the seriousness of the violation in assessing a penalty for acts of academic misconduct. The faculty member must report all cases of academic misconduct to the dean of students, or appropriate official. Academic misconduct includes, but is not limited to, the following:

1. *Cheating*

Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.

- a. **A student must not use external assistance on any “in-class” or “take-home” examination, unless the instructor specifically has authorized external assistance.** This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.
- b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.
- c. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.
- d. **A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.**
- e. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.
- f. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.
- g. **A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom he work is being submitted.**
- h. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

2. *Fabrication*

A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.

3. *Plagiarism*

Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered “common knowledge” may differ from course to course.

- a. **A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.**
- b. **A student must give credit to the originality of others and acknowledge indebtedness whenever:**

- 1. directly quoting another person's actual words, whether oral or written;**
- 2. using another person's ideas, opinions, or theories;**
- 3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;**
- 4. borrowing facts, statistics, or illustrative material; or**
- 5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment**

4. *Interference*

A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.

5. *Violation of Course Rules*

A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.

6. *Facilitating Academic Dishonesty*

A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

Course Schedule

Section I. Getting Started: Elements of Research Design

Mon, August 24th: Course overview and discussion of syllabus

Readings: Syllabus

Pre-class exercise: None

Wed, August 26th: The research design process: where to begin?

Readings: Chapter 1, RMPA

Optional reading: Ang, S. H. 2014. Research Design for Business & Management. Sage Publications Ltd. Chapter 3. The Research Question.

Pre-class exercise: Prepare a list of topics and issues of interest to you that you might like to research some day. There is no set number for the list but aim to come up with 2-6.

Friday, August 28th: Scott Long's WIM talk on Workflow and Reproducibility; SSRC, Woodburn Hall

Mon, August 31st: Skills development module: Navigating the library system and conducting a literature review

Guest lecturer: Christina Sheley, Head of Business/SPEA Information Commons

Reading: <http://writingcenter.unc.edu/handouts/literature-reviews/>

And the "Policy Literature" tab in the V450 Research Design Library Guide:

<http://iub.libguides.com/V450Research>

Optional reading: Ang, S. H. 2014. Research Design for Business & Management. Sage Publications Ltd. Chapter 4. Conducting a Literature Review.

Pre-class exercise: Find a few articles that contain literature reviews and read the reviews; document which articles' reviews you read.

**Note: bring laptop or equivalent with you to class

Assignment #1 is distributed. Due date: 9/14/15

Wed, September 2nd: Theory and categories of design

Readings: Chapter 2, RMPA; Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. Pages 61-63.

Pre-class exercise: None

Wed, September 9th: Skills development module: Writing Workshop

Guest lecturer: TBD

Reading: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. Pages 77-92.

Pre-class exercise: None

Mon, September 14th: Perspectives on Epistemology

Readings: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. Chapter 1. Selection of a Research Approach.

Pre-class exercise: None

Assignment #1 due

Wed, September 16th: Directionality, causality, and comparison groups

Readings: de Vas, R. 2001. Research Design in Social Research. Sage Publications Ltd. Chapter 3. Causation and the Logic of Research Design.

Optional readings: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. pp. 171-174 ("Experiment and group designs" in Canvas folder)

Pre-class exercise: 1) Choose a research topic of interest. 2) Define a research question related to that topic. 3) Draw a directional model that may possibly explain the relationship among variables related to this topic.

Assignment #2 is distributed. Due date: 9/28/15

Mon, September 21st: Establishing validity

Readings: Chapter 3, RMPA, only pages 56-68;

Optional reading: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. pages 174-177 (“Validity threats” in Canvas folder)

Pre-class exercise: None

Wed, September 23rd: Ethics in research

Readings: Chapter 8, RMPA

Pre-class exercise: Construct a scenario in which a researcher encounters an ethical conundrum. Try to make the situation as difficult as possible. In a few sentences, describe this situation. Do not resolve the issue in your write-up.

Section II. Data Acquisition and Management

Mon, September 28th: Skills development module: Data management

Class location: SPEA Computer Lab, BLBH 107

Readings: Hamilton, L. C. 1998. Statistics with Stata 5. Chapters 1 and 2 (skim both as necessary for your comfort level with Stata).

Pre-class exercise: None

Assignment #2 due

Wed, September 30th: Skills development module: Data management

Class location: SPEA Computer Lab, BLBH 107

Readings: Hamilton, L. C. 1998. Statistics with Stata 5. Chapters 1 and 2 (skim both as necessary for your comfort level with Stata).

Pre-class exercise: None

Mon, October 5th: Working with secondary data

Readings: Chapter 9, RMPA

Pre-class exercise: Identify at least one source of secondary data and document what needs to be done to download and compile data into a dataset.

Progress toward final proposal: form research groups

Assignment #3 is distributed. Due date: 10/14/15

Wed, October 7th: Measuring and defining variables

Readings: Chapter 4, RMPA

Pre-class exercise: None

Mon, October 12th: Sampling

Readings: Chapter 5, RMPA

Pre-class exercise: None

Progress toward final proposal: Research question and purpose are established. Begin literature review.

Wed, October 14th: Visualizing and manipulating data

Readings: Chapter 10, RMPA

Pre-class exercise: Search through journal articles to find a visual that you find effectively conveys important information. Print the page and bring it into class.

Assignment #3 due

Assignment #4 distributed. Due date: 10/28/15

III. Different Research Designs

Mon, October 19th: Experimental design

Readings: Chapter 3, RMPA, only pages 68-77.

Optional readings: de Vas, R. 2001. Research Design in Social Research. Sage Publications Ltd. Chapter 4. Experimental Designs;

de Vas, R. 2001. Research Design in Social Research. Sage Publications Ltd. Chapter 5. Issues in Experimental Design.

Pre-class exercise: Find an article that employs a randomized experiment. Take notes on how the experiment is designed. Can you identify any validity threats in the author's research design? Bring the article and your notes about it into class.

Wed, October 21st: Quasi-experimental design

Readings: Chapter 3, RMPA, only pages 77-94.

Pre-class exercise: Find an article that studies a social science research topic and makes strong causal claims. Identify the premise upon which the author(s) claim or justify such causality. Bring the article and your notes about it into class.

Mon, October 26th: Optional proposal group working session

Wed, October 28th: Statistical toolbelt

Guest lecturer: Stephanie Dickinson, Senior Consultant and Managing Director, IU Statistical Consulting Center, Indiana University

Class location: Social Science Research Commons, Woodburn Hall

Readings: Chapter 12, RMPA

Pre-class exercise: None

Assignment #4 due

Mon, November 2nd: Natural experiments and the continuum of plausibility

Readings: Dunning, T. 2008. Improving Causal Inference: Strengths and Limitations of Natural Experiments. *Political Research Quarterly* 61(2): 282-293.

Pre-class exercise: None

Assignment #5 distributed. Due date: 11/11/15

Progress toward final proposal: Literature review drafted

Wed, November 4th: Collecting primary data and contacting subjects

Readings: Chapter 6, RMPA; skim: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. Pages 185-194.

Pre-class exercise: Brainstorm a couple of research questions that are either: 1) only answerable via primary data; or 2) one may be able to address via secondary data but directly asking subjects about the topic would create a more complete "picture".

Mon, November 9th: Survey design

Readings: Chapter 7, RMPA

Pre-class exercise: None

Wed, November 11th: Optional proposal group working session

Assignment #5 due

Progress toward final proposal: Research approach identified and details on data, variables, measurement, testing validity, etc. are in progress

Mon, November 16th: Skills development module: Survey designing

Readings: Choose one of the survey instruments provided to you on Canvas and read through the full instrument.

Pre-class exercise: Identify which survey instrument you chose; find 2-4 of the most important question in the survey instrument and comment on their framing (strengths, weaknesses, etc.)

Assignment #6 distributed. Due date: 12/7/15

Wed, November 18th: Conducting case studies

Readings: de Vas, R. 2001. Research Design in Social Research. Sage Publications Ltd. Chapter 13. Case Study Design

Optional reading: de Vas, R. 2001. Research Design in Social Research. Sage Publications Ltd. Chapter 14. Issues in Case Study Design.

Pre-class exercise: None

Mon, November 30th: Skills development module: Analyzing qualitative data

Readings: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. Pages 194-204.

Pre-class exercise: None

Wed, December 2nd: Mixed methods

Readings: Creswell, J. W. 2013. Research Design: Qualitative, Quantitative, and Mixed-Methods Approaches. pp. 220-221 (“Mixed methods” in Canvas folder)

Pre-class exercise: None

Mon, December 7th: Proposal presentations

Readings: None

Pre-class exercise: None

Assignment #6 due

Wed, December 9th: Proposal presentations

Readings: None

Pre-class exercise: None

Final research proposals due

Mon, Dec 14th: Final exam, 5-7 PM

| Session | Date | Topic | Assignment due | Progress toward final proposal |
|---------|----------------|--|--|--|
| 1 | Mon, August 24 | Course overview and discussion of the syllabus | | |
| 2 | Wed, August 26 | The research design process: Where to begin? | | |
| 3 | Mon, August 31 | Navigating the library system and conducting a literature review | | |
| 4 | Wed, Sept 2 | Theory and categories of design | | |
| 5 | Wed, Sept 9 | Writing workshop | | |
| 6 | Mon, Sept 14 | Perspectives on Epistemology | Assignment #1 | |
| 7 | Wed, Sept 16 | Directionality, causality, and comparison groups | | |
| 8 | Mon, Sept 21 | Establishing validity | | |
| 9 | Wed, Sept 23 | Ethics in research | | |
| 10 | Mon, Sept 28 | Data management | Assignment #2 | |
| 11 | Wed, Sept 30 | Data management | | |
| 12 | Mon, Oct 5 | Working with secondary data | | Groups formed |
| 13 | Wed, Oct 7 | Measuring and defining variables | | |
| 14 | Mon, Oct 12 | Sampling | | Research question established |
| 15 | Wed, Oct 14 | Visualizing and manipulating data | Assignment #3 | |
| 16 | Mon, Oct 19 | Experimental design | | |
| 17 | Wed, Oct 21 | Quasi-experimental design | | |
| 18 | Mon, Oct 26 | Optional proposal group working session | | |
| 19 | Wed, Oct 28 | Statistical toolbelt | Assignment #4 | |
| 20 | Mon, Nov 2 | Natural experiments and the continuum of plausability | | Literature review drafted |
| 21 | Wed, Nov 4 | Collecting primary data and contacting subjects | | |
| 22 | Mon, Nov 9 | Survey design | | |
| 23 | Wed, Nov 11 | Optional proposal group working session | Assignment #5 | Approach identified and details laid out |
| 24 | Mon, Nov 16 | Survey designing | | |
| 25 | Wed, Nov 18 | Conducting case studies | | |
| 26 | Mon, Nov 30 | Analyzing qualitative data | | |
| 27 | Wed, Dec 2 | Mixed methods | | |
| 28 | Mon, Dec 7 | Proposal presentations | Assignment #6 | |
| 29 | Wed, Dec 9 | Proposal presentations | Final proposal; Floating assignment | Proposal submitted |
| | Mon, Dec 14 | Final exam | | |