



Pitt Education

Doctor of Philosophy (PhD) in Education

EDUC 3103: Quantitative Methods II Spring 2021

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Office Hours: By appointment – <https://calendly.com/shanycecampbell/office-hours>

Synchronous Meetings: Tuesdays: 8:55a-11:35a
Zoom: <https://pitt.zoom.us/j/94917526754>

Syllabus version: v2

LAND ACKNOWLEDGEMENT

I want to respectfully acknowledge that we gather to learn in the ancestral and unceded territory (1776) of the Clovis, Haudenosaunee (Iroquois), Lenape, Shawnee, and other peoples. As a community, I want us to wrestle and actively fight for the continued injustice experienced by these Nations, including genocide, ethnic cleansing, and racism. Remember, we get to live, work, study, play here because these Nations care(d) for the land.

Sources: <https://usg.maps.arcgis.com/apps/webappviewer/index.html?id=eb6ca76e008543a89349ff2517db47e6>,
<https://native-land.ca>, <https://www.pittsburghbeautiful.com/2018/03/07/history-pittsburgh-part-1-beginning/>

MISSION/VISION OF PITT'S SOE

We ignite learning. We strive for well-being for all. We teach. We commit to student, family, and community success. We commit to educational equity. We advocate. We **work for justice.** We cultivate relationships. We forge engaged partnerships. **We collaborate.** We learn with and from communities. **We innovate and agitate. We pursue and produce knowledge.** We research. We disrupt and transform inequitable educational structures. **We approach learning as intertwined with health, wellness, and human development. We address how national, global, social, and technological change impacts learning.** We shape practice and policy. **We teach with and for dignity. We think. We dream.** We lead with integrity. We are the School of Education at the University of Pittsburgh.

*The text in bold are parts of the mission/vision that will be actualized in this course.

COURSE OVERVIEW & GOALS

Course Overview

The primary focus of this course is multiple regression analysis for continuous and binary outcomes. The pedagogical strategy will be to learn statistical analysis by doing statistical analysis. We will rely primarily on the Stata statistical software package. Over the semester, we will examine data sets to address substantive research questions by fitting increasingly sophisticated regression models. In building an understanding of how to use these methods in practice, we will critically discuss the regression model's purpose, mathematical representation, assumptions, implementation, interpretation, presentation, relationship to other statistical methods, research design implications, and limitations.

Course Goals

- Able to critique quantitative methods and understand the usefulness of the method
- Understand and implement the basic concepts of multiple regression
- Proficiently use of Stata
- Able to develop a research project that incorporates multiple regression from a critical perspective

THE LEARNING SPACE

Team-based learning

This course will feature a modest amount, if any, of traditional lecturing during our “in-class” time. You will be expected to learn the basic content of the readings before class so that the majority of class time can be dedicated to discussion, group work, and hands-on demonstrations, which are more likely to facilitate successful learning. We will work in teams throughout the semester to maximize active engagement with the course material. By working in teams, you will develop communication and collaboration skills and assist each other in understanding and applying concepts successfully.

Fostering a Brave Community Space

We are here for a positive educational experience and to be active, not passive learners. It is our responsibility as educators and learners to engage by being prepared, asking questions, sharing our thoughts and ideas, and making this class meaningful and useful.

As we engage, it is important to recognize that our beliefs, values, and ways of knowing draw from our own lived experiences, which may differ from others in this space. We should be mindful of the partial lenses that each of us brings and be open to engaging knowledge and experiences beyond our understanding of the world and our place in it. We should learn from one another and challenge different ideas, even when difficult, and be open to entering uncomfortable places while working collectively to advance our understanding. Therefore, **this course is not a safe space but rather a brave space for at least two reasons.** First, rarely is a classroom ever simultaneously safe for everyone. Second, too often, “safe spaces” become places where racism, classism, sexism, homophobia, and other forms of oppression go unchecked under the banner of “being nice” and “being safe.”

IMPORTANT COURSE TEXTS

This course uses Canvas to distribute course materials, communicate online, and submit assignments.

Required Texts:

- Agresti, Alan & Finlay, B. (2018). *Statistical Methods for the Social Sciences*, Fifth Edition. Upper Saddle River, NJ: Pearson Prentice Hall.
- Chen, X., Ender, P., Mitchell, M. and Wells, C. (2003). *Regression with Stata*, from <https://stats.idre.ucla.edu/stata/webbooks/reg/>

Recommended Texts:

- Acock, Alan (2012). *A Gentle Introduction to Stata*, Revised Third Edition. College Station, TX: Stata Press.
- Allison, Paul (1998). *Multiple Regression: A Primer*. Thousand Oaks, CA: Pine Forge.

STATA Statistical Software/Consulting

We will use Stata statistical software in this course, which is freely available to students. Please install Stata 16 and verify that you can run it successfully as soon as possible. Please make sure to do it as soon as you can so you can get help before the first Stata workshop if you run into problems. If you have trouble getting Stata installed, please contact IT at 412-624-HELP (4357) or helpdesk@pitt.edu.

Install Stata 16 SE for Mac or Windows here:

<https://software.pitt.edu/Home/SoftwareCategory?categoryId=19>

To learn how to correctly set your working directory and open data in Stata, please consult the guide provided at the end of this syllabus. If you have additional problems, please consult the following resources **in this order**:

1. Stata help — Simply type “help <command>” for any Stata command in the command window and the help file for that command will appear. For more help, click on the linked title of the help file (e.g., “[R] summarize”) to open a PDF of the relevant section of the Stata manual. The manual provides more extensive discussion and examples in the “Remarks” section, which appears below the text from the online help file.
2. Google for answers — extensive resources are now available online. Someone has probably asked the same question in the past. UCLA’s Stata resources site (<https://stats.idre.ucla.edu/stata/>) is EXTREMELY helpful. See also the Stata YouTube channel for demonstration videos.
3. Stata has provided several resources that may help answer your question. Please check out, <https://www.stata.com/links/resources-for-learning-stata/>
4. Make an appointment to meet with me. When you do, please send a precise description of your problem along with your data, .do file, and a screenshot or Stata output, which helps me more quickly diagnose the problem.

COURSE ASSIGNMENTS

Collaboration is central in this course and serves as a way to foster deep learning and leveraging expertise. This course has three assignments: 1) an article critique, 2) problem set(s), and 3) a virtual poster session. Two of the three projects are collaborative.

Article Critique/Review (20%)

The article critique will familiarize you with research processes and academic writing. Select a quantitative research article from a recent (within the past 5 years) issue of an academic journal in any area of education. The article must contain (1) clear hypotheses or research questions and (2) statistical analyses (i.e., inferential statistics, statistical significance).

The Why: As an education scholar, you will be asked to review manuscripts for several publications. This assignment also provides an opportunity for you to demonstrate your content knowledge learned in the course. **This is the only individual assignment** and that is only because in the “real world” manuscript reviews are done individually.

Problem Set (35%) -

You will complete 1-2 problem sets throughout the course to facilitate your learning process.

The Why: I want to be sure you know your stuff! Moreover, understanding the key concepts will be useful in the other course assignments.

Virtual Poster Session (45%)

The virtual poster session is an opportunity to apply what you have learned throughout the course to examine an education-related research topic. Hence, it is one of the best ways to solidify your understanding and application of multiple regression. The project also allows you to examine an issue that piques your intellectual curiosity while fostering the importance of a critical perspective in conducting research. You will choose the research question(s); decide on the dataset and conduct the analyses. The research topic must align with the School of Education’s mission/vision statement.

The Why: As an education scholar, you will hopefully present at local and national conferences. Often one of the ways you can share your intellectual contribution to the field is through poster presentations. Therefore, this assignment provides an opportunity to engage in a career-related experience.

Philosophy on Grades

With over 17+ years of schooling, I understand that grades are important to most students. We have been conditioned to believe that they matter and actually measure something. We also know cases where they don’t mean much and are often inflated. Here’s my perspective: At the graduate level, letter grades should be the least of your concern. The majority of your attention should be on learning and mastery (at a basic level) of the content and developing professional networks with your peers.

Note my positionality...I came from an institution where we earned L, P, and H’s as letter grades (i.e. low pass, pass, and high pass), which forced me even more so not to care much about the grades because as we often said “a P equaled a Ph.D.”

ADDITIONAL RESPONSIBILITIES AND EXPECTATIONS

Zoom Etiquette. Zoom is a real thing in our lives now. Here are some expectations around zoom to minimize distractions and the flow of our time together:

Cameras: Please turn off your camera if you need to move around or you are interrupted by someone and need to engage. I tend to participate unmuted to humanize the virtual space (you can hear my ums, ahhs, and yesssss); however, this requires an environment that is conducive to that kind of set up. If you are in a quiet environment and would like to stay unmuted, feel free. Otherwise, please keep yourself muted until you are ready to contribute to the conversation. We will use zoom's hand-raise feature to reduce talking over people. Disruptive people will be asked to temporarily leave the zoom (or will be removed from the room) and return when you can contribute to the conversation without major disruptions.

The Chat Feature: Only post chat messages relevant to the discussion. This is not a space to discuss the last episode of This is Us. Please try to minimize sidebar conversations, this is a communal learning space, and multi-tasking is a myth, so expecting people to read the chat while being present in the larger class discussion is hard if not impossible. Note: I have not mastered the ability to watch the chat while engaging with the full groups, so I will probably not be looking at the chat often.

Capturing Information: During the zoom sessions, **DO NOT** video/audio record or take pictures, screenshots, snapshots, etc. for any reason. Any slides or shared screen documents can be made available just by asking. Violations will result in course completion consequences.

CREDITS

Parts of this syllabus are borrowed from Drs. Lindsay Page, Derek A. Houston, Brendan Nyhan