

# Research Methodology

PUBL 600

UMBC School of Public Policy

Fall 2018

Thursdays 7:10– 9:40PM

Room: Physics 107

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## **Blackboard and UMBC Email:**

I use Blackboard to post class materials and to send emails to the class. Emails sent via Blackboard will go to your UMBC email account. If you use another email as your primary account, you have the option of automatically forwarding your UMBC email to that account.

## **Campus Text Message Alert System:**

It is a good idea to subscribe to UMBC's cell phone alert system. This system will send you a text message in the event of an emergency or class cancellations due to weather or other circumstances. You can sign up at <http://my.umbc.edu/go/alerts>

## **Disability Accommodations:**

Should you need services or accommodations due to a disability to fully participate in class, please speak with me or contact the Office of Student Support Services at <http://sss.umbc.edu/>

## **Inclusive Excellence:**

From the UMBC Vision statement: "Our UMBC community redefines excellence in higher education through an inclusive culture that connects innovative teaching and learning, research across disciplines, and civic engagement. We will advance knowledge, economic prosperity, and social justice by welcoming and inspiring inquisitive minds from all backgrounds". This course benefits from diverse perspectives and viewpoints, and it is the expectation that such perspectives will be encouraged and valued.

### **Course Description and Rationale:**

Research provides the foundation for informed public policy making. This class is designed to provide you with an introduction to research methodology, from the basics of research design to advanced methods for causal inference. This course provides a foundation for further study of research methodology. It prepares students for future courses including PUBL 604, 607, 608, and 611. By design, many topics will be covered at a foundational level; however, by the end of the course you will be prepared to evaluate the quality of existing research and propose studies of your own to address questions of interest. This course is designed to allow you to both understand and perform important research techniques. For instance, we will not only study sampling and understand the value of different types of sampling, but we will also learn how to implement sampling techniques through statistical software.

### **Format and Procedures:**

This course uses a mix of lecture, active-learning strategies, small group work, and tutorial style hands-on activities.

### **Course Objectives and Student Learning Outcomes:**

Each of the specific course objectives below connects to the School of Public Policy Learning Outcomes:

LO-1: Understand and apply the logic of policy analytic thinking

LO-2: Comprehend and make use of relevant social science research, theories, and concepts.

LO-3: Understand and be able to effectively use appropriate methodologies and quantitative and qualitative research techniques

By the end of this course you should be able to:

- Distinguish between and identify different approaches to public policy research (quantitative/qualitative, descriptive/causal, theory testing/theory forming, etc.) and discuss when they are or are not appropriate for a research question (LO-2; LO-3)
- Relate public policy research to public policy making and implementation (LO-1; LO-2)
- Identify the steps in the research process and their purpose (LO-2; LO-3)
- Understand and apply appropriate approaches to technical issues such as sampling, measurement, and study validity (LO-2; LO-3)
- Evaluate existing research for the merits of its research design (LO-2; LO-3)
- Design a research plan for addressing questions of interest (LO-2; LO-3)
- Access and perform basic data cleaning tasks of quantitative data in Stata (LO-3)
- Identify key ethical issues in conducting research and be able to discuss their importance (LO-2; LO3)

Additionally, these course objectives attend to UMBC's defined functional competencies of oral and written communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competence, and information literacy.

**Course Requirements:**

Attendance and participation are essential components for your success in this class. I expect students to attend all classes, be punctual, and come to class having completed readings and assignments. You are allowed to miss one class without penalty. Any unexcused absences beyond that will result in a 5% deduction of your final grade. In either case, please let me know before class if you cannot be in attendance.

Student learning will be assessed through several assignments. Most weeks, students will complete a “journal assignment” in which they read a primary research article identifying and evaluating components of its methodology. Some weeks, students will apply the concepts taught to actual data through “Stata exercises”. Cumulative learning will be assessed through exams. Finally, the culminating course project involves the development of a research proposal. Assignment descriptions for all assignments can be found on Blackboard. Course assignments and their respective percentage of the course grade are shown below:

Journal assignments	20%
Stata exercises	20%
Mid-term exam	20%
Research proposal	40%

**Readings:**

The primary readings for this course include textbook chapters and primary journal articles. Journal articles will generally be available through Blackboard.

Remler, Dahlia K. and Gregg Van Ryzin (2014). *Research Methods in Practice: Strategies for Description and Causation*. Thousand Oaks, CA: Sage Publications.

**Software:**

As policymakers, policy analysts, and researchers it is important that you not only understand the core components of research design but that you can also apply them in your work. To this end, I will be incorporating a basic introduction to data analysis into the course. This way, you will not only know why a random sample is useful but you will be able to generate a random sample of school districts, hospitals, cities, or some other unit of analysis. We will conduct data analysis in Stata. Stata is now available for free to all UMBC graduate students. Students are expected to have Stata installed on a laptop and should regularly bring a laptop to class. Details and download instructions are available here: <https://wiki.umbc.edu/display/faq/Software>

**Grading Scale:**

93 to 100 A  
 90 to <93 A-  
 87 to <90 B+  
 83 to <87 B  
 80 to <83 B-

77 to <80 C+  
 73 to <77 C  
 70 to <73 C-  
 67 to <70 D+  
 63 to <67 D  
 60 to <63 D-  
 <60 Not passing

### **Academic Integrity:**

Academic Misconduct means Cheating, Fabrication, Facilitating Academic Misconduct, Plagiarism, or Dishonesty by a student.

- Cheating means using or attempting to use unauthorized material, information, study aids, or another person's work in any academic exercise.
- Fabrication means falsification or invention of any information or citation in an academic exercise.
- Facilitating academic misconduct means helping or attempting to help another student commit an act of academic misconduct.
- Plagiarism means knowingly, or by carelessness or negligence, representing as one's own, in any academic exercise, the intellectual or creative work of someone else.
- Dishonesty means lack of truthfulness or sincerity when interacting with the faculty member regarding an academic exercise.

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory.

UMBC Faculty Senate (February 13, 2001)

### **Behavioral Expectations:**

I expect students to be in attendance, come to class having completed assignments and readings, and to treat other classmates with respect.

### **Suggestions for Success:**

This course is work intensive with a large number of deliverable assignments. I recommend that students be attentive to the syllabus, begin assignments early, work collaboratively with their classmates, and seek additional help from the instructor when needed. My office door is always

open to students and my cell phone number along with my email are on the syllabus. If you are confused, ask!

*Note: I may change components of this syllabus (timing, assignments, readings) as necessary to meet the interests of students, time constraints of the class, or pedagogical need.*

Week	Topic	Readings	Homework Due
1 (Aug 30 <sup>th</sup> )	<b>Introduction to Research</b> Course overview and introductions Defining research Quantitative vs. qualitative Descriptive vs. causal Methods matter	Readings <ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 1 “Research in the Real World” pages 1-16</li> </ul>	
2 (Sep 6 <sup>th</sup> )	<b>Anatomy of a Research Proposal/Report</b> Policy problems versus areas Topic Purpose Problem Question Sections of a Research Report Literature Reviews	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 17 Pages 530-543</li> <li>• Curran, F. C., &amp; Kellogg, A. T. (2016). Understanding Science Achievement Gaps by Race/Ethnicity and Gender in Kindergarten and First Grade. <i>Educational Researcher</i>, 45(5), 273-282.</li> <li>• Curran, F. C. (2016). The State of Abstracts in Educational Research. <i>AERA Open</i>, 2(3), 1-9.</li> </ul>	Journal Assignment #1 - Curran
3 (Sep 13 <sup>th</sup> )	<b>Ethics of Research</b> Tuskegee Syphilis Stanford prison experiment LaCour Belmont Report IRB	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 1 pages 17-20 and Chapter 16 pages 517-525</li> <li>• New Yorker: How a gay-marriage study went wrong</li> <li>• Irregularities in LaCour: pages 1-3</li> <li>• Belmont Report</li> </ul>	Research Proposal: Problem statement

4 (Sep 20 <sup>th</sup> )	<b>Theoretical Frameworks and Causal Models</b> Theories Models Variables (independent, dependent, mediator, moderator)	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 2 “Theory, Models, and Research Questions”</li> <li>• Drake, T. A. (2014). The Effect of Community Linguistic Isolation on Language-Minority Student Achievement in High School. <i>Educational Researcher</i>, 43(7), 327-340.</li> </ul>	Journal Assignment #2 - Drake
5 (Sep 27 <sup>th</sup> )	<b>External Validity and Sampling</b> Population versus sample Generalizability Non-probability sampling Probability sampling (random sample, stratified, clustered) Oversampling Weighting	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 5 “Sampling”</li> </ul>	Stata Exercise 1 – Opening data  Research Proposal – Annotated bibliography
6 (Oct 4 <sup>th</sup> )	<b>Measurement</b> Conceptualization and operationalization Scales Latent versus manifest variables Validity versus reliability Categorical versus continuous variables	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 4 “Measurement”</li> <li>• Fox, L., Wimer, C., Garfinkel, I., Kaushal, N., &amp; Waldfogel, J. (2015). Waging war on poverty: Poverty trends using a historical supplemental poverty measure. <i>Journal of Policy Analysis and Management</i>.</li> </ul>	Journal Assignment #3 - Fox  Stata Exercise 2 - Sampling

7 (Oct 11 <sup>th</sup> )	<b>Secondary Data Analysis</b> Structures of data Levels of data Time dimensions of data Data sources	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 6 “Secondary Data”</li> <li>• <a href="http://www.icpsr.umich.edu">www.icpsr.umich.edu</a></li> </ul>	Stata Exercise 3 – Variable types (continuous, binary, categorical) and generating new variables
8 (Oct 18 <sup>th</sup> )	<b>Mid-Term Exam</b>		
9 (Oct 25 <sup>th</sup> )	<b>Internal Validity and Randomized Experiments</b> Causation versus correlation Requirements Bias and endogeneity Experiments	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 11 “Strategies for Causation”</li> <li>• Remler and Van Ryzin: Chapter 14 “Randomized Experiments”</li> <li>• Taubman, S. L., Allen, H. L., Wright, B. J., Baicker, K., &amp; Finkelstein, A. N. (2014). Medicaid increases emergency-department use: evidence from Oregon's Health Insurance Experiment. <i>Science</i>, 343(6168), 263-268.</li> </ul>	Journal Assignment #4: Taubman  Stata Exercise 4: Measures of variables (mean and standard deviation and graph)
10 (Nov 1 <sup>st</sup> )	<b>Correlational Studies</b> Linear regression with control variables	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 12 “Observational Studies”</li> <li>• Remler and Van Ryzin: Chapter 13 “Using Regression to Estimate Causal Effects”</li> <li>• Claessens, A., Engel, M., &amp; Curran, F. C. (2015). The effects of maternal</li> </ul>	Research Proposal: Literature review  Journal Assignment #5: Claessens

		depression on child outcomes during the first years of formal schooling. <i>Early Childhood Research Quarterly</i> , 32, 80-93.	
11 (Nov 8 <sup>th</sup> )	<b>Quasi-experiments</b> Diff-in-Diff	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 15 “Natural and Quasi Experiments”</li> <li>• Angrist and Pishke – Mastering Metrics – Chapter 5</li> <li>• Long, B. T. (2004). How do financial aid policies affect colleges? The institutional impact of the Georgia HOPE scholarship. <i>Journal of Human Resources</i>, 39(4), 1045-1066.</li> </ul>	Journal Assignment #6: Long Stata Exercise 5: Regression
12 (Nov 15 <sup>th</sup> )	<b>Quasi-experiments</b> Regression discontinuity	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 15 “Natural and Quasi Experiments”</li> <li>• Angrist and Pishke – Mastering Metrics – Chapter 4</li> </ul>	
No Class	<b>Fall Break</b> - Nov 22 <sup>nd</sup>		
13 (Nov 29 <sup>th</sup> )	<b>Qualitative and Mixed-Methods Research</b> Qualitative versus quantitative Purposive sampling Interviews, focus groups, ethnography Coding qualitative data	<ul style="list-style-type: none"> <li>• Remler and Van Ryzin: Chapter 3 “Qualitative Research”</li> <li>• DeLuca, S. All over the map: Explaining the educational outcomes of the Moving to Opportunity program.</li> </ul>	Journal Assignment #7: DeLuca  Research Proposal: Proposed data and methods section
14 (Dec 6 <sup>th</sup> )	Research Proposal Presentations		Stata Exercise 6: Diff-in-Diff
Exam Week			Research Proposals Due: December 13

