

Applied Research Methods

POL 306 - Spring 2019
Harrison Hall 210
Tues & Thurs 2:50 pm – 4:10 pm

Instructor: Dr. Kevin Reuning (ROY-ning)
Email: reunink@miamioh.edu
Course Website: Canvas
Office: Harrison Hall 222
Office Hours: Tuesday: 12:30 – 2:30 pm
Thursday: 12:30 – 2:30 pm
and by appointment

Undergraduate Assistant: Rae Moro
Email:
Office Hours: Tuesday 1pm to 2pm
(In Harrison 203)

Course Description:

In this course we will learn how quantitative analysis can be used to test social science theories and analyze public policy. This will require covering both theoretical questions as well as directly applying what we learn using R, a common statistical software. By the end of the term students will be able to understand quantitative analysis done by others as well as implement their own.

Student Learning Objectives:

1. Students will be able to define and explain statistical concepts used in the analysis of political phenomenon.
2. Students will demonstrate skill in evidence-based reasoning by identifying the appropriate research design and data for a given research question.
3. Students will be able to identify and apply the appropriate statistical methodology and analysis for a given problem and understand the limitations of their research choices.
4. Students will be able to apply statistical methodologies to contemporary political issues and problems and be able to identify and evaluate alternative political science-based solutions.
5. Students will be able to evaluate the possibilities for positive change in democratic society as engaged researchers.

Required Book:

Bergman, Evan and Xiaohu Wang. 2017. *Essential Statistics for Public Managers & Policy Analysts*. ISBN: 9781506364315

For those that want more help using R, *Political analysis using R* by James E. Monogan III is available online through the Miami library: <https://link-springer-com.proxy.lib.miamioh.edu/book/10.1007%2F978-3-319-23446-5>

Course Policies:

Respect:

In this course we will learning how to test social scientific theories and evaluate public policy. At times this will require discussing issues that touch many of us personally. In these discussions our aim is to understand what the evidence implies about the world. In these discussions we will treat everyone with respect.

Preparation:

This course builds on itself and so students need to come to class everyday ready and willing to learn. Most weeks we will spend one day in a lecture and another day working on assignments. On working days students are expected to bring a laptop and be prepared to actively engage in the assignment.

Readings are expected to be done prior to Tuesday's class.

Technology:

In the class you are expected to be focused on what is going on within the class. Laptops will be required on some days. On those days that laptops are not required you may bring one to take notes, etc. If the laptop becomes a distraction to those around you we will look at reevaluating this policy.

Email Policy:

I will check email between 8am and 6pm, and will try to always respond to any contact within 24 hours. Although I do not expect formality in email communications, I do expect you to respect that emails are not a costless act.

Grade Distribution and Assignments:

Item	Percentage
Attendance	5%
Regular Assignments	35%
Midterm	30%
Final	30%

Attendance:

You are expected to come to class. You are given 2 unexcused absences without loss of credit. Additional unexcused absences will lead to lost points:

- 0-2 unexcused absences: 5%
- 3 unexcused absences: 4%
- 4 unexcused absences: 3%
- 5 unexcused absences: 2%
- 6 unexcused absences: 1%
- 7 or more unexcused absences: 0%

In addition, you will still be expected to complete any assignments that you missed. These will be due one week after you return to class. You will be expected to contact me in order to get access to any missed assignments. Not completing a missed assignment because you were unaware of it is not an excuse.

Excused absences:

In accordance with Miami University policy (<https://blogs.miamioh.edu/miamipolicies/?p=2046>), I must be notified in writing prior to any excused absence. These will not count against your unexcused absences. You will still be expected to complete any in-class assignments. As for unexcused absences you must contact me to received the assignment and they are due one week after your return to class.

Assignments:

Throughout the semester we will work on assignments both in and outside of class. I will make it clear as I hand-out assignments how they will be graded.

Midterm:

The midterm will take place on Wednesday, October 17th. We will discuss the format of the midterm as we approach it.

Final:

The final will take place on Wednesday, December 12th. We will discuss the format of the midterm as we approach it.

Extra Credit:

I will provide several extra credit opportunities throughout the semester and will announce them in class and on Canvas.

Groups:

As we start using R I will assign everyone to a small group of 4 people. On R work days you will sit with your group and will troubleshoot problems together. You will turn in assignments together, and the degree you work together outside of class is entirely up to you and your group.

Late work policy:

In order to receive a deadline extension you should contact me more than 24 hours before the deadline. If an assignment is turned in late without an extension but within 24 hours of the due date, your grade will decrease by 5 percentage points (a 95% would become a 90%). For every additional 24 hours after this it loses another 5%.

Datacamp:

In order to help you learn R we will use Datacamp. Datacamp is an online tool that helps you troubleshoot R. The Datacamp assignments are for you and so will not be graded. But they have been designed to help you on the homework assignment for that week.

Letter Grade Distribution:

>= 93.00	A	73.00 - 76.99	C
90.00 - 92.99	A-	70.00 - 72.99	C-
87.00 - 89.99	B+	67.00 - 69.99	D+
83.00 - 86.99	B	63.00 - 67.99	D
80.00 - 82.99	B-	60.00 - 62.99	D-
77.00 - 79.99	C+	<59.99	F

Academic Integrity:

Miami University is a scholarly community whose members believe that excellence in education is grounded in qualities of character as well as of intellect. We respect the dignity of other persons, the rights and property of others, and the right of others to hold and express disparate beliefs. We believe in honesty, integrity, and the importance of moral conduct. We defend the freedom of inquiry that is the heart of learning and combine that freedom with the exercise of judgment and the acceptance of personal responsibility.

Miami demands the highest standards of professional conduct from its students, faculty, and staff. As a community of scholars, our fundamental purpose is the pursuit of knowledge. Integrity in research and creative activities and in academic study is based on sound disciplinary practices and expectations, as well as a commitment to the values of honesty and integrity.

Any student caught committing academic dishonesty will, at a minimum, receive a 0 for the assignment at hand. For more information on academic dishonesty and potential punishments visit <http://MiamiOH.edu/integrity>.

Disability Services:

If you are a student with a physical, learning, medical and/or psychiatric disability and feel that you may need a reasonable accommodation to fulfill the essential functions of the course that are listed in this syllabus, you are encouraged to contact the Office of Student Disability Services at 529-1541 (V/TTY), located in the Shriver Center, Room 304.

Course Outline:

Week of January 29: What are we researching and how?

Who or what are we researching?

<http://www.socialresearchmethods.net/kb/unitanal.php>

<http://www.socialresearchmethods.net/kb/sampterm.php>

<http://www.socialresearchmethods.net/kb/external.php>

Week of February 5: Variables

How are we quantifying the world?

<http://www.socialresearchmethods.net/kb/variable.php>

<http://www.socialresearchmethods.net/kb/measlevl.php>

Week of February 12: Theories and Hypothesis

How does research start?

<http://www.socialresearchmethods.net/kb/resques.php>

<http://www.socialresearchmethods.net/kb/relation.php>

Week of February 19: Causality

How do we define if something is causal?

<http://www.socialresearchmethods.net/kb/intval.php>

<http://www.socialresearchmethods.net/kb/causeeff.php>

Week of February 26: Describing Data

How do we describe a phenomenon

Chapters 6 and 8

Week of March 5: Histograms and Standard Deviations

Is our hypothesis right?

Chapter 7

Week of March 12: Hypothesis Testing

Is our hypothesis right?

Chapter 10 and 11

Week of March 19: Review and Midterm

Tuesday: Review

Thursday: Midterm

Week of March 26: Spring Break

NO CLASS

Week of April 2: Chi-Squared

Are these nominal variables dependent?

Chapter 11

NO CLASS ON APRIL 4

Week of April 9: T-Tests

Are these two groups different?

Chapter 12

Week of April 16: Correlations

Are these two things related?

Chapter 14

Week of April 23: Regression

Are these two things related if we consider something else?

Chapter 15

Week of April 30: More Linear Regression and Logistic Regression

How do we make things more complicated?

First half of Chapter 16 (273 to 279)

Week of May 7: Review and Catchup Week

NO MONDAY CLASS

Read: Caliskan, Aylin, Joanna J. Bryson, and Arvind Narayanan. 2017. "Semantics derived automatically from language corpora contain human-like bases." *Science* 356:183-186.

Tuesday May 14: Final Exam

3 to 5 pm

Additional Resources

- Howe Writing Center: <http://miamioh.edu/hcwe>
- Students also may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to call Student Counseling Service (513-529-4634). For emergencies outside of business hours, the Community and Counseling and Crisis Center (844-427-4747) has a 24-hour hotline.
- Students come to Miami from a variety of economic backgrounds. If you are having financial trouble I urge you to make use of the services available through Miami Cares Resources: <http://miamioh.edu/emss/offices/student-success-center/student-resources/index.html> (under the Emergency Needs tab)