Applied Research Methods
Spring 2020

POL 306 - Fall 2019
Harrison Hall 210
Tue & Thur 2:50 pm – 4:10 pm

Instructor:	Dr. Kevin Reuning (ROY-ning)
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Course Website:	Canvas
Office:	Harrison Hall 222
Office Hours:	Monday: 1:00 pm – 3:00 pm
	Tue & Thur: 1:30 – 2:30 pm
	and by appointment
Undergraduate Assistants:	Joshua Ferneding & Mikah Pransky
Office Hours:	

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.

Recommended Book

In the first half of the semester the readings will be from online sources. The second half will be based off of *Real Stats*. The book is not cheap, so I made available a copy from the course reserves in the library, I also recommend renting it.

> Bailey, Michael A. 2016. *Real Stats: Using Econometrics for Political Science and Public Policy.*

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.

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, 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, March 10th. We will discuss the format of the midterm as we approach it.

Final

The final will take place on Thursday May 14th. We will discuss the format of the midterm as we approach it.

Extra Credit

There is one extra credit opportunity for this class. You can find it on canvas and it is due May 7th at midnight. You will have the tools to do it starting after April 9th.

Groups

I will assign everyone to a small group of 4 people. You will work with this group on in-class assignments throughout the semester and work with them as you learn R. You will still turn in assignments by yourself, 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%.

Online Work

In order to learn R in a hands on fashion, starting in the second half of the semester each week we will have an online tutorial in R. This work is NOT graded, it is solely designed to help you with the homework that will be due at the next class session.

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

January 28 & 30 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`

February 4 & 6 Variables

How are we quantifying the world?

`http://www.socialresearchmethods.net/kb/variable.php`

`http://www.socialresearchmethods.net/kb/measlevl.php`

February 11 & 13 Theories and Hypothesis

How does research start?

`http://www.socialresearchmethods.net/kb/resques.php`

`http://www.socialresearchmethods.net/kb/relation.php`

February 18 & 20 Causality

How do we define if something is causal?

`http://www.socialresearchmethods.net/kb/intval.php`

`http://www.socialresearchmethods.net/kb/causeeff.php`

February 25 & 27 Describing Univariate Data

How do we describe a phenomenon

March 3 & 5 Univariate and Scatter Plots and Review

Review on March 5

March 10 & 12 Midterm and Simple Regression

Midterm on March 10

March 17 & 19 Simple Regression

Chapter 3 Sections 1 through 4

March 24 & 26 Spring Break

No Class

March 31 & April 2 Hypothesis Testing

Chapter 4

April 7 & 9 Multiple Variable Regression

Chapter 5

April 14 & 16 Dummy Variables

Chapter 6 Sections 1 to 3

April 21 & 23 Interactions and Transformations

Chapter 6 Section 4 and Chapter 7 Sections 1 to 2

April 28 & 30 Logistic Regression

Chapter 12

May 5 & 7 Review and Limits of Quantitative Analysis

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

May 14 Final

– Final at 3:00 - 5:00 p.m.

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)