Human beings are naturally inclined to develop explanations for things that happen in our environment. Our ability to attribute events to some causal narrative helps us make sense of the world. We do this for things in the physical world (Why was December so warm – global warming?) our social environment (why did Sally not respond to my email?) in the world of politics (why did the Russians invade Crimea?).

Our answers to these questions always involve some element of "theory" -- a core set of ideas and interrelated concepts that provide a basis for explanation. The explanations we propose are hypotheses about the event based on this conceptual framework. For example: "The Russians invaded Crimea because they are trying to rebuild their traditional empires from the Czarist and Soviet eras" (that's an answer rooted in IR theories of power politics) or "The Russians invaded Crimea because the economy isn't resulting in broad improvements in standard of living for the average Russian and Putin needed to distract them with this ready-made crisis" (that's a answer based in domestic diversionary war theories of foreign policy).

Our challenge as social scientists is to be explicit with our theoretical frameworks, self-critical about our assumptions and rigorous in our attempts to test our potential causal explanations (or hypotheses) by asking: "What have I missed?" or "How could I be wrong?"

This course is intended to introduce students to the science side of political science. Over the term you will be encouraged to think like social scientists, learn how to pose questions in the manner of our discipline, undertake a study of your own and present your findings in a customary fashion. You will also participate in an analysis of the work of other scholars (and your peers), a discussion of the strengths and weaknesses of various methodologies, and a broader critical evaluation of the application of the scientific method to the study of politics.

Texts and Tools

APSA Style Manual for Political Science the file is also linked below
A base workspace with dataset and scripts is set up in RStudio Cloud.
The following Web resources are going to be essential for work with R.

You will find the online guide handy guide to RStudio Cloud here: https://rstudio.cloud/learn/guide

LINK FOR OUR POSC230 SHARED Posit ( RStudio ) Cloud Space [LINK HERE]

On day one of class we will follow this link and create a new project (you should eventually be able to see all of the members of the class in the projects and members list). Your project space is private unless you share it. As Admin and Moderator, the prof and prefect do have access to your project space so they can help you solve issues during the term.

Other Sites and Sources

QUICK-R:  http://www.statmethods.net/index.html
This site essentially serves as an alternative to an R-based methods textbook.

The Quick-R site has some great copy and paste code (all you need to do is use your own data frames and variables) to perform most of the things we'll do in class. They have a very simple diagnostic chapter too!

A Cookbook for R
The goal of the cookbook is to provide solutions to common tasks and problems in analyzing data. Most of the code in these pages can be copied and pasted into the R command window if you want to see them in action.

Lynda Videos in particular R Statistics Essential Training
Carleton Subscribes to some on-line course materials.

For us the useful one is an introduction to R and R-Studio called "R Statistics Essential Training". The video includes steps for installation and use of R and R studio and covers basic stats (a great refresher for the stuff you did in 215 or if you skipped 215 with AP stats.

Handy table of R commands: Link to PDF

R By Example Cheat sheet Link to PDF

Grading

Research Elements Weekly Short Papers X 9 (5 pts each) -- 45 point total

R-Labs x 9 (5pts Each) - 45 points total

Final Research Paper with Data Analysis -- 40 points
Final Week Short Presentation -- 10 points

Participation & In-Class Quiz Engagement - 10 points

Final Grade is total score is out of 150 points as a percentage

Late Assignment Policy: Keeping on pace with the short assignments and labs is a key to success in the course. Short assignments (graded out of 5) will be penalized .5 points for lateness. This is a one time penalty. You are encouraged to complete them even if late since they contribute to your final project.

Short assignment grade guide (or "How do I get 5/5?"). The grading for short assignments is as follows

4/5 or Lower: Something was missing or the work was substandard, disorganized, or lacking in attention to detail in some way

4.5/5 Normal Grade, All required content is present, and as expected

5/5 Exemplary, All required content is present but with evidence of special attention to detail, engagement with challenging procedures, reference to lecture or textbook content, particularly good writing and organization. Etc. 5/5 is perfect and perfection is a high bar in methods. Do not expect to earn this often without a significant effort.

Weekly Course Plan

Asynchronous Elements - Watch Lecture Videos, Read Text Chapters

Synchronous In-Class Activities

Tuesdays
RESP from Previous Week Due BEFORE class on TUESDAY
Group Quiz - lecture and reading content & discussion
RESP follow-up discussion
In-class activities for new Research Elements Paper (due next Tuesday)

Thursdays
RLab from prior week due BEFORE class
RLab Discussion
New RLab Assignment Workshop (due next Thursday)
11 September - 17 September
Weekly Topic and Readings: The Scientific Study of Politics, Theory and Research Questions

K&W chapter 1 & 2

Lecture 1 Ontology and Epistemology

Week 1 Lecture Slides (PDF)File

Week 1 Research Elements Short Paper: Questions and Approaches Assignment

R Lab #1 Using R, Variable Labels and Descriptions Assignment

Week 1 Quiz

18 September - 24 September
Weekly Topic and Readings: Causality

K&W chapter 3 & 4

Lecture 2 Causality

Week 2 Lecture Slides

Discussion Questions for RESP1

Week 2 Research Elements Short Paper - Finding and Evaluating Literature Assignment

R Lab #2 Recoding Variables and Subsetting Data Assignment

Week 2 Quiz

25 September - 1 October
Weekly Topic and Readings: Measurement: Levels, Validity, Reliability

K&W chapter 5 & 6

Lecture 3 Hypotheses and Measurement

Lecture 3
Discussion Questions for RESP 2

Week 3 Research Elements Short Paper - Considering Data and Research Design Assignment

Data SourcesPage
A list of websites with links to major data sources for RESP #3

R Lab #3 Indexes and Bivariate analysis Assignment

Week 3 Quiz

2 October - 8 October
Weekly Topic and Readings: Sampling and Hypothesis Testing

K&W chapter 7 & 8

Lecture 4a Sampling

Lecture 4b Bivariate Analysis

Lecture 4b Bivariate

Lecture 4a Sampling

Discussion Questions RESP #3

Week 4 Research Elements Short Paper - Project Proposal Assignment

R Lab #4 Data aggregation and merging Assignment

Week 4 Quiz

RScript Extra for LAB 4 Indexes and AggregateFile

9 October - 15 October
Weekly Topic and Readings: OLS regression

K&W chapter 9

Lecture 5 OLS Regression

Lecture 5 OLS
Discussion Questions RESP #4 (Proposal)

Week 5 Research Elements Short Paper - Revised Proposal Assignment

R Lab #5 OLS Regression Assignment

Week 5 Quiz

16 October - 22 October
Weekly Topic and Readings: Multiple OLS regression

K&W chapter 10

Lecture 6 Multiple Regression

Lecture 6 Multiple Regression

An example of multiple regression with model nesting. Only read to page 618.

Week 6 Quiz

Week 6 Research Elements Short Paper - Presenting Model Components Assignment

R Lab #6 Multiple OLS Regression Assignment

23 October - 29 October
Weekly Topic and Readings: Logistic Regression Maximum Likelihood Estimation and Post-estimation Analysis

K&W chapter 12

Lecture 7a Logistic Regression MLE Estimation

Lecture 7b Logistic Regression Interpretation

Lecture 7 Logistic Regression

Week 7 Quiz

Week 7 Research Elements Short Paper - Table and Equation Assignment
R Lab #7 Logistic Regression Assignment

Logit Interpretation Example Code and data

30 October - 5 November
Weekly Topic and Readings: Regression Diagnostics

K&W chapter 11

Lecture 8 Regression Diagnostics and Postestimation

Lecture 8 Regression Diagnostics

Week 8 Quiz

Week 8 Research Elements Short Paper - Substantive Analysis Assignment

R Lab #8 OLS Regression Diagnostics and Logit post-estimation Assignment

R Lab #8 Script for Logistic Postestimation Simulation File

5 November - 11 November
Weekly Topic and Readings: Qualitative Methods - Triangulation: Integrating Stats and Cases


Week 9 Quiz

Week 9 Discussion Questions

Week 9 Research Elements Short Paper - Considering Alternate Approaches or Mixed Methods Assignment

R Lab #9 Finalizing your R Script Assignment

12 November - 18 November

Presentations
The plan for the Final Week of the term is for every student to provide a little 'show and tell' of your project focused on your main model table and giving us a taste of your research project. The objective is to represent a scientific conference presentation panel on a small scale.

Prepare the following elements. You have 6 Slides.

What was your research question?
What are the Key Theoretical Concepts and Variables?
What was your RD in a nutshell?
 "To answer this question I used/gathered/merged data from [insert names of your data sources]. My DV variable is (Y) and my main IV is (X) etc.
What are your model results. Share your main model Table. Explain what the table displays -- your model building logic and results
What additional or Supporting Figure should we see? - ONE SLIDE ONLY - This could be bivariate scatter plot, a key diagnostic plot, for logit models a predicted probability plot, a table of descriptive statistics , Box Plots showing group effects, meaningful values for a case etc.
Conclusion -- did you manage to answer your question - reflect on your hypothesis?
Clearly we need to be efficient with this so do not ad-lib this presentation. Make some notes for yourself. Be prepared and on-point. Efficiency matters!

To avoid the time wasted at changeover - I will open the slide deck for each student from this upload link and 'run the slides' while students describe the content.

Hopefully we will have a few minutes for questions at the end of each presentation.

Final Week Short Presentation [Due BEFORE your presentation!] Assignment
Upload your short presentation slides, The slides must be submitted BEFORE your presentation date. I'll use the presentation (to avoid delays with log in etc).

Final Research Paper with Data Analysis Assignment (Due by the end of the exam period)

Attendance and Engagement Assignment