POS3703 - Scope and Methods of Political Science

University of Central Florida
College of Sciences
Department of Political Science
Spring 2017

Instructor:	Clayton Besaw	**Course Time:**	3:00pm-4:15pm Tu/Th
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Catalog Course Description: POS 3703 COS-POLS 3(3,0) Scope and Methods of Political Science: PR: Junior standing or C.I. The scope and methodology of political analysis. Extensive examination of the discipline, research design and methodology. Fall, Spring.

Course Description: Contemporary social science, political science included, has sought to better explain human behavior through a number of strategies. In this endeavor, the field of political science has increasingly focused on integrating concepts such as the scientific method, hypothesis testing, and data analysis. This course seeks to introduce you to these concepts and how they can be applied to political questions. For example, analysts such as Nate Silver (http://fivethirtyeight.com/) and Andrew Tanenbaum (http://www.electoral-vote.com/) have utilized basic and advanced statistical methods in an effort to predict the outcomes of elections. In the realm of security and conflict, groups such as the National Consortium for the Study of Terrorism and Responses to Terrorism (http://www.start.umd.edu/) have collected data on global terrorism events to help both researchers and policy makers to better understand the patterns of terrorist violence.

This course will introduce students to an extensive study of the underlying concepts and skills that form the basis of the scientific analysis of political events. This will include topics such as research design, logic of comparison, hypothesis testing, statistics, creative analysis, and programming with R. This course uses the R statistical programming language. Unlike other packages, R is free to the user to download and use (for the most part) as they please. Becoming competent in R will take practice and experience, but the knowledge and skills that you will gain are far greater than the effort needed to complete this course. We live in a world of increasingly bigger and more accessible data on human behavior. Having even a basic competence in both research methods and R programming will only make you more competitive in whichever career path you choose to take.

Course Objectives: The objectives for this course include, but are not limited to, the following components:

- Development of knowledge concerning the scientific study of political questions.
- Development and strengthening of basic and intermediate statistical skills.
- Development of the logic behind experimental comparison and broader research design and how to link these methods to hypothesis testing.
- Development of knowledge on how to interpret data and evidence derived from data.
- Development of creative thinking and critical literacy concerning political questions and data.
- Development of programming and research skills using the R programming language.

Required Texts: There are two required texts for this class, which are listed below. You only need to buy *Essentials of Political Analysis* by Pollock. You can purchase the essentials text through the UCF student book store or online on Amazon. The second text, *Political Analysis Using R* can be downloaded as a pdf file for free using the UCF library.

The essentials of political analysis. Philip Pollock, 5th edition.

Political Analysis Using R. James Monogan III. Springer Science Collection.

Recommended Texts: Due to the nature of this course, it is always valuable to seek out non-required readings/texts to help you. Below is a list of four recommended texts that can help you to strengthen and advance the skills that you will learn in this course. These texts can be found for free at leanpub or through the UCF Springer collection.

R Programming for Data Science by Roger Peng. https://leanpub.com/rprogramming

The Art of Data Science by Roger Peng and Elizabeth Matsui. https://leanpub.com/artofdatascience

Everitt, Brian, and Torsten Hothorn. *An introduction to applied multivariate analysis with R.* Springer Science & Business Media, 2011.

Albert, Jim, and Maria Rizzo. *R by Example.* Springer Science & Business Media, 2012.

Course-Specific Policies

Communication: I will be using Webcourses and your Knights email exclusively for communication. It is a university policy that I use these two platforms for communication. It is your responsibility to check these sources regularly for updates or messages from myself. I recommend that you first contact me through my email or on web courses, as I will have access to these mediums more so than my shared office phone. My policy is to respond in a reasonably quick manner ($\leq$ 24hrs) on the weekdays and at intervals of my discretion during the weekends. You are additionally encouraged to visit me in person during my official office hours or to setup a meeting in advance outside of those hours. My official office hours slot is generally first come-first served, but you should contact me in advance if you only have limited time and need to be seen first and/or quickly.

Late Work/Exam-makeups: Late work is unacceptable and will be marked as a zero in almost every circumstance. There are two situations in which an extension can be given in this course. First, reasonable reasons for needing an extension must be sent to me **at least** 48 hours before the due date. Reasonable excuses are not emergencies, but include matters of life and employment. Anything after the 48 hour notice will not be considered for an extension. Second, both normal and last minute extensions can be given for university sanctioned reasons. These include medical emergencies, family emergencies, university sanctioned trips, and major holidays. To qualify for either situation, you must provide me with reasonable evidence of your necessity for an extension or make-up exam (doctor's note, university letter, etc.).

Academic Activity: During the first week of class, you are required to complete a short no-credit syllabus quiz that can be found online on Webcourses. If you fail to do so, your financial aid may be delayed.

Extra Credit: I reserve the right to employ extra credit in two ways. First, challenging, but optional, questions may appear on lab assignments and/or problem sets. These questions provide you with the opportunity to go beyond the bare minimum and to improve your grade. Second, I reserve the right to offer class-wide extra credit opportunities at my discretion. These may include participation in a research study, attendance of an academic/technical speaking event, or a relevant in-class activity. Extra credit will not be given under any circumstances outside of these two scenarios and extra credit will never be given on an individual basis.

Course/Syllabus Changes: As one can't fully predict the future (even with data), I reserve the right to make changes to the Syllabus and related course parameters. In the event of a change, I will announce changes in class, post an announcement on Webcourses, and upload an updated syllabus to Webcourses. These above three mediums of communication are my responsibility to uphold. After changes are distributed as such, **it is your responsibility to take note and adjust to course changes.**

Prerequisite knowledge: There are no prerequisite courses required for this class, but it does help to have some elementary exposure to programming and statistical mathematics. The plan for this course assumes that you have very little, or no, background experience in either of these disciplines. The goal is to help you build your knowledge and skill sets around the core concepts of research design logic, statistical reasoning/interpretation, and their subsequent application in the R programming language.

Professionalism: Per university policy and classroom etiquette; mobile phones, iPods, etc. must be silenced during all classroom and lab lectures. Those not heeding this rule will be asked to leave the classroom/lab immediately so as to not disrupt the learning environment. Please arrive on time for all class meetings. Students who habitually disturb the class by talking, arriving late, etc., and have been warned may suffer a reduction in their final class grade. You are free to exit the classroom to field a call in cases of emergency.

Use of Technology: You have the option to use the lab computers or your own laptop. I recommend the use of your laptop so that you can easily transition your work on your assignments from the classroom to the home/study area. As such, your laptop/computer should only be used for class activities. Obvious and habitual violation of this policy may result in a final grade deduction or being asked to leave the class for the day.

University Policies

Academic Conduct Policy: Academic dishonesty in any form will not be tolerated. If you are uncertain as to what constitutes academic dishonesty, please consult The Golden Rule, the University of Central Florida's Student Handbook (http://www.goldenrule.sdes.ucf.edu/) for further details. As in all University courses, The Golden Rule Rules of Conduct will be applied. Violations of these rules will result in a record of the infraction being placed in your file and receiving a zero on the work in question AT A MINIMUM. At the instructor's discretion, you may also receive a failing grade for the course. All incidents will also result in a referral to the Office of Student Conduct, who will make decisions concerning potential expulsion.

Students with Disabilities: The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students who need accommodations must be registered with the Office of Accessibility, Ferrell Commons Room 185, Phone: (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

Religious Observances: Students are expected to notify their instructor in advance if they intend to miss class to observe a holy day of their religious faith. Click here for a list of the major religious holidays in a number of faiths. For more details about these and other holidays, go to (http://www.fctl.ucf.edu/TeachingAndLearningResources/CourseDesign/MajorReligiousHolidays/) or contact the Office of Diversity and Inclusion at 407-823-6479.

Incomplete Grades: Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. Your instructor is the final authority on whether you qualify for an incomplete.

University Writing Center: The University Writing Center (UWC) is a free resource for UCF undergraduates and graduates. At the UWC, a trained writing consultant will work individually

with you on anything you're writing (in or out of class), at any point in the writing process from brainstorming to editing. Appointments are recommended, but not required. For more information or to make an appointment, visit the UWC website at http://www.uwc.ucf.edu, stop by MOD 608, or call 407.823.2197.

Course Assessment

Attendance & Participation (10%): You are required to attend class to get participation points (unless a valid excuse is given). Late arrivals and early leavers will be deducted points, as these behaviors are disruptive to the classroom environment. Participation is an important part of learning. It will be expected that you have read the required text selections before coming to class.

Online Discussion Questions (10%): Each week students are required to post at least two questions concerning the reading or lab assignments for the coming week. **Questions are due each Monday by midnight.** I will use these questions to help drive lectures and lessons each week. Additionally, students are free to answer the questions of their peers to aid understanding.

Lab Programming Exercises (20%): There will be 5 in-lab programming exercises that are meant to build your knowledge and comfort of R. These exercises can be done individually or in groups and can be done both in-lab and at home. Additionally, I will be available in class to provide help and guidance. Each in-class lab exercise is worth 4% individually.

Problem Sets (30%): During the course of the semester you will be required to complete two problem sets that ask you to complete tasks concerning research design, data interpretation, and relevant applications in the R programming language. Unlike the lab exercises, these problem sets are to be completed outside of class and on your own. Each problem set assignment is worth 15% individually.

Exams (30%): There will be two non-cumulative exams (midterm and final) that will test your understanding of concepts learned in this course. Each exam is worth 15% individually. Exams will be graded on a curve.

Grading Scheme: Grades will be given on a ± alphabetic scale. Additionally, all graded assignment will be initially released through Webcourses only. Feedback on, and the results of, lab assignments and problem sets will be returned to the student after the release of grades on Webcourses.

Grading Scale	
A	100-94
A-	93.9-90
B+	89.9-87
B	86.9-84
B-	83.9-80
C+	79.9-77
C	76.9-74
C-	73.9-70
D+	69.9-67
D	66.9-64
D-	63.9-60
F	59.9 - 0

Final Remarks: This course will be challenging, but hard work reaps valuable rewards. My job is to guide you through this course and to open your mind to the technical and scientific methods of studying politics. My job is not to fail you or to weed you out. This syllabus outlines many ways in which I am here to help you learn from this course. As long as you work hard and keep an open mind, you will leave this course with marketable skills for both the private sector and for graduate school. Taking this into account, you are an adult and you are responsible for your own decisions. I will provide you with the support necessary to be successful in this course, but it is your responsibility to use it.

Important Dates:

Midterm Exam ..... Tuesday March 7th
Spring Break ... Monday March 13th to Sunday March 19th
Final Exam ..... Tuesday April 27th (1pm-3:50pm)

Course Schedule: The following course schedule outlines the topics that will be covered each class session. Lecture days will go over important concepts, while lab days will be devoted to in-class R programming assignments. On lecture days, I will present information both from, and outside of, the text selection. Readings for each week are considered part of your home work and you are expected to have been read the selections before attending class. **Note: You are not responsible for completing any of the practice questions you may encounter in the reading, but I recommend that you do them.**

Week 1

January 10th, 2017

- No readings.
- Social introductions, syllabus/course overview, expectations and goals.

January 12th, 2017 - Scientific Method and Introduction to R (Lecture)

Readings

- Essentials, pg(s) xviii - xxii
- Political Analysis Using R, pg(s) 1 - 11

Week 2

January 17th, 2017 - Concepts and Measurement (Lecture)

Readings

- Essentials, Chapter 1

January 19th, 2017 - R Installation and Environment (Lab)

Readings

- Webcourse Tutorial Documents

Begin Lab Exercise 1

Week 3

January 24th, 2017 - Measuring and Describing Variables (Lecture)

Readings

- Essentials, Chapter 2

January 26th, 2017 - R Installation and Environment II (Lab)

Readings

- Political Analysis Using R, pg(s) 13 - 30

Continue Lab Exercise 1

Lab Exercise 1 due in Webcourses by midnight on Monday January 30th.

Week 4

January 31st, 2017 - Explanation, Hypotheses, & Comparisons I (Lecture)

Readings

- Essentials, Chapter 3

February 2nd, 2017 - (Lab)

Readings

- Political Analysis Using R, Chapter 4

Begin Lab Exercise 2

Week 5

February 7th, 2017 - Explanation, Hypotheses, & Comparisons II (Lecture)

Readings

- Essentials, Chapter 3

February 9th, 2017 - (Lab)

Readings

- Political Analysis Using R, Chapter 3

Continue Lab Exercise 2

Lab Exercise 2 due in Webcourses by midnight on Monday February 13th.

Week 6

February 14th, 2017 - Research Design I (Lecture)

Readings

- Essentials, Chapter 4

February 16th, 2017 - (Lab)

Readings

- Webcourse Tutorial Documents II

Begin Lab Exercise 3

Week 7

February 21st, 2017 - Research Design II (Lecture)

Readings

- Essentials, Chapter 4

February 23rd, 2017 - (Lab)

Readings

- Webcourse Tutorial Document II

Continue Lab Exercise 3

Lab Exercise 3 due in Webcourses by midnight on Monday February 27th, 2017

Week 8

February 28th, 2017 - Midterm Review (Lecture)

Readings

- Essentials, Chapter 1 - 4
- Lecture Slides.

March 2nd, 2017

- **MIDTERM EXAM**

Week 9

March 7th, 2017 - Controlled Comparisons between Variables (Lecture)

Readings

- Essentials, Chapter 5

March 9th, 2017 - (Lab)

Readings

- Webcourses Tutorial Document III

Begin Lab Exercise 4

PROBLEM SET #1 DUE IN WEBCOURSES BY MIDNIGHT ON SUNDAY MARCH 12TH.

Week 10

Spring Break. Enjoy!

Week 11

March 21st, 2017 - The Basics of Inference with Data Analysis (Lecture)

Readings

- Essentials, Chapter 6

March 23rd, 2017 - (Lab)

Readings

- Political Analysis Using R, Chapter 5

Continue Lab Exercise 4

Week 12

March 28th, 2017 - Inference and Bivariate Measures of Association (Lecture)

Readings

- Essentials, Chapter 7

March 30th, 2017 - (Lab)

Readings

- Political Analysis Using R, Chapter 5

Continue Lab Exercise 4

Lab Exercise 4 due in Webcourses by midnight on Monday April 3rd, 2017

Week 13

April 4th, 2017 - Modeling with Simple Linear Regression (Lecture)

Readings

- Essentials, Chapter 8

April 6th, 2017 - (Lab)

Readings

- Political Analysis Using R, Chapter 6

Begin Lab Exercise 5

Week 14

April 11th, 2017 - Modeling with Multiple Linear Regression (Lecture)

Readings

- Essentials, Chapter 8

April 13th, 2017 - (Lab)

Readings

- Webcourses Tutorial Document IV
- Political Analysis Using R, Chapter 6

Continue Lab Exercise 5

PROBLEM SET #2 DUE IN WEBCOURSES BY MIDNIGHT ON SUNDAY APRIL 16TH.

Week 15

April 18th, 2017 - Generalized Linear Regression Modeling with Logistic Regression Analysis (Lecture)

Readings

- Essentials, Chapter 9

April 20th, 2017 (**Final Class** - Lab)

Readings

- Webcourses Tutorial Document V

Continue Lab Exercise 5

Lab Exercise 5 due in Webcourses by midnight on Monday April 24th, 2017

Final Exam Review will be uploaded to Webcourses on Friday the 21st.

Week 16

FINAL EXAM - Thursday April 27, 1:00m to 3:50pm