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**PSCI 2075-010:  Quantitative Research Methods**
Fall, 2023
Monday, Wednesday:  1:25-2:15
Gold A2B70

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## Contact Information

*Instructor*
Dr. Steven Beard, (Steven.Beard@Colorado.edu)
Ketchum 212
Office Hours:  Monday, Wednesday:  2:30-3:30, Thursday, 12:45-1:45, or by appointment

*Teaching assistants*
Alberto Burgo-Rivera (alberto.burgos-rivera@colorado.edu)
Ketchum 114G
Office Hours:  Friday 3:00-5:00

Sara Hoose (sara.hoose@colorado.edu)
Ketchum 234
Office Hours:  Wednesday 10:30-12:30

Komal Kaur (komal.kaur@colorado.edu)
Ketchum 211 and online (see recitation syllabus)
Office Hours:  Monday 9:00-10:00 and Wednesday 11:00-12:00

Hyodong Sohn (hyodong.sohn@colorado.edu)
Ketchum 211
Office Hours:  Monday, 12:30PM-1:15PM and Tuesday, 3:30PM-4:45PM or by appointment

*Lab coordinators*
Damon Roberts and Gustavo Perez

## Recitation Sections

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|---|---|---|---|
| Section 011:  M 9:05 – 9:55 | CLRE 209 | Mr. Sohn |
| Section 012:  M 12:20 – 1:10 | MCOL E155 | Mr. Burgos-Rivera |
| Section 013:  T 12:20 – 1:10 | MCOL E155 | Ms. Hoose |
| Section 014:  T 2:30 – 3:20 | MCOL E155 | Mr. Sohn |
| Section 015:  W 10:10 – 11:00 | Online | Ms. Kaur |
| Section 016:  W 3:35 – 4:25 | Online | Ms. Kaur |
| Section 017:  Th 9:05 – 9:55 | MCOL E155 | Ms. Hoose |
| Section 018:  F 1:25 – 2:15 | KOBL 140 | Mr. Burgos-Rivera |

## Class Description and Learning Objectives

research using data analysis.  You will even be able to conduct basic research using data analysis yourself.

My learning objectives for this course are for you to:
- ‹ Understand the role of data analysis in social science
- ‹ Be able to read and evaluate political science publications and other research that uses data analysis
- ‹ Be able to conduct basic data analysis on your own

Learning data analysis takes practice, persistence, and patience.  In order to fully understand data analysis requires doing it yourself.  Thus, we will be using a free statistical software called R to enable do analysis yourself.  The main class will be a combination of lectures and short exercises.  Your recitation sections will review the material from the main class, and provide more time to practice.  In addition, a number of group homework assignments will help you practice and deepen your understanding of the material.

**Course Materials**
There are two required textbooks:
- ‹ Pollock, Philip H. and Barry C. Edwards.  2020.  *The Essentials of Political Analysis.*  6th Edition.  CQ Press.  (EPA below)
- ‹ Pollock, Philip H. and Barry C. Edwards.  2023.  *An R Companion to Political Analysis.* 3rd Edition.  CQ Press.  (RCPA below)

Unless you opt out of the CU Book Access program, you should have access to both books on Canvas (click on "My Course Materials" at the bottom left).   See https://www.cubookstore.com/bookaccess for more information on this program.  If you do opt out, you will be expected to acquire copies of both books, although previous editions are acceptable.

In addition, you will need a laptop computer which you will be expected to bring to it to class regularly.  We will be using free statistics software called "R" as part of the course.  I will provide directions on how to install this separately.

**Course Requirements and grades**
Your grade will be determined by the following assignments:
- ‹ Group assignments (30% total)
- ‹ Midterm (20%)
- ‹ Final (25%)
- ‹ Quizzes (10% total)
- ‹ Recitation (15%)

*Group homework assignments*
There will be 5-6 homework assignments throughout the semester.  These will be due about every other week, and tentative deadlines are listed below.  These assignments are designed to help you solidify the course concepts and develop your skills using R.  You may work in groups of up to 4 within your recitation.  Groups may be assigned by your recitation leader or you may be allowed to choose your own groups at your recitation leader's discretion.  Each member of the group will receive the same grade.

*Midterm and Final*

There will be a midterm on October 18 and a final exam on December 19. Both will be administered on Canvas, and will be timed. Further details will be provided near the exam date. Note: we cannot reschedule either exam except in extreme circumstances. So don't schedule a flight home during the final exam.

*Quizzes*

Most weeks, there will be a short quiz (no more than 5 minutes). These will be administered on Canvas at the end of class on Wednesdays. Quizzes are intended to help you solidify your understanding of key concepts. Your bottom 3 quiz grades will be dropped. Accordingly, you will not be allowed to make-up quizzes except in extreme circumstances.

*Recitation*

15% of your grade will be determined by your recitation section. Each teaching assistant has discretion on how to determine your recitation grade, so see your recitation syllabus for more details on this component.

**Schedule**

(Note: EPA = *Essentials of Political Analysis*, RCPA = *R Companion to Political Analysis*)

- Week 1 (Aug. 28 and 30) - Introductions
  - o Readings:
    Smith, Gordon C.S. and Jill P. Pell. 2003. "Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomized controlled trials." BMJ. 327(7429):1459-61. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC300808/
    Yeh, Robert W. et al. 2018. "Parachute use to prevent death and major trauma when jumping from aircraft: randomized controlled trial." BMJ. 363:(5094). https://www.bmj.com/content/363/bmj.k5094
    EPA "Introduction"
    RCPA "Getting Started With R"
- Week 2 (Sept. 6) – Introduction to R
  - o Note: no class Sept. 4
  - o Readings
    RCPA Ch. 1
- Week 3 (Sept. 11 and 13) – Data
  - o Readings
    EPA Ch. 1, Ch. 2 pgs 34-39 and 55-64
    Ch. 3, Ch. 15 pgs 342-350
- Week 4 (Sept. 18 and 20) – Descriptive statistics
  - o Homework 1 due Sept. 18
  - o Readings
    EPA Ch. 2 pgs 39-55
    RCPA Ch. 2
- Week 5 (Sept. 25 and 27) – Sampling and statistical significance
  - o Readings
    EPA Ch. 6, Ch. 7 199-208

RCPA Ch. 8, Ch. 9 pgs 189-194 and 198-201
- ‹ Week 6 (Oct. 2 and 4) – Comparison and Causation
  - o Homework 2 due Oct. 2
  - o Readings
    - EPA Ch. 3, Ch. 4 pgs 105-123
    - RCPA Ch. 5, Ch. 6 (recommended)
- ‹ Week 7 (Oct. 9 and 11) – Simple comparison techniques
  - o Readings
    - EPA Ch. 7 208-236
    - RPA Ch 9 pgs 194-198 and 201-209
- ‹ Week 8 (Oct. 16 and 18)- Midterm
  - o October 16:  Review
  - o October 18:  Midterm (take home, but no class)
- ‹ Week 9 (Oct. 23 and 25) – Bivariate regression
  - o Homework 3 due Oct. 25
  - o Readings
    - EPA Ch. 8 239-257
    - RCPA Ch. 11
- ‹ Week 10 (Oct. 30 and Nov. 1) – Logic of controlled comparisons
  - o Readings
    - EPA Ch. 5
    - RCPA Ch. 7
- ‹ Week 11 (Nov. 6 and 8) – Multiple regression
  - o Homework 4 due Nov. 6
  - o Readings:
    - EPA Ch. 8 257-269
    - RCPA Ch. 12 pgs 259-269
- ‹ Week 12 (Nov. 13 and 15) – ExTm01 0 0 1 232.85 407.63 Tm0 g0 G[ )]TETQq0.00000912 0 612 792 re

**Policies**

*Late policy*
The homework assignments are due at the beginning of class. Late assignments may be turned in up to one week after the due date with a 15% penalty. Assignments will not be accepted more than one week late without permission from me or your TA.

You may not make-up exams or quizzes except in exceptional circumstances, such as illness or family emergencies. Since the lowest three quiz grades are dropped, inability to take a quiz (even in the case of illness or family emergencies) would generally not be allowed to be made up.

*Communication*
I will use both e-mail and Canvas to communicate important announcements. You are expected to check both regularly. The best way to contact me is through e-mail. I will do my best to respond reasonably promptly, but please be patient. For more complex issues or substantive questions I will probably suggest setting up an appointment to meet.

Your TA is responsible for most administrative matters, such as extensions, and you should generally contact them first. For help, you may approach either me or your TA as you prefer.

*Grading Grievances*
Objectively assigning grades is a tough business, and mistakes do happen. We are happy to go over the assignment and explain why we assigned the given grade during office hours. In general, you should first contact your TA for an explanation. If you wish to appeal a grade, you must submit *in writing* an explanation detailing where (i.e. what question) and why you think that you received insufficient credit for your answer. You should submit your appeal to both me and your TA. Be forewarned: I will not accept explanations arguing that because you worked really hard on a paper, your overall grade was just not high enough. You need to be able to show specific grading errors on my part.

*Classroom Behavior*
Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

*Requirements for Covid-19*
Members of the CU Boulder community and visitors to campus must follow university, department, and building health and safety requirements and all public health orders to reduce the risk of spreading infectious diseases.

The CU Boulder campus is currently mask optional. However, if masks are again required in classrooms, students who fail to adhere to masking requirements will be asked to leave class. Students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct & Conflict Resolution. Students who require accommodation because a disability prevents them from fulfilling safety measures related to infectious disease will be asked to follow the steps in the "Accommodation for Disabilities" statement on this syllabus.

For those who feel ill and think you might have COVID-19 or if you have tested positive for COVID-19, please stay home and follow the further guidance of the Public Health Office. For those who have been in close contact with someone who has COVID-19 but do not have any symptoms and have not tested positive for COVID-19, you do not need to stay home. See https://www.colorado.edu/healthcenter/coronavirus-updates/symptoms-and-what-do-if-you-feel-sick for further information about what to do.

*Accommodation for Disabilities*
Disability Services determines accommodations based on documented disabilities in the academic environment. If you qualify for accommodations because of a disability, submit your accommodation letter from Disability Services to your faculty member in a timely manner so your needs can be addressed. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance.

If you have a temporary medical condition or required medical isolation for which you require accommodation, please contact ma and your TA when you are able so we can work out appropriate accommodations. Also see Temporary Medical Conditions on the Disability Services website.

*Preferred Names and Pronouns*

My policy is that I will report all suspected violations to the honor code office. If the honor code office finds that you did violate the honor code, you will receive a zero on the affected assignment. Subsequent violations will result in automatically failing the course.

*Use of AI or similar tools*
Students are **not** allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2) on any assignment for this course. Each student is expected to complete each assignment without assistance from AI. Use of AI will be treated as a form of academic dishonesty akin to plagiarism or cheating.

*Sexual Misconduct, Discrimination, Harassment, and/or Related Retaliation*
CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, protected-class discrimination and harassment, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who believe they have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and support resources can be found on the OIEC website.

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of any issues related to these policies regardless of when or where they occurred to ensure that individuals impacted receive information about their rights, support resources, and resolution options. To learn more about reporting and support options for a variety of concerns, visit Don't Ignore It.

*Religious Holidays*
Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, if religious observances affect any(o t)7(h620 g0 G[(a)-.BT/F2 12 dr.025gnm)749dr.0-6( for 0.Qq(a)7(nd s)-6(uppor.m(h62l4f re( H)-6(ol