Course Title: Research Methods and Quantitative Techniques in Policymaking and Management

Course Number: SIPA U6310

Meeting Date/s Times: Wednesdays, 6:10pm-8:00pm

Location: 413 International Affairs Building

Instructor: Selçuk Eren

Office Hours: Wednesdays, 8:00pm-9:00pm in person or by appointment online

Columbia Email Address: se2414@columbia.edu

Teaching Assistant: Clara Berestycki csb2196@columbia.edu

Recitation: Mondays, 9:00am-10:50am

Course Description

This course is about social science research methods, with a heavy focus on quantitative techniques. Students in this course will learn to formulate research and policy questions amenable to empirical inquiry, and to identify and apply appropriate methods of measurement and analysis to answer these questions.

This course begins with the discussion on the formulation of research questions derived from policy and management objectives, followed by the collection and organization of data, and finally the presentation and analysis of facts.

This course emphasizes the conceptual understanding of statistics that can be readily applied in the practice of public management and policy. In terms of statistical methods, the course covers descriptive statistics for univariate and bivariate analysis, such as concepts and measures of central tendency, dispersion and contingency tables, and inferential statistical techniques including chi square, difference in means, and simple and multiple regression analysis.

To complement the lecture, students are introduced to the use of STATA, a computer- based data analysis tool. Later in the semester, the class is divided into groups to work on problems relating

to environmental policy and research. The groups formulate research questions and model, collect, code, clean, and analyze data. Towards the end of the class, students are required to present their finding, and produce an analytical report.

Course Expectations

The grade is based on class participation, problem sets, one midterm exam, and a final presentation and a final paper (details will follow). Pre-class reading, regular attendance at lectures, thoughtful class participation and diligent efforts to do the problem sets are each necessary to master the course.

The students are required to attend weekly lectures, and participate in weekly lab recitation sessions to develop proficiency with the statistical software STATA.

Textbook and Reading

Recommended

Berman, Evan & Xiao Hu. Essential Statistics for Public Managers and Policy Analysts. Third Edition.

James H Stock & Mark Watson. Introduction to Econometrics. Third Edition

David Moore & William Statistics: Concepts & Controversies. Eighth Edition

Method of Evaluation

Regular attendance and active class participation are expected. Students should have done the readings for each lecture before class. Grades for the course will be based on:

Midterm Examination (25%)

The examination will be given in class. Each student is required to take the examination.

Presentation (10%)

Students will present their findings of their independent research. Details will be provided separately.

Research Paper (35%)

Research paper will be due the Final Examinations week.

Problem Sets (20%)

There are 4 problem sets. Problem sets are due to Fridays by the end of the day and no late problem sets will be accepted. You will form groups of 2 people to work on the problem sets.

Attendance and Participation (10%)

Attendance will be taken for both lectures and recitations and is mandatory. Participation is highly encouraged. Both attendance and participation will be graded.

The overall grade will be weighted as above.

However, SIPA policy dictates that a core course such as this one must have a GPA of between 3.2 and 3.4, with the goal of 3.3, a B+. As such, the overall grade will be curved appropriately, with B+ considered a good grade that signifies confidence in your ability to conduct independent work in a professional environment with quality.

A grade of B therefore signifies minor problems that need improvement, and B- signifies significant issues requiring improvement. A and A- are reserved for work that distinguishes itself by going above and beyond a simply correct answer.

Re-Grading Policy

If you feel your solution has been overlooked or graded it incorrectly, please hand in a written note explaining why the particular item should be regarded within two weeks after the problem set/exam was made available for pick-up. Once the two weeks have passed, you forfeit the right for a re-grade.

Course Outline

The following is a preliminary course outline. The lecture schedule and other material are subject to change to accommodate the flow of the course. Additional readings will be posted on CourseWorks before each lecture.

Date	Topic	Reading
Week 1	Introduction and Research Design	Berman & Wang: Chapter 1-3 (p1-60)
Week 2	Sampling and Univariate Analysis	Berman & Wang: Chapter 5-7 (p80-133)
Week 3	Univariate & Bivariate Analysis	Berman & Wang: Chapter 8 (p134-

		147)
Week 4	Probability and Random Variables	
Week 5	Sampling Distributions and Statistical Inference	Readings: will be posted on coursework after Lecture 4
Week 6	Statistical Inference 1 - Hypothesis Testing	Berman & Wang: Chapter 10 (p163-187)
Week 7	Statistical Inference 2 – Difference in Means	Berman & Wang: Chapter 12-13 (p205-238)
Week 8	Statistical Inference 3 – Simple Regression	Berman & Wang: Chapter 14 (p239-251)
Week 9	*Midterm Exam*	Exam will be online. Class time will be a review session
Week 10	Statistical Inference 4 – Multiple Regression I	Berman & Wang: Chapter 15 (p252-260)
Week 11	Statistical Inference 4 – Multiple Regression II	Berman & Wang: Chapter 15 (p261-276)
Week 12	Statistical Inference 5 – Multiple Regression III & Logistic Regression	Berman & Wang: Chapter 16 (p279-286)
Week 13	Student Presentations	
Week 14	*Final Research Paper Due*	

Academic Integrity

The School of International & Public Affairs does not tolerate cheating and/or plagiarism in any form. Those students who violate the Code of Academic & Professional Conduct will be subject to the Dean's Disciplinary Procedures. The Code of Academic & Professional Conduct can be viewed online:

http://bulletin.columbia.edu/sipa/academic-policies/

Academic dishonesty includes failure to properly cite ideas in your work that are not originally yours. Please familiarize yourself with the proper methods of citation and attribution. The School provides some useful resources online; we strongly encourage you to familiarize yourself with these various styles before conducting your research:

http://bulletin.columbia.edu/sipa/academic-policies/

Violations of the Code of Academic and Professional Conduct will be reported to the Associate Dean for Student Affairs.

School Policies and Expectations:

Accessibility Statement – I want you to succeed in this course.
Contact disability@columbia.edu for learning accommodations.

Names/Pronouns – You deserve to be addressed in a manner that reflects your identity. You are welcome to tell me your pronoun(s)and/or name (if different from University records) at any time, either in person or via email.

Discrimination – We embrace the diversity of gender, gender identity & expression, sex, sexual orientation, race, ethnicity, national origin, age, religion, disability status, family status, socioeconomic background, and other visible and non-visible identities. Columbia University does not tolerate unlawful discrimination, discriminatory harassment, sexual assault, domestic violence, dating violence, stalking, or sexual exploitation and all such conduct is forbidden by Columbia University Policy.

Duty to Report – You deserve a University community free from discrimination, harassment, and gender-based misconduct including sexual harassment, sexual assault, domestic and dating violence, stalking, and sexual exploitation. It is therefore University policy to require Columbia faculty and staff to report to EOAA any instance or allegation of prohibited conduct involving any undergraduate or any graduate student that is disclosed to, observed by, or otherwise known to that employee. This requirement to report is in place to help ensure that students are provided appropriate resources and to allow the University to mitigate harm to our community.

Confidential Resources - There are confidential resources on campus who do not have a Duty to Report, including:

- Sexual Violence Response & Rape Crisis/Anti-Violence Support Center (SVR)
- Ombuds Office
- Medical Services
- University Counseling and Psychological Services
- University Pastoral Counseling
- Columbia Office of Disability Services

University employees working in a confidential capacity will not report information shared with them.

Inclusion - In the MPA in Environmental Science and Policy program faculty and staff are committed to the creation and maintenance of "inclusive learning" spaces – classrooms and other places of learning where you will be treated with respect and dignity, and where all individuals are provided equitable opportunity to participate, contribute, and succeed.

In our Research Methods and Quantitative Techniques in Policymaking and Management course, all students are welcome regardless of race/ethnicity, gender identities, gender expressions, sexual orientation, socio-economic status, age, disabilities, religion, regional background, Veteran status, citizenship status, nationality, and other diverse identities that we each bring to class.