Introduction to Quantitative Methods (SYA 7933 / CCJ 5934)
Fall, 2023
Dr. AJ Alvero

Course and instructor information: This course meets on Thursdays from 8:30am to 11:30am EST in the Architecture Building, Room 0423

Contact Information:

    Office: Turlington Hall 3353
    Office hours: Tuesdays from 2:30pm to 3:30pm and/or by appointment
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Course Description: This course provides instruction in the fundamentals of the analysis of quantitative data. The primary goal of this course is to achieve mastery of basic statistical analysis (univariate distributions, tests of bivariate association, bivariate and basic multivariate linear regression) used in social research. We will also review elements of research design such as levels of measurement and sampling. Secondary goals of this course include (1) acquiring the skills necessary for accessing and managing social science data; (2) learning ways to present findings in tables, graphs, and text; and (3) gaining experience with commonly used statistical software.

Text:

D. Weisburd and C. Britt. 2014. *Statistics in Criminal Justice*, 4rd Edition. New York: Springer. [SCJ]

This text is available online for free at the Springer Link website:

    http://link.springer.com/book/10.1007/978-1-4614-9170-5

To access the textbook, you will need access to a UF-networked computer or some type of software that will enable you to establish a Virtual Private Network (VPN) connection such as Cisco Anyconnect Client. You can download Cisco Anyconnect Client here:

    https://it.ufl.edu/ict/documentation/network-infrastructure/vpn/

Course Technology: This course requires the use of a laptop or desktop computer with a high-speed internet connection, a web camera, and a microphone. We will use Stata for statistical computations, data management, and model estimation. You can access Stata through UF Apps. Stata can also be purchased through the GradPlan arrangement that UF maintains with the Stata Corporation (www.stata.com). If you need more information on purchasing Stata, contact the instructor.

Special note: I personally use the R programming language in my own work, and if any students would prefer to use it instead of Stata I wouldn't have a problem. But please note that most faculty in the department (like most faculty in sociology and other social sciences) use Stata.

Attendance Policy: You are expected to attend every class. If you are unable to attend, please notify me via email before class. Each student is permitted one absence. Subsequent absences will result in the loss of a half letter grade (5 percentage points) for each absence.

University Policy on Accommodations for Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (disability.ufl.edu). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

Evaluation Policy: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Assignments: Assignments for the course include a *research project* and a series of *homework assignments*. All assignments are available through Canvas.

Research Project. The research project will involve the application of skills you will learn this semester including accessing data, coding variables, describing univariate distributions, conducting tests of bivariate association, multivariate analyses, and testing hypotheses. The project will include the following sequential parts:

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- Literature review, Hypotheses, and Data/Methods
- Univariate Distributions
- Bivariate Associations
- Multivariate Analysis
- Discussion of Findings

Due dates are provided in Canvas. The research project will account for 40% of your final grade.

Professional Poster. At the end of the semester, you will submit a professional poster summarizing your research project. The poster will account for 20% of your final grade.

Homework Assignments. Regular (approximately 8) homework assignments are designed to provide an opportunity for practicing and applying the concepts discussed in class. Due dates for homework assignments are provided in Canvas. Please submit homework via Canvas on or before the due date. Homework assignments will account for 40% of the final grade.

Grading Policy: Research and homework assignments will be given a numeric score ranging from 0 to 100. If an assignment does not receive a passing grade, you will have the opportunity to revise the assignment to achieve a passing score (80). Revisions must be submitted within a week after the assignment is returned. You may revise no more than two assignments during the semester. Late assignment will receive a five-point reduction for each day past the due date. Final grades will be assigned based on the following thresholds (a grade of "B" or higher is necessary to pass this course):

Score	Final Grade
93 - 100	A
90 - 92	A-
87 - 89	B+
80 - 86	B
0 - 79	Fail to pass

Schedule of Topics [*]

Date	Topic(s)	Assigned Readings
August 24	Organizational Meeting	
August 31	Level of Measurement; Sources of Social Science Data	Chapter 1,2
September 7	Displaying and Graphing Data; Introduction to Stata	Chapter 3
September 14	Univariate Distributions	Chapter 4,5
September 21	Sampling, Statistical Inference, and Hypothesis Testing; Variable Coding and Construction	Chapter 6,7,8
September 28	Association between Two Interval Variables	Chapters 14
October 5	Association between Nominal and Interval Variables	Chapter 11,12
October 12	Association between Two Nominal Variables	Chapters 9
October 19	Nonparametric Measures of Association	Chapter 13
October 26	Bivariate Regression, Part 1	Chapter 15, pp. 439-452
November 2	Bivariate Regression, Part 2	Chapter 15, pp. 453-470
November 9	Multivariate Regression with Two Independent Variables	Chapter 16, pp. 481-495
November 16	Multivariate Regression with Nominal Variables	Chapter 16, pp. 496-505
November 23	No class (Thanksgiving holiday)	
November 30	Multivariate Regression with Three or More Independent Variables; introduction to Logistic Regression	Chapter 18

* Course topics and may shift according to the pace of the class.