Quantitative Research Methods (SYA 6407)  
And  
Research Methods in Crime, Law, and Justice (CCJ 6705)  
Spring, 2015  
Dr. Chuck Peek

Course and instructor information: This course meets on Wednesdays from 9:35am – 12:35pm (periods 3-5) in Rinker Hall (RNK), room 106. There is no separately scheduled lab for this course. Demonstrations and exercises will be conducted periodically during class.

Here is my contact information:

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Julia Arroyo (arroyo@ufl.edu) will be the grader for this course.

Course Description: This course serves as an overview of the principles, interpretation, and application of multivariate regression. The primary goal of this course is to provide background and experience with a commonly used analytical technique in Sociology, Criminology, and other social sciences: multiple linear regression. This type of statistical model is appropriate when dealing with a continuous dependent variable. We will discuss topics such as estimation, variable coding, managing missing data, and modeling nonlinear and nonadditive relationships. A secondary goal of this course is to provide an introduction to a linear model that can be used when the dependent variable is discrete (e.g. dichotomous): logistic regression.

Texts:


The books by McClendon and Pampel may be purchased online from retailers such as Amazon.com or Barnes and Noble. The book by Weisburd and Britt is available online at the Springer website. To access the online version, go to the follow URL from a computer in the UF domain:


You may also purchase a “no frills” printed copy for $24.95. For ordering information, click on “MyCopy Softcover Edition” from the SpringerLink site.
A number of journal articles will be used to illustrate the application of linear regression. These articles will be available online unless indicated otherwise. To access JSTOR and other library resources from outside the UF domain, either use a Virtual Private Network (VPN) connection or follow the instructions provided on the UF library website for off-campus Access. Please contact me if you have any difficulty accessing these articles. I reserve the prerogative to add, delete, or substitute material from the reading list as necessary to clarify and illustrate concepts central to the course.

**Software:** We will use Stata for data management and model estimation. Please install Stata on your laptop and bring your laptop to class every week. Stata can be purchased through the GradPlan arrangement that UF maintains with the Stata Corporation ([www.stata.com](http://www.stata.com)). For the type of analysis we will be doing in the course, I recommend purchasing a license for Stata/IC. Temporary licenses are available (6 and 12 months). However, if your research plans include analysis of quantitative data beyond this year or if you plan to enroll in an advanced quantitative methods course in this department, consider a perpetual license. Stata/SE or Stata/MP can also be used for this course, but are considerably more expensive. Please avoid purchasing a license for Small Stata as it is intended for use with relatively small data sets (1200 or fewer observations).

**Assignments:** Assignments for the course include a *research project* and a series of *homework assignments*. The research project will be divided into three parts: a proposal, a poster session presentation, and a research paper. The goal of the project is to provide and opportunity to gain experience using multivariate regression by employing linear models to explore causal relationships in your area of interest. You are expected to incorporate multiple elements covered in the course (e.g., interaction effects) into your project.

**Proposal.** In the initial phase of the research project, you will develop a research proposal based on a topic or research question in your area of interest. The proposal will identify the basic research question(s), list the specific aims, describe important theories or conceptual frameworks, discuss relevant studies, identify the data source, and describe the measurement of key concepts. An outline is linked to the course webpage. The proposal should be 5-7 pages and will account for 20 percent of the final grade. If you have not already done so, you will also need to submit an IRB protocol to get approval for your research. Normally, an exemption is granted for projects involving secondary analysis of publically available data.

**Poster Session.** During the next phase of the research project, you will present a summary of your research project in a poster session and will have an opportunity to field questions on your project. The format will be similar to poster sessions at professional meetings. The presentation will account for 20 percent of the final grade.

**Research Paper.** The final phase of the research project will consist of a research paper. In this phase, you will describe the rationale for the investigation and develop a conceptual framework; propose a set of hypotheses; describe the data, measures, and analytical approach; present the findings in textual and tabular format; and discuss the findings and their theoretical and practical implications. This paper will be similar to a manuscript prepared for submission to a peer-reviewed journal and will account for 40 percent of the final grade.

**Homework Assignments.** Regular (approximately weekly) homework assignments are designed to provide an opportunity for practicing and applying the concepts discussed in class. The
number of assignments will depend on the pace of the course. Due dates will be announced in class at the time the homework assignment is assigned. Homework will account for 20 percent of the final grade. Please submit homework via email.

A Note on Grading. I have noticed a disconnection between evaluation in graduate seminars and the way that our research is evaluated professionally. In graduate seminars, letter grades or some equivalent (such as S/U) are commonly used. However, the review process for manuscripts used by peer-reviewed journals, many book publishers, and some professional meetings involve a series of critiques, revision, and resubmission. Since one of the objectives of this course is to prepare you to conduct social science research, I would like to adopt a style of evaluation that is similar to the peer-review process. Each of your assignments will be treated as “submissions”. Julia and I will serve as reviewers providing you with comments and suggestions for correcting errors and improving the quality of your analysis, writing, and presentation. When your work has reached a sufficiently high level of quality, your assignment will be “accepted”. (Acceptance is equivalent to earning a grade of “A”.)
Tentative Schedule of Topics:

January 7 – Organizational Meeting and Review of Correlation

Readings:
McClendon chapter 1
Weisburd and Britt chapter 14 (review pages 399-411)

January 14 – Bivariate Regression

Readings:
McClendon chapter 2
Weisburd and Britt chapter 15 (pages 440-457)

January 21 – Bivariate Regression (continued)

Readings:
McClendon chapter 4 (pp. 133-157)
Weisburd and Britt chapter 15 (pages 458-470)

January 28 – Multivariate Regression with Two Independent Variables

Readings:
McClendon chapter 3 (pp. 60-107), chapter 4 (pp. 157-161)

February 4 – Multivariate Linear Regression with Three or More Independent Variables

Readings:
McClendon Chapter 3 (pp. 107-118), Chapter 4 (pp. 161 - 172)
Weisburd and Britt chapter 16 (review pp. 482-492)

February 11 – Dummy Coding for Nominal Independent Variables

Readings:
McClendon Chapter 5 (pp. 198 - 214)
Weisburd and Britt chapter 16 (pp. 494 - 504)

February 18 – Examples of Applications of Linear Regression

Readings:


1 Course topics and due dates may shift according to the pace of the class.
February 25 – Missing Data

Readings: TBA

RESEARCH PROPOSALS DUE

March 4 – Spring Break

March 11 – Nonlinear Relationships

Readings:
McClendon chapter 6
Weisburd and Britt chapter 17 (pp. 515 – 522)

March 18 – Nonadditive Relationships (a.k.a. Statistical Interaction)

Readings:
McClendon chapter 7
Weisburd and Britt chapter 17 (pp. 522-534)

March 25 – Nonadditive Relationships (continued)

Readings:


April 1 – Regression Diagnostics

Readings:
McClendon chapter 4 (pp. 174-195)
Weisburd and Britt chapter 17 (pp. 534-537)

April 8 – Logistic Regression

Readings:
Pampel chapters 1-3
Weisburd and Britt chapter 18


April 15 – Multinomial and Ordinal Logistic Regression

Readings:
Weisburd and Britt chapter 19


April 22 – Poster Session (location TBA)

Research Papers and all other assignments are due (via email) on Friday, April 31.