Quantitative Reasoning in Anthropological Research

ANG-6486-001, CRN No. 14960, 3 credit hours, Spring 2015
Prof. Clifford T. Brown, Department of Anthropology, Florida Atlantic University

Meeting place: SO190, **Class time**: Tuesday, 6:00-8:50 pm
Instructor contact information: Office: SO172, Phone number: (561) 297-3232, E-mail: ctbrown@fau.edu, Web site: http://www.fau.edu/~ctbrown, Office hours: 1400-1700 Tuesdays and Thursdays, and by appointment.
Catalog description: "Introduction to the process of conducting quantitative research in anthropology and developing an anthropological database suitable for statistical application."
Objectives: The general goal of the course is to help students achieve basic statistical literacy and to familiarize them with statistical reasoning so that they are prepared to carry out their thesis research. The course will emphasize concepts and approaches rather than rote calculations. Specifically, the class introduces graduate students to the process of conducting quantifiable research in the three branches of anthropology taught in the department: cultural anthropology, biological anthropology, and archaeology. The course is designed to help students learn the concepts, procedures, and techniques necessary to perform the quantitative analyses for their thesis research, as well as introducing them to the quantitative ideas that they need to understand to read and evaluate statistical arguments in the anthropological literature. The course covers research design; sampling; measurement; data visualization; and descriptive, exploratory, and inferential statistics. The methods to be covered include a variety of distribution- and scale-free techniques as well as more conventional (parametric) statistics. There are no prerequisites. This course is required for the Master's degree in Anthropology.
Readings: Textbook: *Statistics for Anthropology, Second Edition* by Lorena Madrigal, Cambridge University Press, 2012. Additional readings may be assigned for discussion in class. If possible, they will be posted on the class Blackboard web site.
Accessibility Statement: "In compliance with the Americans with Disabilities Act (ADA), students who, due to a disability, require special accommodation to properly execute course work must register with the Office for Students with Disabilities (OSD) -- in Boca Raton, SU 133 (561-297-3880); in Davie, LA 240 (954-236-1222); in Jupiter, SR 110 (561-799-8010) -- and follow all OSD procedures."
Assignments and grading: Homework includes watching online videos and practice problems. Homework assignments and quizzes will compose 25% of the final grade. The midterm and final exams are each worth 25% of the final grade. The class project and paper will compose the final 25% of your grade. The project will focus on the analysis of a data set that you choose, perhaps because of its similarity to the data you hope to collect for your thesis. You may collect original data if you wish, although it may not be advisable. You will explain in your paper the purpose of the analysis (i.e., the problem), state your hypotheses, describe the data, explain and justify your statistical tests, and report the results. I encourage you to consult me about data sources and sets. Use the *American Antiquity* or *American Anthropologist* style for formatting citations and references in written assignments. Please feel free to contact me for help in using references in your papers. To avoid plagiarism, all factual statements in your papers should normally have citations indicating their sources.
Policies: Class attendance is mandatory except for officially excused absences. I may make exceptions, at my discretion, in individual cases if you contact me in advance.

Please come to class prepared to discuss the readings, homework, and your project. You should attend classes because they are core of the educational experience. I will teach the essential material of the class in the classroom. You cannot make up the same material merely by reading the textbook. I use the lecture to share with you significant information that does not appear in the text. My lectures will also highlight the most important ideas for you. Classes are also your best opportunities to ask questions and discuss the concepts with me and your peers. Poor attendance will inevitably affect your grade, either directly or indirectly.

Make-up exams for missed tests will not normally be given except under extraordinary circumstances that can be clearly documented. The final exam time and date are set by the registrar. I

have no control over them. Please consult the registrar's web site to learn the time and date of the exam, which often differ from the normal class time and day.

University policy on the use of electronic devices says: "In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions." So, no texting or cell phone calls.

No cheating or plagiarism will be tolerated. All work must be your own original work. Although students are more than welcome to study together, and I even encourage it, homework must reflect your own work. Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see the Code of Academic Integrity in the University Regulations at http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf.

Schedule and outline of course topics: Please note that the schedule and outline is, like the federal budget, only a plan. Changes are likely, but we will discuss them in class in advance. Many class sessions will include time set aside for discussion of your projects. Reading assignments are listed for week they should be done in anticipation of the next week when they will be discussed. They refer to the textbook unless otherwise noted.

Week 1: Introduction to the class. History of quantitative analysis in anthropology. Research design: Theory, data and analysis in anthropology. Research design. Read "A Brief History of Statistics in Anthropology" and Chapters 1 and 2 in textbook.

Week 2: Data. Measurement. Tables and graphs. Descriptive stats. Read Chapter 3.

Week 3: Sampling and probability. Read Chapter 4.

Week 4: Hypothesis testing. Read Chapter 5.

Week 5: Differences of means, t-test. Read Chapter 6.

Week 6: ANOVA. Midterm Review.

Week 7: Midterm. Read Chapter 7.

Week 8: Hypothesis testing continued, Non-parametrics. Categorical data. Read Chapter 8.

Week 9: Hypothesis testing continued, Categorical data. Read Chapter 9.

Week 10: Correlation. Read Chapter 10.

Week 11: Regression. Read Chapter 11.

Week 12: Logistic regression.

Week 13: Cluster analysis.

Week 14: Conclusion. Review for Final exam. Project paper due.

Final exam scheduled by Registrar (but subject to change): Tuesday, April 28 7:00 pm–9:30 pm in SO 190.