

**Quantitative Methods in Anthropology**  
**ANT 4931, Spring 2007**  
**Tuesday & Thursday, 3:05-4:20pm, 51/1201**

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**COURSE SYLLABUS:**

This document is the syllabus for *Quantitative Methods in Anthropology*. As such it is the controlling document for the class. Below you will find most of the information you need to successfully pass this course. **You are responsible** for knowing all the information presented in this document. **I will not accept any excuses** that involve you not reading this syllabus and understanding its contents.

**COURSE PREREQUISITES:**

There are no prerequisites for this course. There is no assumption that student have an familiarity or knowledge of statistical techniques or quantitative analyses. It is recommended that students have completed the Anthropology Junior Seminar (ANT 3091) prior to enrolling in this course. [*Spring 2007 student: This recommendation is moot, given that the Junior Seminar class has yet to be offered at UNF.*]

**COURSE DESCRIPTION:**

This course is structured to provide students with the analytic background necessary to conduct and evaluate quantitative research in Anthropology. The major foci of the class will be on; unit construction and data collection protocols, the statistical tools necessary to conduct analysis of data sets; the design of scientifically valid research projects, and the graphical display of quantitative data. Examples from all four fields of anthropology will be presented in order to provide a broad empirical perspective. Additionally, this course will cover issues relating to research design, sampling, and ethics.

In this course, students will receive hands-on training in the collection, use, analysis, and display of quantitative data. Student will be required to complete assignments with numerous example datasets. In some cases, students will be required to work problems *the old-fashioned way*; that is, with paper and pencil. However, students will also be instructed in the various computer software packages currently available for data manipulation (including popular database, spreadsheet, and statistical programs). Students will learn to use the Statistical Package for the Social Sciences (SPSS) software system for computations involving larger datasets, simple univariate and bivariate comparisons, parametric and non-parametric techniques, more complex multivariate approaches, hypothesis testing, regression and correlation, diversity statistics, resampling and Monte Carlo modeling, and appropriate graphical displays of quantitative data.

**COURSE TEXTS:**

Weekly readings will be drawn from the following texts and should be completed prior to the date for which they are assigned.

Rowntree, Derek

2004 *Statistics without Tears: A Primer for Non-Mathematicians*, Classic Edition,  
Pearson, Boston.

George, Darren & Paul Mallery

2007 *SPSS for Windows Step by Step: A Simple Guide and Reference 14.0 Update*,  
Pearson, Boston.

Additional, supplemental readings may also be required. These readings will be made available on the course Blackboard site.

**COURSE BLACKBOARD SITE:**

This course is accompanied and supported by a Blackboard website. Each students officially enrolled in the course will have access to this site, and all course requirements will be available on it. It is extremely important that you make sure you know how to access the Blackboard site and familiarize yourself with its content.

**COURSE DATASETS:**

This course will require students to work with a variety of quantitative dataset. In most cases, these dataset will be made available via the course Blackboard site. Students should make themselves familiar with how to access the data files or should contact the professor for assistance.

**COURSE REQUIREMENTS/GRADE DETERMINANTS:**

Student final grades will be determined on the basis of 10 assigned problem sets (6% each), a Mid-Term exam (20%), and a Final exam (20%). No extra credit assignments will be offered.

Problem Sets Assignments: Ten problem sets will be assigned throughout the semester. These will be collected on the Tuesdays listed in the course schedule. Late problem sets will not be accepted without **prior** approval of the instructor. Problem sets will require student to apply quantitative analysis techniques to a set (or sets) of anthropological data or to use their analytical skills to investigate quantitative information. Assignments will be graded on a three point scale of zero (Ø), check (√), or check-plus (√+). These grades are roughly equivalent to “not passing”, “passing”, and “high pass”.

Exams:

Exams will be designed to test Students’ abilities in utilizing the methods, concepts, and techniques covered in lecture. The exams will require students to complete analyses both using computer software and (to a limited extent) by hand. The Mid-term exam will take place during the February 22<sup>nd</sup> class period. The Final exam will be a take-home exam administered during the 16<sup>th</sup> week of the semester. No make-up exams will be given without either prior consent or appropriate justification. You must communicate to me your interest in taking a make-up within 2 days of the exam date. If you request a make-up exam, be prepared to provide me with documentation. Documentation must be dated, as well as relevant and specific to your excuse.

The format of Make-up exams will be at the discretion of the Professor.

**Final Grading Scheme:**

<u>Criteria/Item</u>	<u>No.</u>	<u>Value per</u>	<u>Total value</u>
Assignments	10	6% each	60%
Mid-Term Exam	1		20%
Final Exam	1		20%
TOTAL			100%

Letter grades (for both exams and final grades) will be based upon the following categories: 100-93 (A), 92-90 (A-), 89-87 (B+), 86-83 (B), 82-80 (B-), 79-77 (C+), 76-70 (C), 69-60 (D), ≤59 (F)

*I will not discuss individual grades via e-mail or the phone. You must see me in person to discuss the specifics of your grade.* The student handbook outlines procedures for students wishing to appeal academic decisions.

**Any student found engaging in academic misconduct (as defined by the University of North Florida) will be subject to appropriate disciplinary action.** The current student handbook contains a detailed

discussion of the University’s policy on academic misconduct. Violations of academic integrity include; cheating, fabrication or falsification of information or documents, plagiarism, abuse of academic materials, and complicity in academic misconduct. Students may be subject to any and all of the following; academic counseling, reprimand, a failing grade for the assignment that involved the misconduct, a failing grade for the course, and referral of the behavior to the Departmental Chair or appropriate Dean. Again, the student handbook outlines procedures for students wishing to appeal the academic decisions of the Professor.

**The United States government, the University of North Florida, and I are all committed to guaranteeing a learning environment in which reasonable accommodations are made for individuals with disabilities.** In accordance with the federal Americans with Disabilities Act of 1999, any students in need of assistance or alternative learning arrangements are encouraged to contact either me or the University's Disabled Services Program office (located in Building 10, Room 1201, 620-2769 Voice/TDD, 620-3874 FAX, URL: <http://www.unf.edu/dept/disabled-services/>).

**Extra Credit:** No extra credit projects will be available. The only way to receive a passing grade in this course is to complete the course requirements. Do not assume that you can "blow off" or otherwise perform poorly on the lectures, exams, and assignments and then expect me to provide you with a way to improve your grade.

**Attendance:** Attendance to lectures is not mandatory, *however* it is necessary for successful completion of the course. A great deal of the learning of this course occurs during lectures. In lecture, we will be discussing key statistical methods, concepts, and ideas. Lectures will also be the place and time when we will learn how to conduct many of the statistical techniques you must learn to pass this course. If you must miss a lecture, it is your responsibility to make sure you find out the information that you missed. I suggest you find a classmate at the beginning of the semester who is willing to share their notes with you if you do miss a class (and vice versa). Do not ask me to provide a copy of my lecture notes or slides. Late arrival to class is disruptive and impolite to both the other students and me. Therefore, I reserve the right to deduct points from your final grade and habitual tardiness will result in a lowered final grade.

**Participation:** Participation in classroom discussions and activities is strongly encouraged and will positively affect your grade. Lack of participation will negatively affect your grade. I will strive to create a class atmosphere that is congenial, enjoyable, and relaxed. However, I expect all students to treat each other and me with courtesy and respect. All reasonable opinions regarding course materials will be acceptable for discussion and comment. No opinions or speech which discriminates against or is derogatory towards others on the basis of race, ethnicity, national origin, religion, sex, sexual orientation, age, political affiliation, or disability will be tolerated. Students expressing such opinions will be asked to leave the classroom immediately. I reserve the right to re-direct or curtail discussions that diverge from the course goals or lecture topic. I am happy to answer questions about the day's topics during my lecture (though I may ask that you defer your question till a more appropriate part of the class period). You are also welcome to e-mail me questions.

#### **E-MAIL:**

E-mail is often the best method for communicating with me and I encourage you to e-mail me whenever you may have a question, concern, or comment. E-mailing me is also an excellent way for you to make sure I remember something. (I will often ask students to e-mail me so that I have a tangible reminder of what I might need to do to assist them.) Please make sure you identify yourself (full name) and which of my courses you are taking. If I do not know who you are, then I can not assist you. Make sure your return e-mail address is correct and operational. If my reply bounces, I will not try again. Use proper punctuation, spelling, grammar, complete sentences, etc. DO NOT use text-messaging abbreviations. If I can not understand your message, then I can not assist you. If you are writing an e-mail longer than a paragraph or two, then consider speaking to me in person. I respond to all e-mails as quickly as possible. In some cases this may take a day or two. Do not assume that I received your message unless you receive a reply back from me. Please do not forget that UNF e-mail is a public form a communication. As such, I do not discuss the specifics of anyone's grades via e-mail.

#### **CELL PHONES, PAGERS, & OTHER WIRELESS COMMUNICATION DEVICES:**

All such devices must be turned off during class periods. Students who require an exception to this rule may discuss the situation with me. Anyone caught using any of these items during an exam will be treated as if they are cheating.

#### **OFFICE HOURS:**

My office hours are listed above. If you need to meet with me and can not meet during these times, please contact me. I am happy to arrange a time to meet that is convenient for both of us. Please take advantage

of my office hours to come see me and discuss questions or concerns you might have. If you are interested in majoring or minoring in Anthropology, my office hours are a good time to discuss this with me. It is sometimes necessary for me to cancel my scheduled office hours. If so, I will do my best to make sure I make this announcement in class. If I am not in my office during scheduled office hours, or am busy with other students, please e-mail me so that I can arrange a time for us to meet. Your time is valuable and your questions and concerns are important to me. I am committed to making sure I am available to offer any help that I can. *If you wish to discuss the specifics of your grade, you must meet with me personally. I will not discuss your grades with you via e-mail or the phone.*

**Tips for Successfully Completing this Course:** (1) complete the readings (2) complete all of the assignments, (3) attend all lectures, (4) study for the exams, and (5) participate in classroom discussions.

**COURSE OBJECTIVES:**

This course is designed to provide students with hands-on training in the collection, use, analysis, and display of quantitative data. Upon successful completion of this course, students will be able to:

- Complete parametric and non-parametric statistical analyses of various Anthropological datasets
- Use various computer software packages currently available for data manipulation (including popular database, spreadsheet, and statistical programs)
- Use the Statistical Package for the Social Sciences (SPSS) software system for computations involving large datasets
- Calculate simple univariate and bivariate comparisons
- Understand and evaluate complex multivariate statistical approaches (including the basic premises and methods of bio-distance metrics)
- Complete regression and correlation analyses
- Engage in statistical hypothesis testing
- Understand and calculate basic diversity statistics
- Be able to explain simple resampling techniques
- Construct appropriate graphical displays of quantitative data
- Explain the importance of ethical data collection, analysis, and curation
- Construct a statistically and theoretically valid research design involving quantitative data

## COURSE SCHEDULE

*(This schedule is subject to change at the discretion of the professor.)*

Week	Date	Conceptual Topics	Readings	Assignment Due Dates
Week 1	Tue. 9-Jan	• Syllabus		
	Thur. 11-Jan	• Data, Samples, Populations • Variables, States, Variates	Rowntree Introduction & Ch. 1; George & Mallery Ch. 1-3; Economist "Bayes Rules"	
Week 2	Tue. 16-Jan	• Data Collection, Structure, & Ethics	Rowntree Ch. 2; George & Mallery Ch. 4-6	<b>Assignment 1</b> Data Entry Exercise
	Thur. 18-Jan	• Levels of Measurement • Accuracy, Precision, & Validity		
Week 3	Tue. 23-Jan	• Units of Analysis	Rowntree Ch. 3	<b>Assignment 2</b> Charts
	Thur. 25-Jan	• Measures of Central Tendency	George & Mallery Ch. 7; Gould 1996	
Week 4	Tue. 30-Jan	• Measures of Dispersion	Rowntree Ch. 4	<b>Assignment 3</b> Descriptives
	Thur. 1-Feb	• Basic Probabilities		
Week 5	Tue. 6-Feb	• Research Design & Sampling	Rowntree Ch. 5	
	Thur. 8-Feb	• The Normal Distribution	George & Mallery Ch. 17 (pp. 208-210, 212-214); Box 1987	
Week 6	Tue. 13-Feb	• Assessing Normality	George & Mallery Ch. 17 (pp. 216)	<b>Assignment 4</b> Testing Normality
	Thur. 15-Feb	• Hypothesis Testing		
Week 7	Tue. 20-Feb	• $\alpha$ and $\beta$ errors • Power	George & Mallery Ch. 11	
	Thur. 22-Feb	<b>Mid-Term Exam</b>		
Week 8	Tue. 27-Feb	• Comparing Samples	Rowntree Ch. 6; George & Mallery Ch. 11 redux, 17 (pp. 211)	<b>Assignment 5</b> CI & Z-Scores
	Thur. 1-Mar	• Basic Bivariate Comparisons	George & Mallery Ch. 9	
Week 9	Tue. 6-Mar	• Crosstabulations	Rowntree Ch. 7; George & Mallery Ch. 8, 17 (pp. 217)	<b>Assignment 6</b> t-tests
	Thur. 8-Mar	• Correlation	George & Mallery Ch. 10	
Week 10	Tue. 13-Mar	• Independent & Dependent Variables	Rowntree Ch. 8	<b>Assignment 7</b> Chi-squared
	Thur. 15-Mar	• Regression	George & Mallery Ch. 15	
Week 11	Tue. 20-Mar	<b>Spring Break</b>		
	Thur. 22-Mar	<b>Spring Break</b>		
Week 12	Tue. 27-Mar	• ANOVA I	George & Mallery Ch. 12	<b>Assignment 8</b> Corr/Reg
	Thur. 29-Mar	• ANOVA II	George & Mallery Ch. 13, 17 (pp. 218-220)	
Week 13	Tue. 3-Apr	• Multivariate Techniques I	George & Mallery Ch. 16; Gould 1986	<b>Assignment 9</b> ANOVA
	Thur. 5-Apr	• Multivariate Techniques II	George & Mallery Ch. 20-22	
Week 14	Tue. 10-Apr	• Diversity Statistics – Richness	Rakita 2001	<b>Assignment 10</b> Use of Stats in Article
	Thur. 12-Apr	• Diversity Statistics - Evenness		
Week 15	Tue. 17-Apr	• Resampling I		
	Thur. 19-Apr	• Resampling II		
Week 16	Tue. 24-Apr	<b>Final Exam &amp; SAA Meetings</b>		
	Thur. 26-Apr	<b>Final Exam &amp; SAA Meetings</b>		