

**Fayetteville State University**  
**College of Arts and Sciences**  
**Psychology**  
**PSYC500-01: Statistics**  
**Fall 2009**

**I. Locator Information:**

Instructor: Thomas E. Van Cantfort  
 Course # and Name: PSYC500-01 Statistics Office Location: 223 LJTB  
 Semester Credit Hours: 3 Office hours: T & Th 4:00 – 5:00PM  
 Day and Time Class Meets: Thursday Office Phone: 910.672.1413  
 Total Contact Hours for Class: 40  
 Email address: tvancantfort@uncfsu.edu

**The following statement should appear on the first page of each course syllabus:**

**FSU Policy on Electronic Mail:** Fayetteville State University provides to each student, free of charge, an electronic mail account ([username@uncfsu.edu](mailto:username@uncfsu.edu)) that is easily accessible via the Internet. The university has established FSU email as the primary mode of correspondence between university officials and enrolled students. Inquiries and requests from students pertaining to academic records, grades, bills, financial aid, and other matters of a confidential nature must be submitted via FSU email. Inquiries or requests from personal email accounts are not assured a response. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.

Rules and regulations governing the use of FSU email may be found at  
<http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf>

**II. Course Description:**

An advanced statistics course including such topics as probability, the binomial and Poisson distribution, linear regression and multiple correlational techniques, analysis of variance, and several non-parametric tests of significance.

**III. Disabled Student Services:** In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1<sup>st</sup> Floor); 910-672-1203.

**IV. Textbook:**

Field, A. (2009). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage Publication Ltd. ISBN # (978-1-84787-907-3)

**CALCULATOR:**

You will need a scientific calculator to do your homework assignments and take the exams in this course. A business calculator will not work since all but the most expensive ones do not have the simple statistical functions you will need. At the minimum, your calculator must be able automatically to compute  $\sum X^2$  and the  $\sum X$ . I recommend the Texas Instruments TI36X.

**V. Student Learning Outcomes**

The successful student is expected to master the following competencies:

- a. Be able to compute and interpret descriptive statistics.
- b. Be able to compute and interpret probabilities.
- c. Be able to setup and test statistical hypotheses.

- d. Be able to estimate and interpret population parameters.
- e. Be able to compute and interpret tests between two independent samples.
- f. Be able to compute and interpret tests between two dependent samples.
- g. Be able to compute and interpret tests among multiple independent samples.
- h. Be able to compute and interpret tests among multiple dependent samples.
- i. Be able to use SPSS to do above analyses.

### **FSU Policy on Disruptive Behavior in the Classroom (Optional)**

The *Code of the University of North Carolina* (of which FSU is a constituent institution) and the *FSU Code of Student Conduct* affirm that all students have the right to receive instruction without interference from other students who disrupt classes.

FSU Core Curriculum Learning Outcome under Ethics and Civic Engagement (6.03): All students will “prepare themselves for responsible citizenship by fulfilling roles and responsibilities associated with membership in various organizations.” Each classroom is a mini-community. Students learn and demonstrate responsible citizenship by abiding by the rules of classroom behavior and respecting the rights all members of the class.

The FSU Policy on Disruptive Behavior (see FSU website for complete policy) identifies the following behaviors as disruptive:

1. Failure to respect the rights of other students to express their viewpoints by behaviors such as repeatedly interrupting others while they speak, using profanity and/or disrespectful names or labels for others, ridiculing others for their viewpoints, and other similar behaviors;
2. Excessive talking to other students while the faculty member or other students are presenting information or expressing their viewpoints.
3. Use of cell phones and other electronic devices
4. Overt inattentiveness (sleeping, reading newspapers)
5. Eating in class (except as permitted by the faculty member)
6. Threats or statements that jeopardize the safety of the student and others
7. Failure to follow reasonable requests of faculty members
8. Entering class late or leaving class early on regular basis
9. Others as specified by the instructor.

The instructor may take the following actions in response to disruptive behavior. Students should recognize that refusing to comply with reasonable requests from the faculty member is another incidence of disruptive behavior.

1. Direct the student to cease disruptive behavior.
2. Direct the student to change seating location.
3. Require student to have individual conference with faculty member. At his meeting the faculty member will explain the consequences of continued disruptive behavior.
4. Dismiss from class for the remainder of the period (must be reported to department chair.)
5. Lower the student’s final exam by a maximum of one-letter grade.
6. File a complaint with the Dean of Students for more severe disciplinary action.

### **VI. Course Requirements and Evaluation Criteria:**

- a. There will be a minimum of three (3) exams (each exam is a comprehensive exam), each worth 50 points. Consult the syllabus for the dates of these exams.

- b. There will be weekly homework assignments. You must show all of your work. Partial credit will be given if the method is correct but the computation is incorrect. If only correct answers are provided, no credit will be given. Late assignments will not be accepted.
- c. There are **NO** make-ups for any missed exams. The final grade will be based on the three (3) exams and the homework assignments.
- d. If you miss one (1) exam you cannot pass the course.
- e. The total points that can be earned in this class is 200 plus the homework. Final grades will be determined according to the following schedule:

$A \geq 90\%$  of highest total points  
 $B \geq 80\%$  and  $< 90\%$  of highest total points  
 $C \geq 70\%$  and  $< 80\%$  of highest total points  
 $F < 70\%$  of highest total points

**Please note: If these evaluation criteria must be revised because of extraordinary circumstances, the instructor will distribute a written amendment to the syllabus.**

**VII. Academic Support Resources** – Site any academic support resources available in this class. Use of SI, Smarthinking, Criterion, University College Learning Center

**VIII. Course Outline and Assignment Schedule:**

Aug. 20 Th.	Introduction to Data Collection & Analysis	Ch. 1, pp. 1 – 29
Aug. 27 Th.	Building Statistical Models	Ch. 2, pp. 31 - 60
Sept. 3Th.	Exploring Data with Graphs	Ch. 4, pp. 87 - 130
Sept. 10 Th.	Exploring Assumptions	Ch. 5, pp. 131 - 165
Sept. 17 Th.	Correlations	Ch. 6, pp. 83 - 93
Sept. 24 Th.	<b>TEST I</b>	
Oct. 1Th.	Regression	Ch. 7, pp. 197 - 263
Oct. 8Th.	Comparing Two Means	Ch. 9, pp. 316 - 364
Oct. 15 Th.	Comparing Several Means ANOVA	Ch. 10, pp. 374 - 394
Oct. 22 Th.	Analysis of Co-variance ANCOVA	Ch. 11, pp. 395 - 420
Oct. 29 Th.	Factorial Analysis of Variance	Ch. 12, pp. 421- 456
Nov. 5 Th.	<b>TEST II</b>	
Nov. 12 Th.	Repeated Measures Designs	Ch. 13, pp. 457 - 505
Nov. 19 Th.	Mixed Design ANOVA	Ch. 14, pp. 506 - 538
Nov. 26 Th.	<b>HOLIDAY</b>	

Dec. 3 Th. Non-Parametric Tests

Ch. 15, pp. 539-583

Dec. 10 Th. **TEST III**

**IX. Teaching Strategies**

This course will be taught using both lecture and computer lab experience.

**X. Bibliography**

- Allison, D. B., Gorman, B. S., & Primevera, L. H. (1993). Some of the most common questions asked of statistical consultants: Our favorite responses and recommended readings. *Genetic, Social, & General Psychology Monographs, 119*, 153-185.
- Bierman, H., Bonini, C. P., & Hausman, W. H. (1991). *Quantitative analysis for business decisions*. Burr Ridge, IL: Richard Irwin.
- Borack, J. I. (1997). A technique for estimating the probability of detecting a nongaming drug user. *The American Statistician, 51*, 134-137.
- Borenstein, M., Cohen, J., & Rothstein, H. (1997). *Statistical power analysis, power and precision!* Mahwah, NJ: Lawrence Erlbaum.
- Carroll, J. D., & Green, P. (1997). *Mathematical tools for applied multivariate analysis* (3<sup>rd</sup> ed.). New York: Academic Press.
- Fischer, J., & Corcoran, K. J. (1994). *Measures for clinical practice: A sourcebook* (2<sup>nd</sup> ed.). New York: Free Press.
- Fisher, R. A. (1925). *Statistical methods, experimental design, and scientific inference*. Oxford: Oxford University Press.
- Myer, R. (1990). *Classical and modern regression with applications* (2<sup>nd</sup> ed.). Boston, MA: Duxbury.
- Pearson, K. (1900). On the criterion that a given system of deviations from the probable in the case of a correlated system of variables is such that it can be reasonably supposed to have arisen from random sampling. *Philosophical Magazine, 50*(5), 157 – 175.
- Spearman, C. (1910). Correlation calculated with faulty data. *British Journal of Psychology, 3*, 271-295.
- Rosnow, R. L., & Rosenthal, R. (1996). *Beginning behavioral research* (2<sup>nd</sup> ed.). Englewood-Cliffs, NJ: Prentice-Hall.
- Stevens, S. S. (1946). On the theory of scales of measurement. *Science, 103*, 677 – 680.
- Thompson, B. (1999). Statistical significance tests, effect size reporting, and the vain pursuit of pseudo-objectivity. *Theory and Psychology, 9*, 191-196.
- Yates, F. (1951). The influence of statistical methods for research workers on the development of the science of statistics. *Journal of the American Statistical Association, 46*, 19-34.