Rutgers University
Statistics & Research Design 56:830:650
Spring 2012

Instructor: Dr. Courtenay Cavanaugh
Email: cocavana@camden.rutgers.edu
Class Time: TH 6:00-8:40 PM
Office Hours: F 9-10 a.m. or by appt
Phone: 856-225-6120
Class Location: ATG 207

Course Description/Objectives: This course is a continuation of research methods and builds upon knowledge and skills acquired in that course. The focus is on the multivariate design issues students will confront in applied research settings. The course covers between-and-within-subjects designs and mixed models, regression and covariance analysis, and other univariate and multivariate techniques, relying on computerized data analysis. Through this course, students should demonstrate the ability to analyze data, interpret empirical findings, present research findings in a scientific poster, and recall information about different quantitative statistical methods.

Required Materials:
(1) Pallant, J. (2010). *SPSS Survival Manual: A step by step guide to data analysis using SPSS*. New York, NY: Open University Press.

(2) IBM SPSS Statistics Standard or Premium GradPack 19 [Statistical software]. Chicago, IL: SPSS. The following website lists vendors: http://www01.ibm.com/software/analytics/spss/products/statistics/gradpack/

Additional: You will be using SPSS on your personal laptop computers so you will need to bring your computer to each class. Let me know if you do not have a laptop computer.

Required Readings: The required reading consists of chapters from the eight books listed below. You are expected to purchase your own copy of the Pallant book. The chapters from the other books will be on our class Sakai site under the resources tab. References with asterisks below are also on reserve in the library.

*Gravetter, F.J. & Wallnau, L.B. (2009). *Statistics for the behavioral sciences*. Belmont, CA: Wadsworth, Cengage Learning.
Grim, L.G. & Yarnold, P.R. (1995). *Reading and understanding multivariate statistics*. Washington, DC: American Psychological Association.
Grim, L.G. & Yarnold, P.R. (1995). *Reading and understanding more multivariate statistics*. Washington, D.C.: American Psychological Association.
*Howell, D.C. 2010. *Statistical methods for psychology*. Belmont, CA: Wadsworth Cengage Learning.
Kline, R.B. (2004). *Principles and practice of structural equation modeling*. New York, NY: The Guilford Press.
MacKinnon, D.P. (2008). *Introduction to statistical mediation analysis*. New York, NY: Lawrence Erlbaum Associates.
*Pallant, J. (2010) *SPSS Survival Manual: A step by step guide to data analysis using*

SPSS. New York, NY: Open University Press

*Tabachnick, B.G. & Fidell, L.S. (2005). Using multivariate statistics. New York, NY: Allen & Bacon, Inc.

Course Activities:

1) **Quizzes (20 points each and 40% of total grade):** There will be two quizzes and each quiz will consist of 20 questions and be worth a total of 20 points. Quizzes will be based upon assigned readings and previous class discussions or activities. Make-up quizzes will only be given for truly exceptional circumstances. In these cases, contact me within 24 hours of the quiz and explain the situation. You will also need to provide evidence of this exceptional circumstance.

2) **Final Exam (30 points and 30% of total grade):** The final exam will be based upon the required readings and class lectures. It will consist of 30 questions. The policy described above for make-up quizzes applies.

3) **Assignments (10 points each and 30% of total grade):** There will be three formal assignments each worth 10 points. Assignments are intended to help you better understand the material covered in class by applying the techniques learned. You will use your SPSS Survival Manual which will instruct you how to analyze data and write up the results of your analysis. Points will be deducted for late assignments.

4) **Participation:** You are expected to attend every class, contribute to class discussions, and complete class activities including homework that may be assigned. Failure to do meet these expectations may result in your overall course grade being lowered.

Grading: Your grade will be computed as follows:

Activity	Points	Percent Total Grade
Quiz 1	20	20
Quiz 2	20	20
Final Exam	30	30
Assignment 1	10	10
Assignment 2	10	10
Assignment 3	10	10
Total	**100**	--

Grading Scale: Final grades will be based upon a grading system not more stringent than the one below.

A 90-100 points, 90-100%
B+ 86-89 points, 86%-89%
B 80-85 points, 80%-85%
C+ 76-79 points, 76%-79%
C 70-75 points, 70%-75%

F 0-69 points, 0-69%

Academic Integrity: Students must uphold the highest standards of academic integrity, which are outlined here: http://academicintegrity.rutgers.edu/academic-integrity-at-rutgers

Disability: Students seeking classroom accommodations due to a disability should contact Tim Pure at (856) 225-6442 or tpure@camden.rutgers.edu. The following website has additional information about disabilities services: http://learn.camden.rutgers.edu/disability/disabilities.html

Classroom Conduct: In order to promote a positive environment for learning, students must conduct themselves in a professional manner. Also, no electronic devices (cell phones, computers, etc.) will be allowed in this class, except for during class activities using SPSS. Students with a disability requiring the use of technology will be permitted to use it as long as they provide me with a note from the disability coordinator. I reserve the right to lower your grade for poor classroom conduct.

Other course information: I will use Sakai to communicate with you about this class and may contact you through your email addresses listed in Sakai. So check that email account and use Sakai in order to stay informed.

This syllabus is a working document and may be revised throughout the course.

	TOPIC	READING
Week: 1, TH, 1/19	Introduction/Course Overview	
Week: 2, TH, 1/26	Describing & Exploring Data	Chapters 1-2 Howell (1-63)
Week: 3, TH, 2/2	The Normal Distribution/ Hypothesis Testing	Chapters 3-4 Howell (65-109)
Week: 4, TH, 2/9	Categorical Data & Chi-Square	Chapter 6 Howell (139-177) & Chapter 16 Pallant (213-238)
Week: 5, TH, 2/16	Hypothesis Tests Applied to Means (T-tests)/**Quiz 1**	Chapter 7 Howell (179-223) & Chapter 17 Pallant (239-248)
Week: 6, TH, 2/23	Correlation & Regression	Chapter 2 Grim & Yarnold (19-64) & Chapters 11-12 Pallant (128-147)
Week: 7, TH, 3/1	Multiple Regression	Chapter 5 Tabachnick (117-194) & Chapter 13 Pallant (148-167)
Week: 8, TH, 3/8	Logistic Regression **Assignment #1 given in class**	Chapter 10 Tabachnick (437-505) or Chapter 7 Grim & Yarnold (217-244) & Chapter 14 Pallant (168-180)
Week: 9, TH, 3/15	Spring Recess-No Class	
Week 10: TH, 3/22	**Dr. Sarra Hedden from SAMHSA visiting/**Factor Analysis	Chapter 4 Grim & Yarnold (99-136) or Chapter 13 Tabachnick & Fidell (607-675) & Chapter 15 Pallant (181-201)
Week: 11, TH, 3/29	Analysis of Variance **Quiz 2/Assignment #2 given in class**	Chapter 13 Gravetter & Wallnau (393-443) & Chapter 18 Pallant (249-264)
Week: 12, TH, 4/5	Repeated Measures & Mixed Designs/**Assignment #3 due**	Chapter 10 Grim & Yarnold (317-361)
Week: 13, TH, 4/12	Path & Latent Class Analysis, Structural Equation Modeling	Chapter 5 Kline (93-122) & Chapter 7 Grim & Yarnold (227-260)
Week: 14, TH, 4/19	Mediation/Moderation	Chapter 10 MacKinnon (275-296)
Week: 15, TH, 4/26	**Final Exam**	