

**PSY532: Experimental Design
University of Rhode Island
Fall 2007**

Instructors: Robert Laforge, Sc.D. and Theodore A. Walls, Ph.D.

Meeting time and location: Tuesday & Thursday 12:30-1:45 in Morrill Hall, Room 213.

Offices: CPRC Building, (Social Science Research Center, across from White Hall)

Room: Laforge: CPRC, Room 48W **Walls:** CPRC, Room 15W (lower level)

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Purpose: The purpose of this course is to provide an overview of intermediate statistics and an introduction to analysis of variance and regression.

Objectives: This course will focus on the fundamental principals and statistical methods used in behavioral science. Key outcomes are: to able to read, evaluate, conduct and report on behavioral science research with tools commonly employed in social scientific research in the experimental design and analysis tradition.

Textbooks:

Required: Myers, J.L. & Well, A.D. (2003). *Research design and analysis*. (2nd edition). Mahwah, NJ: Erlbaum. **(MW)**

Required: O'Rourke, N., Hatcher, L. & Stepanski, E.J. (2005). *A step-by-step approach to using SAS for univariate and multivariate statistics*. (2nd Edition). Cary, NC: SAS Institute. **(OHS)**

Recommended: Neter, J., Kutner, M.H., Nachtsheim, C.J. & Wasserman, W. (1996). *Applied linear statistical models*. (4th edition). Boston, MA: McGraw-Hall. **(NKNW)**

Other readings and texts will be recommended throughout the course both in general and based on your evolving interests.

Requirements:

- 1) *Attendance and Participation*. Attendance is required in all sessions. We will allow three absences, however, if more are recorded, you will be expected to approach us with an explanation and we will work out a solution if the reasons warrant it. You are responsible for all materials covered during any absence. 10%.
- 2) *Public Portfolio*. A public portfolio of your work on assignments and exercises developed over the semester. An assignment is typically a reading or analysis related question to which you need to respond with analytical results and a short write-up. There will be six required assignments and others available for extra credit. Exercises are problem sets assigned either from the text or other sources. You can receive feedback over the semester on these elements and include revised versions in your final portfolio (as well as original versions). The portfolios are located in a public place (but you must also keep a copy of your own). You can review other's portfolio's after the assignment due date and utilize them in improving your own work. Grades are assigned (privately) at mid-term and at the end of the semester. 60% (30% by mid term and 30% by end of semester).
- 3) *Analytical Short Project*. Completion of an analytical short project, after the midterm, that utilizes an analysis covered in the course. This will be roughly twice the length of your typical assignments. It will require that you

make the case for your analysis amidst other alternatives offered in the course and that you discuss limitations and next steps for your project. The project is also to be included in your portfolio, but is graded separately. Due at the end of reading week. 20%.

4) *Pop quizzes.* Completion of an unspecified number of pop quizzes will be administered during the course. The goal of these assessments is to assist our mutual needs monitoring your progress information and to keep you on track. There are no make-up quizzes, but we will drop your lowest. 10%.

Public Portfolio Guidelines:

Exercises. These are problem sets selected from the end of each chapter or from elsewhere. They are selected because they illustrate some key principal, application or idea. The answers to these exercises will be posted on the course website one week after the assignment. You are expected to do these exercises before looking at the posted answers, and use the posted answers to check your understanding of the material, and self-correct your responses. Hand-written self-corrections are ok. These should be added to the back of your portfolio at mid semester.

Assignments. Short problems that involve applying the reading and class materials to a data set using the software recommended for that assignment. These will be graded and should be submitted with your portfolio at mid-term and the end of the semester. In general, there will be word or page limits to assignments. You should allocate the space so that you spend the words showing that you understand the most important aspects of the material and as much of the advanced material as you have space for. Grading will be based not only on clarity of your writing, but also the on the quality of your efforts to present the relevant documentation from the computer runs (i.e. the relevant syntax coding and output files.)

Late work policy: Late portfolios at midterm and semester end will be assessed a 10 percent grade reduction for each week late after due date. The coursework is cumulative. We strongly urge you to do the assignments and exercises when they are due.

IMPORTANT: Keep an extra copy of all homework exercises and assignments. Put the ORIGINAL in your public portfolio.

Grading

Assignments and exams will be graded and the following weights will be applied to achieve the final course grade:

Grade Weights

10%	Attendance and Participation
30%	Public Portfolio at Mid-term
30%	Public Portfolio at Semester end
20%	Short Project
10%	Quizzes

HOW TO DO WELL IN THIS COURSE

STAY ORGANIZED: Keep a notebook for homework, class notes and all handouts and other course materials used throughout the semester. Do the exercises at the end of each chapter.

REQUIRED READINGS: Read everything due before the day of class, write down any questions you have and seek out the answer – ask the instructors, your classmates, and/or do further research/reading on the topic. Do the assigned exercises and problems at the end of each chapter, and as many of the unassigned ones as you find necessary to command the material. Practice will deepen your understanding of the material.

THE ACADEMIC ENHANCEMENT CENTER: The work in this course is complex and can be difficult. It's a good idea to seek help at the Academic Enhancement Center (AEC) in Roosevelt Hall. AEC tutors can answer questions, clarify concepts, check your understanding, and help you to study. You can make an appointment or walk in anytime during office hours -- Monday through Wednesday from 10 am to 10 pm, Friday from 10 am to 1 pm, and Sunday from 4 pm to 8 pm. For a complete schedule -- including when tutors are available specifically for this class -- go to www.uri.edu/aec, call (401) 874-2367, or stop by the fourth floor in Roosevelt Hall.

DISABILITY: If you need special accommodations due to documented disabilities please work with disabilities services at <http://autocrat.uri.edu/dss.html> Office of Disability Services, 330 Memorial Union, 401-874-2098 and keep Dr. Laforge informed so that we may arrange reasonable accommodations.

ACADEMIC DISHONESTY AND PLAGIARISM: Academic dishonesty such as getting or giving help during exams, and plagiarism (using someone else's words or ideas without giving proper credit) are serious offenses and will be dealt with according to university regulations. Penalties can include failure on the exam or assignment, failure in the class, and suspension or expulsion from the university. The "freeloader" problem is always a potential problem when group work is involved. This course is structured to minimize this problem, but it can only be avoided if each group member fulfills his or her responsibility to the group on time.

COMPUTER/INTERNET RESOURCES

These will be accrued on Dr. Walls web site. For starters, look at www.uri.edu/faculty/walls under the methods link and under the course page: www.uri.edu/faculty/walls/PSY532 Username: psy532 Password: gradstat.

Psy532(2) Class Schedule Fall 2007

Week	Day	Topics	Readings/Assignments Due Today
1	(TH) Sept 6	<ul style="list-style-type: none"> • Course Overview/ Syllabus review 	Pre Course Review Chapter: OHS Ch. 1
	(Tu) Sept 11	<ul style="list-style-type: none"> • Univariate Distributions • Descriptive Statistics • Populations and Samples • Comment on bivariate regression 	MW Ch. 1-3 OHS Ch. 2-5
	(TH) Sept 13		
2	(Tu) Sept 18	<ul style="list-style-type: none"> • Probability, the binomial distribution, and statistical inference 	MW Ch. 4 OHS Ch. 6 (pp. 142-152)
	(TH) Sept 20		
3	(Tu) Sept 25	<ul style="list-style-type: none"> • Normal distribution • Tests, Effect Size, t-distribution 	MW Ch. 5 OHS Ch. 8 *ASSIGNMENT 1 DUE
	(TH) Sept 27		
4	(Tu) Oct 2	<ul style="list-style-type: none"> • Estimation and null hypothesis testing • power 	MW Ch. 6
	(TH) Oct 4		
5	(Tu) Oct 9	<ul style="list-style-type: none"> • F- distribution • Anova 	MW p. 184-185 & Ch. 8 OHS Ch. 9 *ASSIGNMENT 2 DUE
	(TH) Oct 11		
6	(Tu) Oct 16	<ul style="list-style-type: none"> • Anova: Contrasts 	MW Ch. 9
	(TH) Oct 18		
7	(Tu) Oct 23	<ul style="list-style-type: none"> • Multi-factor ANOVA (two-way) Mid-Semester	MW Ch. 11 OHS Ch. 10 *ASSIGNMENT 3 DUE Portfolio Due by Friday October 26.
	(TH) Oct 25		
8	(Tu) Oct 30	<ul style="list-style-type: none"> • Between Subjects & Within Subjects Designs Repeated measures 	MW Ch. 13 OHS Ch. 12
	(TH) Nov 1		
9	(TH) Nov 4	<ul style="list-style-type: none"> • Mixed Designs • ANCOVA and blocking 	MW Ch. 15 OHS: Ch. 13 *ASSIGNMENT 4 DUE
	(Tu) Nov. 6		

10	(Tu) Nov 13 (TH) Nov. 15	<ul style="list-style-type: none"> • Correlation and partial correlation • Simple Regression • Checking assumptions • diagnostics 	MW Ch. 18 Review: OHS Ch. 6 Essential Regression Reading *ASSIGNMENT 5 DUE Nov 15
11	(Tu) Nov.20	<ul style="list-style-type: none"> • Multiple regression 	MW Ch. 19
	(TH) Nov. 22-25	Thanksgiving Recess	
12	(Tu) Nov. 27 (TH) Nov. 29	<ul style="list-style-type: none"> • Design Coding in regression • Main effects and interactions • 	MW Ch. 20 OHS Chapter 14 Nov 29 *ASSIGNMENT 6 DUE
13	(Tu) Dec 4 (TH) Dec 6 (Last class)	<ul style="list-style-type: none"> • General Linear model • Regression with categorical variables ANOVA & Regression	MW Ch. 21
	Reading days Dec 11-12		Portfolio Due: Dec 6th
	Final Exam Scheduled Dec 13-14, 17-21		