

Instructor: Heidi H. Ewen, PhD
Office Location: 306 Life Science
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Office Hours: Tuesday 9:30-11AM

Time and Place of Class Meetings:

Lecture: 428 Life Science; Tuesday & Thursday 11am-12:20pm
Lab: 04 University Hall; Monday 5:30-7:20 PM

Description of Course Content:

PSYC5407- ADVANCED STATISTICS II 4 hours credit

Statistical aspects of complex experimental and non-experimental designs used in psychological research.

Student Learning Outcomes: This course consists of learning a variety of procedures commonly used to test hypotheses in psychological research, and learning how to examine and analyze the data accordingly and to communicate the research results to the scientific community. Specific learning outcomes are listed below.

1. Develop skills necessary to critically evaluate contemporary research using advanced quantitative methods.
2. Learn how to identify an appropriate statistical technique, estimate models, and interpret results using an existing data set.
3. Learn the fundamental principles and basic techniques of advanced and multivariate statistics.
4. Learn how to write professional papers by composing drafts of one complete paper and many drafts of Data Analysis and Results Sections each using the knowledge gained about APA writing style and the content of each of these sections.

Requirements: One (1) lab section is available. You must be registered in lecture (PSYC 5406-001) and the lab section (PSYC 5407-002) concurrently. Please see the **lab schedule** for further information.

Required texts and resources (bring texts to lecture and lab):

- Cohen, J., Cohen, P., West, S. & Aiken, L. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences, 3rd Edition*. Mahweh, NJ: LEA (ISBN:0-8058-2223-2)
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate Statistics*. Boston, MA: Pearson Allyn & Bacon. (ISBN: 0-205-45938-2)
- UT Austin SPSS Online Tutorial available at <http://www.utexas.edu/its/rc/tutorials/stat/>

Required supplies: A nonprogrammable calculator will be needed.

Required journal articles: Articles will be available on electronic reserve through WebCT.

Recommended (optional) resources:

- Lomax, R.G. (2007). *An Introduction to Statistical Concepts (2nd Edition)*. Mahwah, NJ: Lawrence Erlbaum Associates. (ISBN:0-8058-5739-7)
- American Psychological Association (2001). *Publication manual of the American Psychological Association* (5th edition). Washington, D.C.: APA. (ISBN: 1-557-98791-2)
- www.apastyle.org

Assignments and exams:

(1) Weekly laboratory exercises (10%) – these are due at the end of laboratory sessions each week. These may or may not be graded and will be used to assess how well students are grasping materials.

(2) Three homework assignments (20%) – Homework assignments will consist of a set of specific questions on a data set. You will be asked to develop theoretically driven hypotheses, outline an analytic plan, conduct and interpret the analyses, report results, and develop appropriate conclusions.

(3) Project Proposal (25%) – A final project using data of your choosing will be due at the end of the semester. A preliminary proposal describing the purpose of the study, the primary goals of the project, hypotheses, and analytic plan is due at midterm.

(4) Final Project (25%) – The final project will build upon the proposal and include refinement of the analytic plan, development of syntax to perform appropriate statistical analyses, completion of analysis and interpretation including applicable graphs and tables in APA format, and development of inferences and conclusions from the results. The final project should be written in APA format and would ideally be of publishable quality. The final project is due on finals week. I will be available for consultations and assistance throughout the semester. Please use my office hours.

(5) Presentation (20%) – A formal presentation of your final project is expected at the end of the semester. It is expected that the presentation will include: the purpose of the study, the goals of the project, hypotheses, statistical analyses, results, and interpretation of the results.

Attendance Policy: In order to fully grasp the material, it is expected that students attend each lecture and laboratory meeting. If you are unable to attend class for any reason, it is expected that you notify me IN ADVANCE of each absence. Students are responsible for material, assignments, and other information provided in each class section.

Make-up work: Make-up and/or late assignments and exams will be granted only for University-approved, documented absences.

Grading: You will receive one course grade for your combined performance in the lecture and laboratory. There will be three major homework assignments, a proposal, and a final project. Additionally, your lecture/lab attendance and weekly lab assignments will be considered.

Grade Grievance Policy: The University Grade Grievance Policy will be followed. (See Grade Grievance Policy in the Graduate School Regulations and Information.)

Important dates:

January 30:	Census date
March 7:	Midsemester
March 17-21:	Spring break
April 4:	Last day to drop classes
May 2:	Last day of classes

Drop Policy:

The University Drop Policy will be followed. (See Drop Policy in the Graduate School Regulations and Information.)

Americans With Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Academic Integrity:

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Series 50101, Section 2.2)

Student Support Services:

- **Computers** are available in the OIT Labs. The following labs have computers on which SPSS is installed: Business Building, Fine Arts Building, Ransom Hall, and University Hall.
- **Library information** can be obtained through Helen Hough, Psychology Librarian. Please contact her by phone (817-272-7429) or by email (hough@uta.edu). You will find useful information for psychology at <http://library.uta.edu/JDBC/DBs/narrowdbs.jsp?DBID=PSYCHOLOGY>.
- **Other** services can be obtained from the University. The University supports a variety of student success programs to help you: learning assistance, developmental education, advising and mentoring, admission and transition, and information about federally funded programs. Students seeking assistance with academic, personal or social problems should contact the Office of Student Success Programs at 817-272-6107.

E-Culture Policy:

The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email.

All students are assigned an email account and information about activating and using it is available at www.uta.edu/email. New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

Lab Teaching Assistant:

Coordinator: Yasushi Kyutoku
Classroom: University Hall 04
Lab hours: M 5:30 to 7:20
Email: kyuotku@uta.edu
Office: 540
Office Phone:
Office Hours: TBA
Campus mailbox: 19528

Wk	Date	Lecture Topic	Reading Assignments	Date:	Lab Exercises/Assignments	Assignment Due
1	T 1/15	Course Introduction & Review of Basic Statistics	Review UT Austin SPSS Tutorial: 2 Descriptive & Inferential Statistics	M 1/21	MLK Day. No Lab.	Statement of research interests
	R 1/17					
2	T 1/22	Power, Sample Size, and Missing Data	Cohen Chpt 11, Reserve readings on WebCT:	M 1/28	How To In SPSS: Review of basic statistics computation. View datasets for assignments/project	Statement of research interests
	R 1/24		Review UT Austin SPSS Tutorial: 4 Data Manipulation and Advanced Topics			
3	T 1/29	Levels of Analysis – Nested effects, aggregation issues, analysis strategies	Reserve readings on WebCT:	M 2/4	Calculation of sample sizes – apriori and post-hoc Missing data analysis	Selection of Data Set(s) for project analysis
	R 1/31					
4	T 2/5	Review Regression and ANOVA	T & F Chpt 3	M 2/11	SPSS – GLM (Regression/ANOVA)	
	R 2/7					
5	T 2/12	Introduction To Multiple Regression	T & F Chpt. 5, Cohen Chpt 3. WebCT reserve Cohen (1992)	M 2/18	SPSS – GLM	Assignment 1: Written summary of preliminary data analysis
	R 2/14					
6	T 2/19	Multiple Regression – Analytic Strategies	T & F Chpt. 5, Cohen Chpt 5	M 2/25	SPSS – GLM	
	R 2/21	Multiple Regression – Mediation and Moderation	T & F Chpt. 5, reserve readings on WebCT: Baron & Kenny (1986) & MacKinnon (2000)			
7	T 2/26	Logistic Regression	Cohen chpt 13; T&F Chpt 10	M 3/3	SPSS – GLM	
	R 2/28					

Wk	Date	Lecture Topic	Reading Assignments	Date:	Lab Exercises/Assignments	Assignment Due
8	T 3/4	Bivariate Logistic Regression	Reserve readings on WebCT:	M 3/10	SPSS – Logistic Regression	Project Proposal Due
	R 3/6	Multinomial Logistic Regression				
9	T 3/11	Analysis of Covariance (ANCOVA)	T & F Chpt 6 Reserve readings on WebCT	M 3/17	Spring Break	
	R 3/13					
10	T 3/18	Spring Break NO LECTURE		M 3/24	SPSS – Logistic Regression	Assignment 2: Regression Homework
	R 3/20					
11	T 3/25	Multivariate Analysis of Variance (MANOVA)	T & F Chpt 7	M 3/31	SPSS – ANOVA, MANOVA, and GLM	
	R 3/27					
12	T 4/1	MANOVA	T & F Chpt 7	M 4/7	SPSS – Factor Analysis	
	R 4/3	Introduction to Factor Analysis	T & F chpt 13			
13	T 4/8	Factor Analysis - Exploratory	T & F chpt 13, Reserve readings on WebCT	M 4/14	SPSS – Factor Analysis	
	R 4/10	Factor Analysis – Confirmatory				
14	T 4/15	Introduction to Path Modeling	T & F chpt 14, Reserve readings on WebCT	M 4/21	Identification of theory, key variables, and estimated path	Homework 3: MANOVA and Factor Analysis
	R 4/17	Path Modeling	Reserve readings on WebCT			
15	T 4/22	Path Modeling	T & F chpt 14	M 4/28	Consultations for Project/Presentations	
	R 4/24	Project Presentations				

Wk	Date	Lecture Topic	Reading Assignments	Date:	Lab Exercises/Assignments	Assignment Due
16	T 4/29	Project Presentations		M 5/5	<i>Finals Week</i> <i>NO LAB</i>	
	R 5/1	Project Presentations				
17	T 5/6	<i>Final Project Due 5/6 by 3:30 p.m.</i>				