PSYC 5405 **Advanced Statistics I** **Fall 2015**

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Course Website: Please go to Blackboard at http://www.uta.edu/blackboard/

Office Hours: Tuesday & Thursday 10:30-11:30 AM and by appointment

Time and Place of Class Meetings:
Lecture: 420 Life Science; Tuesday & Thursday 12:30-1:50 PM
Lab: 256 ELAB; Monday 4:30-7:20 PM

Lab Teaching Assistants:

Coordinator:	Meghan Babcock	Eric Russell
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Office Hours:	Mondays 2:00 PM – 3PM	Wednesdays 11:00 AM – 12:00 PM

Description of Course Content: PSYC5405- ADVANCED STATISTICS I 4 hours credit
The course offers an in-depth practical and conceptual approach to fundamental descriptive and inferential statistics used in psychological research.

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

1. Learn how to **create a database, properly code and screen data, and present the results**. These objectives will be accomplished by using SPSS or another statistical software package to create a database, manage data, and conduct data screening procedures, and by writing sections describing data screening and results for assignments, take-home exams, and the final project.
2. Learn how to **determine and describe the strength of association and direction of relationships between two or more variables** by identifying and computing (both by hand and with a statistical package) appropriate statistical tests,

such as chi-square statistics, correlation coefficients, and linear regression models, and by writing Data Analysis and Results sections.

3. Learn how to **examine and present significant mean differences between and within groups** by identifying and computing (both by hand and with a statistical package) appropriate statistical tests, such as t-tests and analysis of variance models (ANOVA), and by writing Data Analysis and/or Results sections.
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 5405-001) and the lab section (PSYC 5405-002) concurrently. Please see the **lab schedule** for further information.

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

- Lomax, R. G. & Hahs-Vaughn, D. (2012). *An introduction to statistical concepts* (3rd ed.). New York, NY: Routledge. (ISBN: 978-0-415-88005-3)
- Patten, M. L. (2014). *Proposing empirical research: A guide to the fundamentals* (5th ed.). Glendale, CA: Pyrczak Publishing. (ISBN: 978-1-936523-30-06)
- American Psychological Association (2009). *Publication manual of the American Psychological Association* (6th edition). Washington, D.C.: APA. (ISBN: 1-4338-0561-8)
- Reserved readings will be available in the Science Education and Career Center in LS106.

Required supplies:

- A calculator will be needed.
- Access to a computer with statistical software. Computers are available in the OIT Labs and on most Departmental desktops. The following labs have computers on which SPSS is installed: Engineering Lab Building, Business Building, Architecture Building, Fine Arts Building, University Center, University Hall, and the Maverick Activities Center. Computers with statistical software (SPSS & SAS) are also available in the Graduate Reading Room (LS544B) and statistical software is available for purchase through the University of Texas at Arlington. SPSS will be used in the lecture and lab, but students are able to use another statistical software program if they choose.

Recommended (optional) resources:

- Field, A. (2013). *Discovering statistics using SPSS* (4th ed.). Thousand Oaks, CA: Sage. (ISBN: 9781446249185)
- www.apastyle.org

Assignments and exams: In addition to in-class exercises, other exercises and assignments will be scheduled throughout the term. Participation in lecture and lab will be worth 25 points. Lab and homework assignments will equal 50 points each. Weekly quizzes

will equal 100 points and will be given during lab (see the course schedule for dates). Two cumulative take-home exams will be given and will be worth 100 points each. See the **course schedule** for exam dates. Additionally, a proposal project will be worth 100 points. The project will be a complete proposal that will consist of the student developing hypotheses and proposing analyses and adequate sample sizes based on the statistical analyses learned in this course. Approval of hypotheses and data analyses must be secured prior to submitting the final proposal.

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. **As the instructor of this section, I have decided that attendance at lecture and lab is expected and counts toward the participation grade.** Not attending lecture or lab will result in a decrease in your participation grade, because you will not be present to participate. However, attending all lectures and labs will not result in full participation points. Participation requires more than just attendance. Routine scheduled activities, such as work, doctor's appointments, vacations, weddings, or other conflicting appointments, will not be considered excused absences.

Expectations for Out-of-Class Study: A general rule of thumb for ***undergraduate*** course work is this: for every credit hour earned, a student should spend 3 hours per week working outside of class. Hence, a 4-credit course might have a minimum expectation of 12 hours of reading, study, etc. Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 12 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

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. You will have a chance to earn **525 points** total. There will be two take-home exams worth 100 points each and a proposal project worth 100 points. Additionally, quizzes will be worth 100 points. The final quiz grade used in grade calculations will be the average of all of the quiz grades. Additionally, lecture and lab participation will be worth 25 points together, and in-lab assignments and homework assignments will each be worth 50 points. Note that in-lab assignments and homework will be graded on a 100% scale, averaged, and then weighted accordingly to represent 50 points each. Unexcused missing work will receive a grade of zero (0) in the grade calculations. **Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels.** Final course grades will be calculated by adding participation, homework, in-lab assignments, quiz, exam and proposal project points together, dividing by 525, and assigning final letter grades as follows:

Letter Grade	Percentage of Points	Points required
A	89.5-100.0%	469.6125 - 525
B	79.5-89.49%	417.1125 – 469.6124

C	69.5-79.49%	364.6125 – 417.1124
D	59.5%-69.49%	312.1125 – 364.6124
F	0%-59.49%	0-312.1124

Grade Grievance Policy: The University Grade Grievance Policy will be followed. Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current graduate catalog. (http://catalog.uta.edu/academicregulations/grades/#graduatetext)

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao/).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA), and Section 504 of the Rehabilitation Act. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD)**. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:
The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364.
Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit* www.uta.edu/titleIX.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Sections of your work for which scholastic dishonesty has been detected will receive zero points and a disciplinary report will be filed.

Student Support Services:

- **Computers** are available in the OIT Labs. The following labs have computers on which SPSS is installed: Engineering Lab Building, Business Building, Architecture Building, Fine Arts Building, University Center, University Hall, and the Maverick Activities Center.
- **Other** services can be obtained from the University. UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

The English Writing Center (411LIBR): Hours are 9 am to 8 pm Mondays-Thursdays, 9 am to 3 pm Fridays and Noon to 5 pm Saturdays and Sundays. Walk In ***Quick Hits*** sessions during all open hours Mon-Thurs. Register and make appointments online at http://uta.mywconline.com. Classroom Visits, Workshops, and advanced services for graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to

students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, **classes are held as scheduled**. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is the stairwell outside of the room. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Librarian to Contact: Library information can be obtained through Peace Williamson, Psychology Librarian. Please contact her by phone (817-272-6208) or by email (peace@uta.edu). You will find useful information for psychology at http://libguides.uta.edu/PsychologyInfo.

PSYC 5405 Advanced Statistics I Tentative Lecture Schedule Fall 2015 Tentative Lab schedule

Wk	Date	Lecture Topic	Reading Assignments	Date:	Lab Exercises/Assignments	Assignment Due
1	T 8/25			M 8/31	SPSS: Codebook, Database Construction, Data Entry, Checking Data	In-lab Assignment
	R 8/27	Overview & Data Coding	L & H Chpt. 1			
2	T 9/1	Data Screening: Data Coding, Entry, & Descriptive Statistics	L & H Chpt. 2-4 Reserve Readings: T & F Chpt. 4	M 9/7	*Labor Day Holiday* *NO LAB*	
	R 9/3					
3	T 9/8	Data Screening: Distributions & Scoring		M 9/14	Quiz SPSS: Screening & Descriptive Statistics	Copy of UTA Human Research Subjects Training & Copy of Completion of UTA Tutorial on Acknowledging Sources
	R 9/10	Probability & Sample Statistics	L & H Chpt. 5		How To Write A Results Section: Data Screening	In-lab Assignment Homework
4	T 9/15	Sampling Distributions & Hypothesis Testing	L & H Chpt. 6, pp. 121-138; 155	M 9/21	Quiz Probability	In-lab Assignment
	R 9/17	Hypothesis Testing: z tests			How To Write A Data Analysis Section & The Beginning Of A Discussion	Homework
5	T9/22	Measures of Association: chi-square	L & H Chpt. 8, pp. 217-231; 234-236	M 9/28	Quiz Z and Chi-square	In-lab Assignment
	R 9/24				How To Write Data Analysis & Results Sections For Chi-square	Homework
6	T 9/29	Correlation & Prediction	L & H Chpt. 10, pp. 259-282; 286-287	M 10/5	Quiz Correlations	In-lab Assignment
	R 10/1				How To Write Data Analysis & Results Sections For Correlations	Homework
7	T 10/6	Introduction To Linear Regression	L & H Chpt. 17, pp. 611-647; 650-652	M 10/12	Quiz Simple Linear Regression	*Pre-proposal Due*
	R 10/8	T-tests	L & H Chpt. 6, pp. 138-146; 155-157		How To Write Data Analysis & Results Sections For Linear Regression	In-lab Assignment Homework
8	T 10/13	T-tests	L & H Chpt. 7, pp. 163-192; 195-198	M 10/19	Quiz T-tests	In-lab Assignment
	R 10/15	Oneway ANOVA *Hand out Exam 1*	L & H Chpt. 11, pp. 291-331; 334-336		How To Write Data Analysis & Results Sections For T-test	Homework
9	T 10/20	Oneway ANOVA	L & H Chpt. 11, pp. 291-331; 334-336	M 10/26	Oneway ANOVA	*First Take-Home Exam Due*
	R 10/22	Multiple Comparisons	L & H Chpt. 12		How To Write Data Analysis & Results Sections For Oneway ANOVA	In-lab Assignment

Wk	Date	Lecture Topic	Reading Assignments	Date:	Lab Exercises/Assignments	Assignment Due
10	T 10/27	Trends & The Linear Model	L & H Chpt. 12	M 11/2	Quiz Comparisons & Contrasts	In-lab Assignment
	R 10/29	Power Analysis	Howell Chpt. 6, pp. 149-154 & Chpt. 7, pp. 192-194 & Chpt. 8, pp. 231-233 & Chpt. 11, pp. 331-334		How To Write Data Analysis & Results Sections For Comparisons & Contrasts	Homework
11	T 11/3	Factorial Design	L & H Chpt. 13	M 11/9	Quiz How to Calculate Sample Size	In-lab Assignment
	R 11/5	Factorial ANOVA			How To Write Sample Size Determination In A Proposal	Homework
12	T 11/10	Factorial ANOVA	L & H Chpt. 13	M 11/16	Quiz ANOVA & GLM	In-lab Assignment
	R 11/12				How To Write Data Analysis & Results Sections For Factorial ANOVA	Homework Exam 1 Revisions
13	T 11/17	Repeated Measures ANOVA	L & H Chpt. 15, pp. 493-500; 515-524	M 11/23	Quiz GLM Factorial ANOVA	In-lab Assignment
	R 11/19				How To Write Data Analysis & Results Sections For Factorial ANOVA	Homework
14	T 11/24	Multivariate Approach to Repeated Measures	Reserved Reading: T & F Chpt. 8	M 11/30	GLM RM ANOVA	*Proposal Project Due*
	R 11/26	*Thanksgiving Holiday* *NO LECTURE*			How To Write Data Analysis & Results Sections For RM ANOVA	In-lab Assignment
15	T 12/1	Mixed ANOVA *Hand out Exam 2*	L & H Chpt. 15, pp. 500-508; 526-551	M 12/7	Quiz GLM Mixed ANOVA	In-lab Assignment
	R 12/3	Hypothesis Generation			How To Write Data Analysis & Results Sections For Mixed ANOVA	Homework
16	T 12/8	TBA	TBA	M 12/14	*Finals Week*	
	R 12/10	*Second Take-Home Exam Due 12/10 by 4:30 p.m.*				
17	T 12/15	*Finals Week*				
	R 12/17					

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Angela Liegey Dougall, PhD

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381