Psychology 611 (Section 001)
Advanced Statistics and Research Methods for Psychology I
FALL 2018

INSTRUCTOR Leah M. Adams, Ph.D.
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LAB INSTRUCTOR Aaron Hunt
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MEETINGS Lecture (Location): Tues & Thurs 10:30am – 11:45am (Robinson B122)
Labs: Fri 8:30am – 10:20am (Innovation 326);
Fri 10:30am – 12:20pm (Innovation 327)

OFFICE HOURS Adams: 12:30-2:30pm Tues (or by appointment)
Hunt: TBD

DEADLINES September 4 is the last day to add this class;
September 9 is the last day to drop this class with no tuition penalty

TECHNOLOGY

- **Official Communications via GMU E-mail**: Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly.
- **Class cancellation policy:** If class is canceled, students will be notified via their GMU email. The instructor will provide details regarding coursework and/or assignments.

REQUIRED TEXT
There is no required textbook for this course, though required readings will be available on Blackboard for students. Students who wish to continue to deepen their knowledge of statistics (and I hope that's everyone!) can find a list of recommended texts on Blackboard.

COURSE OVERVIEW & OBJECTIVES
Psychology 611 focuses on the fundamentals of applied social science research. This course will emphasize the development of theoretical, conceptual, and practical knowledge of statistical techniques and research methods to enable you to effectively evaluate others' research and to design, conduct, and report on research of your own.

The theoretical and conceptual parts of the class will focus on grasping the logic underlying the research process, as well as understanding the central issues related to all things (or many things) data—from cleaning, to analyzing, to interpreting, through disseminating findings from the data. The practical parts of the class will focus on helping you learn how to create and prepare a dataset for analysis in SPSS (a statistical software package), when and how to use particular statistical techniques, and how to interpret and report results. The regular class meetings will consist mostly of lectures and discussions, although opportunities will be provided to practice the material covered. The lab meetings will focus on providing you with hands-on experience analyzing and interpreting data (using SPSS and other software), as well as covering homework assignments.

COURSE REQUIREMENTS

- **Attendance**: Attendance is expected at all scheduled class and lab meetings. Students should let instructors know in advance if they will be missing a class or lab meeting. Students are responsible for all material and announcements presented in class and lab, including announcements about changes in the schedule and assignments--please make arrangements to exchange contact information with another classmate to ensure that you are "in the know!"

- **Homework & Labs**: Weekly homework and lab activities will be assigned to deepen and reinforce students' understanding of key concepts and to develop competencies in statistical analysis and interpretation of results.
    - **Lab**: Attendance and participation in lab will count for **20%** of the total course grade; 80% of the lab grade will be based on homework and 20% on attendance. All homework assignments must be printed out (i.e., hard copy), stapled, and turned in at the BEGINNING of each lab meeting. If assignments are turned in late, but within a week of the due date, they will count for half the points possible. If assignments are turned in more than a week late, they will not be worth any points. If you need to attend another lab session, you must receive permission from your lab instructor in advance.
- **"Pop quizzes!"** (Hooray ☺): There will be six short quizzes given at the start of six lectures. Students will not know in advance on which days the quizzes will be given. Students will be given 15 minutes to complete the quiz—if you arrive on time to class, you will have the full 15 minutes. If you are late, you will have less time. You are allowed to drop one quiz score (I suggest you choose your lowest one, but it's up to you), thus only five quiz scores will count toward your grade. There will be no makeup quizzes.
- **Mid-course Exams**: There will be three mid-course exams, of which the two highest will count toward your grade. In lieu of one mid-course exam, you can opt to do an in-person "module." Due to the nature of the material, each mid-course exam is cumulative, although there will be an emphasis on the material covered since the last exam. There will be no make-up exams. If extenuating circumstances prevent a student from taking an exam during a scheduled time, then that will be the dropped exam.
    - **Modules**: If a student chooses to complete a module, they must perform the statistical procedures in the presence of the instructor and demonstrate proficiency. There will be a 15-minute time limit on the performance; speed and fluency of your performance will be indicative of your proficiency. Students may complete a module at any time during the exam week. If you fail, one re-take is allowed. Performance on the modules will be graded similarly to the exam. Students will not be prompted to integrate the reading and class notes. Instead, they must come prepared to discuss how the reading and lectures pertain to the task performed. More details will be provided about these modules and how to demonstrate proficiency throughout the course and lab.
- **Final Exam:** The final exam will be a cumulative exam that will evaluate students' mastery of material covered throughout the course.
- **Literature Review & Proposal:** As part of the course, doctoral students are required (and master's students are invited) to identify a substantive area of interest, conduct a review of the relevant theoretical and empirical literature, formulate a specific research question, and develop a detailed research plan, culminating in a written research proposal. If you are a doctoral student, you should work to identify a research supervisor over the next few weeks and begin identifying an area of personal interest. If you are a master's student, you can opt for the Proposal Plan if you have identified a faculty member willing to serve as your research supervisor. Students enrolled in the Standard Plan complete all requirements for the course (lecture, lab, exams, etc.), but will not be required to conduct the literature review and proposal. Students should make sure their advisor knows that they are responsible for supervising work on the literature review and grading the review by **December 15**. Students must also ensure that their faculty advisor sends me an email by **September 30** stating that they are willing to supervise and grade the student's work on the literature review requirement for this course.

EXAM & HOMEWORK POLICY

The following policy refers to all missed or late assignments, quizzes, or exams that you fail to let us know about beforehand. Not included in this policy are arrangements made beforehand with the professor and lab instructor (e.g., missing class for a religious holiday). There will be no extensions or make-ups without penalty except in instances such as the following:

- hospitalization or illness that has been documented and judged by your instructor as preventing you from a) preparing adequately for an exam or quiz, b) attending class, or c) completing an assignment
- death or serious illness in your family
- court appearances

Documentation must be provided by health officials (e.g., a physician or member of the student health center staff) in the case of illness; an immediate family member in the case of death or serious illness in the family; and official

paperwork in the case of court dates. Decisions regarding extensions and make-ups under these circumstances will be made on a case-by-case basis.

EVALUATION AND GRADES

	Standard Plan	Proposal & Literature Review Plan
Pop Quizzes	10% (6 quizzes; 5 count @ 2% each)	5% (6 quizzes; 5 count @ 1% each)
Mid-course Exams	40% (3 exams; 2 count @ 20% each)	40% (3 exams, 2 count @ 20% each)
Final Exam	20%	20%
Lab Grade	30% (20% lab attendance; 80% homework completion)	20% (20% lab attendance; 80% homework completion)
Research Proposal	N/A	15%

A final grade of B denotes work that meets course objectives and demonstrates the level of comprehension and skill expected of graduate students. Work exceeding this standard receives an A. Note that a grade of C or lower denotes unsatisfactory level of achievement for a graduate student. It is worth trying to earn a grade higher than a C since this course will have to be retaken otherwise. However, it is not worth fretting about whether one gets an A or A- since this distinction usually has little practical importance in graduate school or one's professional development. Please contact me if you believe your work has been graded improperly.

Final grades will be assigned according to the following percentages (with normal rounding rules for decimals):

A	A-	B+	B	B-	C+	C	C-	F
93 – 100%	90 – 92%	87 – 89%	83 – 86%	80 – 82%	77 – 79%	73 – 76%	70 – 72%	< 70%

HONOR CODE

All students in this course are to become familiar with and follow the University's honor code, which does not tolerate any form of cheating and attempted cheating, plagiarism, lying, and stealing. Exams and assignments are expected to be individual efforts unless otherwise noted by the instructor or teaching assistant. Violations of the GMU Honor Code can result in failure of an assignment or exam, depending on the severity of violation. All violations will be reported to the Honor Committee. The instructor for this course reserves the right to enter a failing grade to any student found guilty of an honor code violation. For more information on the Honor Code please visit:
http://academicintegrity.gmu.edu/honorcode/

ACCOMMODATION OF DISABILITIES

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Services (DRC) at (703) 993-2474. All academic accommodations **must** be arranged through that office. Note that this provision includes the range of disabilities, including physical, psychiatric, and learning disabilities.

STUDENT SUPPORT SERVICES

George Mason offers services to support students' academic and emotional development. Counseling and Psychological Services, located in SUB I room 3129 (http://caps.gmu.edu/learning-services/), offers workshops in academic skills, stress management training, and individual and group counseling for students who would like some help with social, emotional, or educational concerns. Consider taking advantage of these resources if you need them.

SCHEDULE (Subject to change!)

Week	Date	Lecture Topics	Assigned Reading (due on day listed)	Lab (topic follows lecture)
1	T 8/28	Intro & orientation to class		Orientation to lab
	R 8/30	Intro to data analysis		
2	T 9/4	Basic descriptive statistics	StatSoft: Descriptive statistics	Homework 1 due
	R 9/6	Normal curve, distributions, & assumptions		
3	T 9/11	Data cleaning & Missing data.	Tabachnick & Fidell Ch 4 – checking data	Homework 2 due
	R 9/13	Reliability & Validity. Measurement.	StatSoft: Reliability	
4	T 9/18	Hypothesis testing: Inferential stats & statistical significance		Homework 3 due
	R 9/20	More on hypothesis testing		
5	T 9/25	Z-tests & t-tests, oh my!	StatSoft: Correlations	**Exam 1: Weeks 1-4**
	R 9/27	Review for Exam 1		
6	T 10/2	Variance, Covariance & Correlation;		Homework 4 due
	R 10/4	Variance, Covariance & Correlation; Intro to GLM	StatSoft: The General Linear Model	
7	**T 10/9**	**No class today**		Homework 5 due
	R 10/11	Simple regression		
8	T 10/16	Multiple regression	StatSoft: Multiple regression	Homework 6 due
	R 10/18	Multiple regression		
9	T 10/23	Guess what?! More regression.		**Exam 2: Emphasis on weeks 5-8 (inc. 1-4)**
	R 10/25	Review for Exam 2		
10	T 10/30	ANOVA	StatSoft: ANOVA	Homework 7 due
	R 11/1	ANOVA		
11	T 11/6	Factorial ANOVA		Homework 8 due
	R 11/8	Factorial ANOVA/ ANCOVA	StatSoft: ANCOVA	
12	T 11/13	ANCOVA		**Exam 3: Emphasis on weeks 9-11 (inc. 1-8)**
	R 11/15	Exam 3 Review		
13	T 11/20	Statistical power & effect sizes	Cohen (1992) – Power	**No lab this week**
	R 11/22	**No class today -- Thanksgiving**		
14	T 11/27	Nonparametric tests	StatSoft: Nonparametric statistics	Homework 9 due
	R 11/29	Quasi-experimental designs		
15	T 12/4	Special topic		Mock final (optional)
	R 12/6	Last day: Catching up, reviewing & putting it all together	Cohen (1990)—Things I have learned so far	
	T 12/18	**Final exam (cumulative)**		**10:30 am – 1:15 pm**