Psychology 611 (Section 001 and Section 002)
Advanced Statistics and Research Methods for Psychology I
FALL 2022

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MEETINGS
Lecture -001: MW 10:30am – 11:45am Krug Hall 253
Lecture -002: MW 1:30am – 2:45pm Krug Hall 253
Lab -001 -201: F 8:30 – 10:20am Innovation Hall 203
Lab -001 -202: F 10:30 – 12:20pm Innovation Hall 203
Lab -002 -203: R 12:30 - 2:20pm Innovation Hall 205
Lab -002 -204: R 2:30 - 42:20pm Innovation Hall 205

OFFICE HOURS
Stuewig: M & T 12:00 – 1:00pm. Please let me know if you are planning on attending. (or by appointment, virtual or IRL)
Mackay: T 12:00-2:00pm or by appointment
Kevin: T 3:00 – 4:00pm or by appointment

DEADLINES
August 29 is the last day to add this class;
September 6 is the last day to drop this class with no tuition penalty
September 27 is the last day to drop this class with 100% tuition penalty

SAFE RETURN TO CAMPUS

- All students taking courses with a face-to-face component are required to follow the university's public health and safety precautions and procedures outlined on the university Safe Return to Campus webpage (https://www2.gmu.edu/safe-return-campus). **If you suspect that you are sick or have been directed to self-isolate, please quarantine or get tested.**

- Students are required to follow Mason's current policy about facemask wearing. As of now, individuals are **NOT** required to wear a facemask in all indoor settings, including classrooms. Students who prefer to wear masks either temporarily or consistently will always be welcome in the classroom.

TECHNOLOGY

- **Official Communications via GMU E-mail**: Students must use their GMU email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.
- **Class cancellation policy:** If the campus closes or class is canceled, students will be notified via their GMU email. The instructor will provide details regarding coursework and/or assignments.
- **Blackboard:** Activities and assignments in this course will regularly use the Blackboard learning system, available at https://mymason.gmu.edu. Students are required to have regular, reliable access to a computer with an updated operating system and a stable broadband Internet connection (cable modem, DSL, satellite broadband, etc.).
- **Web-conferencing:** Although we are planning on having the class in person, things can change. As such, we should be ready to pivot to an online class. If we do, then activities and assignments in this course will use web-conferencing software (Zoom). In addition to the requirements above, students are required to have a device with a functional microphone and camera.
- **Course Materials and Student Privacy:** All course materials posted to Blackboard or other course site are private to this class; by federal law, any materials that identity specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class. Video recordings – whether made by instructors or students – of class meetings that include audio, visual, or textual information from other students are private and must not be shared outside the class. Live video conference meetings (e.g., Zoom) that include audio, textual, or visual information from other students must be viewed privately and not shared with others in your household or recorded and shared outside the class.
- **Statistical Packages:** You will need to use a statistical package of your choice to complete assignments in this course; most students use SPSS or R (sometimes SAS). Students will have access to SPSS through the lab. As an open source software environment, R and R Studio are also available for free, direct download. Also, while I don't really care which analysis package you use, I will use SPSS for class examples. Although I have worked with SAS and R, I am not familiar enough with them to be able to answer specific questions about running analyses with them. I am also not familiar enough with them to know the types of output that one can get from them.

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 class meetings will consist mostly of lectures and discussions. The lab assignments will focus on providing you with hands-on experience analyzing and interpreting data (by hand and also using SPSS and other software).

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 optional/recommended texts on Blackboard.

COURSE REQUIREMENTS

- **Attendance**: Attendance and participation in class and laboratory sessions are required. Students should let instructors know in advance if they will be missing a class. Students are responsible for all material and announcements presented in class, 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!"
- **Lab Homework and Participation**: 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. It is expected that you will work on these assignments in lab and turn them in at the end of lab; this way, should any problems arise your TA will help you problem solve. However, this doesn't always work out and so they are officially due by the BEGINNING of the next lab time. If assignments are turned in late, there will be a 5% deduction for each day late. If assignments are turned in more than a week late, they will not be worth any points.
- **Quizzes:** There will be twelve (12) short quizzes given throughout the semester via Blackboard. Quizzes will be due by Friday 11:59pm on the weeks in which they are assigned. Students will be given 15 minutes to complete the quiz. You are allowed to drop two (2) quiz scores (I suggest you choose your lowest ones, but it's up to you), thus only ten quiz scores will count toward your grade. There will be no makeup quizzes. If extenuating circumstances prevent you from a taking a quiz by the scheduled deadline, then this is the quiz you drop.
- **Final Project:** The final project will be a cumulative project that demonstrates students' mastery of material covered throughout the course. The project will require students to build upon and link primary ideas addressed in the class, and to use a statistical package of their choice to analyze, interpret, and **write up the results in APA format**. This will be a group project (groups of 2 individuals). The final project will be due by **Friday, December 2** at **11:59pm EST**.
- **Final Exam:** The final exam will be cumulative and demonstrate students' mastery of material covered throughout the course. The exam will be given during finals week.
- **Doctoral Students: 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 7**. 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.
- **Human Subjects Training:** One final requirement for this course is the successful completion of the Collaborative Institutional Training Initiative (CITI) program. The program consists of an online exam that ensures that all persons who engage in work with human subjects understands the inherent risks you may expose those subjects to and how to avoid those risks. Additional information is available here https://oria.gmu.edu/topics/human-subjects/training/. All students **must** complete CITI. Once you complete your CITI training, please upload your certificate of completion to Blackboard. If you upload it in the first two weeks you will receive 1 extra credit point on the final exam. You must show documentation of completion at some point during the semester or you will **NOT** receive a grade for 611.

EXAM & HOMEWORK POLICY

Without prior arrangement, 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 or b) 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. In general, quizzes are not eligible for make-up work; instead, your two lowest quiz grades are automatically dropped. Lab homework is penalized at 5% per day for late submission (i.e., starting when lab time begins) and receives no credit if it is submitted over a week late. When possible, I encourage students to reach out as soon as you know that you may miss class and/or related work; it is much easier to develop a plan in advance than it is to do so later.

EVALUATION & GRADES

	Standard Plan	**Proposal & Literature Review Plan**
Quizzes	40% (12 quizzes; 10 count @ 4% each)	30% (12 quizzes; 10 count @ 3% each)
Final Exam	10%	10%
Final Project	20%	20%
Lab	30%	25%
Research Proposal	N/A	15%

I sometimes give extra credit on an individual quiz or the final, but there will be no scores above 100% for the total of all quizzes or for the final. A final grade of B denotes work that meets course objectives and demonstrates the level of comprehension and skill expected of graduate students. 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 – the most important thing is working to become competent and comfortable with statistics and statistical analysis. Please contact me if you believe your work has been graded improperly. Final grades will be assigned according to the following percentages (with typical 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%

ACADEMIC INTEGRITY & 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: https://oai.gmu.edu/mason-honor-code/full-honor-code-document/

ACCOMMODATION OF DISABILITIES

Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. Note that this provision includes the range of disabilities, including physical, psychiatric, and learning disabilities. If you are seeking accommodations for this class, please first visit http://ds.gmu.edu/ for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. All academic accommodations **must** be arranged through Disability Services. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993 – 2474.

SEXUAL HARASSMENT, SEXUAL MISCONDUCT, AND INTERPERSONAL VIOLENCE

As a faculty member and designated "Responsible Employee," I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per university policy 1412. If you wish to speak with someone confidentially, please contact the Student Support and Advocacy Center (703-380-1434) or Counseling and Psychological Services (703-993-2380). You may also seek assistance from Mason's Title IX Coordinator (703-993-8730; titleix@gmu.edu).

STUDENT SUPPORT SERVICES

George Mason offers services to support students' academic and emotional development. Counseling and Psychological Services, located in SUB I room 3129 (caps.gmu.edu), offers workshops in academic skills, stress management training, and virtual counseling for students who would like some help with social, emotional, or educational concerns. Consider taking advantage of these resources if you need them. For additional information about other student support services offered, visit: https://stearnscenter.gmu.edu/knowledge-center/knowing-mason-students/student-support-resources-on-campus/

Tentative Course Outline

Students are responsible for being aware of **any changes** in this schedule announced in class, lab, or over email.

Week	Date	Topics	Readings available on Blackboard (Supplemental/optional readings also listed on Blackboard)	Quiz (due by Fri @ 11:59pm)
1	M 8/22 W 8/24	Overview of Course. Intro to variables & data.	https://qz.com/1664575/is-data-science-legit/	
2	M 8/29 W 8/31	Basic descriptive statistics. Normal curve, distributions & exploring assumptions.	Data Science Textbook: Descriptive statistics overview.	Quiz 1
3	M 9/5 W 9/7	**NO CLASS**: Labor Day Data cleaning.	Tabachnick & Fidell – Ch 4 (p. 66-86);	Quiz 2
4	M 9/12 W 9/14	Reliability & validity. Measurement. Basic concepts of inferential statistics.	Data Science Textbook: Reliability Analysis and Item Analysis Overview	Quiz 3
5	M 9/19 W 9/21	Z-tests & t-tests.		Quiz 4
6	M 9/26 W 9/28	Variance, covariance, and correlation.	Data Science Textbook: Correlations	Quiz 5
7	M 10/3 W 10/5	Intro to GLM. Simple linear regression.		Quiz 6
8	M 10/10 W 10/12	**NO CLASS:** Fall Break Missing data and TBD		
9	M 10/17 W 10/19	Multiple regression.	Data Science Textbook: Multiple Regression Analysis Overview	Quiz 7
10	M 10/24 W 10/26	Multiple regression diagnostics. Statistical power.	Cohen (1992)	Quiz 8
11	M 10/31 W 11/2	ANOVA	Iversen (1987) Ch. 1 Introduction & Ch. 2 One-Way Analysis of Variance, All Categories	Quiz 9
12	M 11/7 W 11/9	Factorial ANOVA		Quiz 10
13	M 11/14 W 11/16	ANCOVA Mediation & Moderation in regression		Quiz 11
14	M 11/21 W 11/23	Non-parametric tests. Effect sizes. **NO CLASS:** Thanksgiving Break		
15	M 11/28 W 11/30	Quasi-experimental designs. Putting it all together.	Cohen (1990)	Quiz 12

	F 12/2	Final project due via Blackboard:		
	W 12/7	Final Exam 10:30 – 1:15		
		Final Exam 1:30 - 4:15		