PSYC 300-001: Statistics in Psychology (4 credits)

PSYC 300-DL4: Statistics in Psychology (4 credits)

"*Data is the sword of the 21st century, those who wield it well, the Samurai*." – Jonathan Rosenberg, former Senior VP of Products at Google.

Fall 2020

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TA for 300-DL4- D7 and D8: Quinn Keegan
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08/31 Last day to add classes
09/08 Last day to drop classes without penalty
09/28 Last day to drop classes with 100% tuition penalty

This course is delivered and conducted entirely online in an asynchronous format via the GMU Blackboard. There are no required meeting times, but there are due dates for much of the work. Please read this syllabus very carefully to be sure you understand all aspects and requirements of the course. Things within this syllabus may change over the course of the semester. It is important that you check your Mason email regularly so that you aware of any changes. Also make sure that you check under Announcements on Blackboard as important information is relayed there as well.

COURSE DESCRIPTION

This course will cover the basics of statistics in psychology and the behavioral sciences. No matter what kind of psychology you are interested in (clinical, industrial, social, neuro, etc.), you WILL need to understand statistics. Even if you aren't interested in pursuing psychology as an academic major or career, having an understanding of statistics will provide you with a toolkit that you can use to better slice through the barrage of information that will be thrown at you throughout your lives.

This course is offered online, in an effort to provide a thorough introduction to students who may be unable to travel to campus. The structure of the course is designed such that students are expected to complete individual "modules" to advance through the course materials.

BLACKBOARD LOGIN INSTRUCTIONS

Access to MyMason and GMU email are required to participate successfully in this course. Please make sure to update your computer and prepare yourself to begin using the online format BEFORE the first day of class. Check the IT Support Center (https://its.gmu.edu/) website. Navigate to the Student Support page (https://its.gmu.edu/article-categories/teaching-learning/blackboard/tl-s/) for help and information about Blackboard. In the menu you will find all the tools you need to become familiar with for this course. Take time to learn each. Make sure you run a system check a few days before class.

1. Go to http://mymasonportal.gmu.edu/
2. Login using your Mason ID and password (the same one you use for your GMU email account)
3. Click on the 'Courses' tab (toward the top right of the screen)
4. Go to the list of courses entitled "Course List"
5. Click on the link for this course. The course, however, will not be available until first day of classes

The class website in Blackboard will contain access to videos, assignments, the discussion board, exams, and other course resources. Nearly all course activities will take place in Blackboard, so it is important to login and begin to explore the various components in the first days of the semester.

REQUIRED TEXTBOOKS

Statistics for the Behavioral Sciences (3rd edition), *Gregory J. Privitera*. Thousand Oaks, CA: Sage Publications. ISBN: 9781506386256

Online support can be found at: https://edge.sagepub.com/priviterastats3e/student-resources. It is highly recommended that you use these online student resources, as they provide an excellent overview of the textbook materials. Additional support can be found by viewing the excellent resource available at http://students.brown.edu/seeing-theory/. Here, you will find visual examples of many of the concepts we will be covering in class. I encourage all of you to take a look.

COURSE LEARNING OUTCOMES

1. Students will be able to identify and apply descriptive statistics to data (exam 1 and H/W – weeks 1-5).
2. Students will be able to apply basic hypothesis test in the case of two-group comparisons (exam 2 and h/w weeks 6-11)
3. Students will be able to apply hypothesis test in the case of multi-group comparisons (exam 3 and h/w weeks 12-15)
4. Students will be able to identify and explain appropriate statistical test (BLOG sharing – weeks 1-15)
5. Students will be able to differentiate between different strategies for analyzing data.(weeks 1-15)

TECHNOLOGY REQUIREMENTS

Hardware: You will need access to a Windows or Macintosh computer with at least 2 GB of RAM and access to a fast and reliable broadband internet connection (e.g., cable, DSL). A larger screen is recommended for better visibility of course material. You will need speakers or headphones to hear recorded content and a headset with a microphone is recommended for the best experience. For the amount of Hard Disk Space required taking a distance education course, consider and allow for:

1. the storage amount needed to install any additional software and
2. space to store work that you will do for the course.

Software: Many courses use Blackboard as the learning management system. You will need a browser and operating system that are listed compatible or certified with the Blackboard version available on the myMason Portal. See supported browsers and operating systems (https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support). Log in to myMason to access your registered courses. Some courses may use other learning management systems. Your computer should be capable of running current versions of those applications. Also, make sure your computer is protected from viruses.

Students owning Macs or Linux should be aware that some courses may use software that only runs on Windows. You can set up a Mac computer with Boot Camp or virtualization software so Windows will also run on it. Watch this video

(https://support.apple.com/en-us/HT201468) about using Windows on a Mac. Computers running Linux can also be configured with virtualization software or configured to dual boot with Windows.

Note: If you are using an employer-provided computer or corporate office for class attendance, please verify with your systems administrators that you will be able to install the necessary applications and that system or corporate firewalls do not block access to any sites or media types.

Course-specific technology

For this class, the only requirement is that you bring a calculator with you. Powerful graphing calculators are not needed – all you will require is a calculator that can calculate square roots ($\sqrt{}$) and exponents (x^2). Please note that calculators are necessary for completing the exams.

COURSE SCHEDULE

WEEKS	CONTENT	LECTURE ASSIGNMENTS DUE	LAB ASSIGNMENTS DUE
Week 1 Mon 08/24-Mon 08/31 08/31 Last Day to Add	Introduction Frequency and visualization Ch1-2 Lectures (Videos): Ch1-2	Introduction Blog Sharing "Frequency and visualization" Quizzes Ch1-2 Due Monday 08/31 by 11:59 pm EST	HW1 "Frequency Distribution & Graphing" due Monday 08/31 by 11:59 pm EST
Week 2 Mon 08/31-Tue 09/08 09/08 Last Day to Drop without Penalty	Measure of central tendency Lectures (Videos) Ch3 Textbook Ch3	Small Group Discussion "Measure of central tendency" • Post due Friday 09/04 by 11:59 pm EST • Response due Tuesday 09/08 by 11:59 pm EST Quiz Ch3 due Tuesday 09/08 by 11:59 pm EST	HW2 "Central Tendency" due Tuesday 09/08 by 11:59 pm EST

WEEKS	CONTENT	LECTURE ASSIGNMENTS DUE	LAB ASSIGNMENTS DUE
Week 3 Tue 09/8-Mon 09/14 09/08 Last Day to Drop without Penalty	Variability Lectures (Videos) Ch4 Textbook Ch4	Small Group Discussion "Variability" • Post due Friday 09/11 by 11:59 pm EST • Response due Monday 09/14 by 11:59 pm EST Quiz Ch4 due Monday 09/14 by 11:59 pm EST	HW3 "Variability" due Monday 09/14 by 11:59 pm EST
Week 4 Mon 09/14-Mon 09/21	Probability Lectures (Videos) Ch5 Textbook Ch5	Blog Sharing "Probability" Quiz Ch5 Due Monday 09/21 by 11:59 pm EST	HW4 "Probability" due Monday 09/21 by 11:59 pm EST
Week 5 Mon 09/21-Mon 09/28	Normal distributions Lectures (Videos) Ch6 Textbook Ch6	Quizzes Ch6 Due Monday 09/28 by 11:59 pm EST	Exam 1 (Ch1-6) due Monday 09/28 by 11:59 pm EST
Week 6 Mon 9/28-Mon 10/05	Sampling distributions Lectures (Videos) Ch7 Textbook Ch7	Small Group Discussion "Sampling distribution": • Post due Friday 10/02 by 11:59 pm EST • Response due Monday 10/05 by 11:59 pm EST Quiz Ch7 due Monday 10/05 by 11:59 pm EST	HW5 "Sampling" due Monday 10/05 by 11:59 pm EST

WEEKS	CONTENT	LECTURE ASSIGNMENTS DUE	LAB ASSIGNMENTS DUE
Week 7 Mon 10/05- Tue 10/13	Hypothesis Testing Videos Ch8 Textbook Ch8	Blog Sharing “Hypothesis” Quiz Ch8 Due Tuesday 10/13 by 11:59 pm EST	HW6 “Hypothesis Testing” Due Tuesday 10/13 by 11:59 pm EST
Week 8 Tue 10/13-Mon 10/19	One and two-sample T-tests Lectures (Videos) Ch9 Textbook Ch9	Small Group Discussion “Testing the difference between of group means” • Post due Friday 10/16 by 11:59 pm EST • Response due Monday 10/19 by 11:59 pm EST Quiz Ch9 due Monday 10/19 by 11:59 pm EST	HW7 “Testing the Relation Between Means” due Monday 10/19 by 11:59 pm EST
Week 9 Mon 10/19-Mon 10/26	Testing the relation between means Lectures(Videos) Ch10 Textbook Ch10	Small Group Discussion: • Post due Friday 10/23 by 11:59 pm EST • Response due Monday 10/26 by 11:59 pm EST Quiz Ch10 due Monday 10/26 by 11:59 pm EST	HW8 “Testing the Relation Between Means” due Monday 10/26 by 11:59 pm EST

WEEKS	CONTENT	LECTURE ASSIGNMENTS DUE	LAB ASSIGNMENTS DUE
Week 10 Mon 10/26-Mon 11/02	Confidence Intervals Lectures (Videos) Ch11 Textbook Ch11	Quiz Ch11 Due Monday 11/02 by 11:59 pm EST	Exam 2 (Ch7-11) due Monday 11/02 by 11:59 pm EST
Week 11 Mon 11/02-Mon 11/9	ANOVA Between-Subjects Lectures (Videos) Ch12 Textbook Ch12 For Chapter 12, you are not responsible for sections 12.6 and 12.7 on Post-hoc tests	Small Group Discussion: • Post due Friday11/06 by 11:59 pm EST • Response due Monday 11/9 by 11:59 pm EST Quiz Ch12 due Monday 11/9 by 11:59 pm EST	HW9 “ANOVA Between Subjects” due Monday 11/9 by 11:59 pm EST
Week 12 Mon 11/9-Mon 11/16	ANOVA Within-Subjects Lectures (Videos) Ch13 Textbook Ch13	Small Group Discussion: • Post due Friday 11/13 by 11:59 pm EST • Response due Monday 11/16 by 11:59 pm EST Quiz Ch13 due Monday 11/16 by 11:59 pm EST	HW10 “ANOVA Two-Way Between Subjects Factorial Design” due Monday 11/16 by 11:59 pm EST
Week 13 Mon 11/16-Mon 11/23	ANOVA Factorial Lectures (Videos) Ch14 Textbook Ch14	Quiz Ch14 Due Monday 11/23 by 11:59 pm EST	Exam 3 (Ch12-14) due Monday 11/23 by 11:59 pm EST

WEEKS	CONTENT	LECTURE ASSIGNMENTS DUE	LAB ASSIGNMENTS DUE
Week 14 Mon 11/23-Mon 11/30	Correlations Lectures (Videos) Ch15 Textbook Ch15 For Chapter 15, you are not responsible for sections 15.2, 15.3, and 15.4 on Spearman, Point- Biserial and Phi Correlations.	Blog Sharing Quiz Ch13 Due Monday 11/30 by 11:59 pm EST	HW11 “Correlations” due Monday 11/30 by 11:59 pm EST
Week 15 Mon 11/30 – Sat 12/5	TBD		
Week 16 Mon 12/07-Wed 12/16 Readings Days Dec 7-8 Exam Period Dec 9-16	Exam	Final Exam (Ch1-15) due by 12/15	-

ASSIGNMENT DESCRIPTION

Exams: Four exams will be given, including a cumulative final. Exams must be completed before each deadline. *Each exam will cover the material for the preceding chapters since the last exam*. Students may **not** use any course materials (textbook, notes, online resources, etc.) during the exam. The only items you will need is pen and paper for determining the answers, a copy of the formula sheet (which you should print off from Blackboard beforehand), and a calculator. All exams must be completed in two hours. To ensure that this time limit is adhered to, all exams will be timed in Blackboard – once an exam is begun, it must be completed within two hours. Also, exam questions will be randomly selected for each student, so no student will take the same exam. To assist

with completing the exam, each exam will come with a formula sheet containing all the formulas that were covered during the preceding portion of the class. Please note that, just because a formula is on this sheet does not mean that it is necessarily to be used to answer a question.

In addition, your lowest exam score from the first three exams will be dropped. This does not include the final exam, which must be taken. The final exam will cover all material for the course, but will emphasize the final three chapters.

Quizzes: You will complete weekly quizzes. Each quiz can be found within each module in Blackboard. You will have three attempts to complete each quiz. No time limit, open book. The highest grade will be counted.

Lectures and Lecture Assignments: As outlined above, lectures are presented as videos for each week, accessible via Blackboard. In the course schedule above, you will see the recommended dates on which each lecture should be viewed. In addition, you will be required to complete lecture requirements as indicated in the schedule above. Please note not every week has an assignment. You will submit your answer to the question in Blog Sharing link. You don't need to respond to other students. In addition, some weeks will require small group assignment. You will be required to sign-up to the group of 4 to 5 individuals. You will answer the question and provide help/feedback to your peers. This assignment has two due dates. Your post will be due by Friday (check the schedule) and response by Monday.

Lab Assignment/Participation: The lab portion of this course accounts for 25% of your grade. Each week there is a homework assignment that will be due to the Lab instructor. You will be expected to download the homework assignment, provide the answers, and submit into Blackboard. The lab instructor is available via Ask Professor forum as well for any questions about these assignments.

Research Requirement: The psychology department believes that participation in psychological research can enhance your learning about the field. Thus, for 80 points in this course, all students are required to serve for 3 hours as participants in psychological research. You can sign up for a Sona Systems account by going to the website (http://gmu.sona-systems.com/) and then clicking on the "Request an account here" link under New Participant. For students who prefer not to participate, you can also complete 3 hours' worth of alternative research assignments. For details please see the Sona systems website. I strongly encourage you to do this early in the semester, later in the semester there is often an abundance of students and a lack of openings.

COURSE POLICIES

Attendance: This course is offered online, in an effort to provide a thorough introduction to students who may be unable to travel to campus or in the situation where the US has become a infectious dumpster fire. The structure of the course is designed such that students are expected to complete individual "modules" to advance through the course materials. You are expected to complete each module in order. Above you will find details with a **timeline** for completing the course. If you wish, you may complete and submit the materials earlier than the deadline.

Each week, we will cover **one to two chapters** in the textbook. These readings are required and essential to the course. In addition, a homework assignment is provided for the Lab (see Lab syllabus for more details).

Late Assignments:

Make-up policy: Make-up exams will only be given if exceptional circumstances are claimed AND substantiated. I must see proof of what you are claiming to verify that it is true.

Instructor-Student Communication: The instructor is available by email throughout the entire session (use your GMU account). You may email with questions, comments, concerns, etc. I will also be available to meet virtually (I use WebEx, but also have access to Zoom) by appointment. Please don't be shy about asking questions or asking to meet for help.

Before sending an email, please check the following (available on your Blackboard course menu) unless the email is of a personal nature:

1. Syllabus
2. Ask Professor
3. On-demand Blackboard videos on how to use Blackboard features, and Technical Requirements.
4. Feel free to respond to other students in the Ask Professor forum if you know the answer.
5. If you e-mail the instructor with a question regarding any of the material, your question (and the answer) will be posted to Ask Professor so that other students will be able to see the question and the instructor's answer. In this case, the question will not be linked back to your name.

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, and notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. You 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**.

GRADING SCALE

Assignments	Percentage of Grade
Exams	40%
Quizzes	15%
Lab	25%
Lecture Assignments	10%
Research	10%

	100

Grade Breakdown					
A+	97-100%	A	93-96%	A-	90-92%
B+	87-89%	B	83-86%	B-	80-82%
C+	77-79%	C	73-76%	C-	70-72%
D+	67-69%	D	63-66%	D-	60-62%
F	below 60%				

UNIVERSITY POLICIES AND RESOURCES

1. **Academic Integrity:** Academic integrity refers to honest and ethical behavior in all aspects of academic activity. This includes: not cheating on exams or homework assignments (e.g., copying the work of others or using crib notes), not passing off someone else's ideas as your own (plagiarism), not engaging in dishonesty of any kind with regard to your class participation and assignments.
   a. **Honor Code:** George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited. All violations of the Honor Code will be reported to the Honor Committee. See honorcode.gmu.edu for detailed information. You in this course are expected to behave at all times in a manner consistent with the GMU Honor Code. Violations of the Honor Code will not be tolerated in this course and will be reported according to GMU procedures. You must paraphrase any information from a source into your own words. Do not copy anything word for word, even if you are citing the source; direct quotes are not accepted for Critique and Redesign and Proposal projects in this class. The instructor reserves the right to use software to determine the extent to which the work is the student's.
   b. **Plagiarism:** Plagiarism is the unacknowledged use of another person's labor, another person's ideas, another person's words, or another person's assistance. Unless otherwise stated in class, all work done for courses -- papers, examinations, homework exercises, laboratory reports, oral presentations -- is expected to be the individual effort of the student presenting the work. Any assistance must be reported to the instructor. If the work has entailed consulting other resources -- journals, books, or other media -- these resources must be cited in a manner appropriate to the course. Everything used from other sources -- suggestions for organization of ideas, ideas themselves, or actual language -- must be cited. Failure to cite borrowed material constitutes plagiarism. Undocumented use of materials from the World Wide Web is plagiarism. If you are caught plagiarizing or cheating, you will fail the assignment, and, depending upon the severity of the violation, you may fail the class.
2. Students must follow the university policy for Responsible Use of Computing

3. **Enrollment:** Students are responsible for verifying their enrollment in this class. Schedule adjustments should be made by the deadlines published in the Schedule of Classes (available from the Registrar's Website: registrar.gmu.edu). After the last day to drop a class, withdrawing from this class requires the approval of the dean and is only allowed for nonacademic reasons. Undergraduate students may choose to exercise a selective withdrawal. See the Schedule of Classes for selective withdrawal procedures.
4. **Student services:** The University provides range of services to help you succeed academically and you should make use of these if you think they could benefit you. I also invite you to speak to me (the earlier the better).
5. Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
6. The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance. Counseling Center: Student Union I, Room 364, 703-993-2380. Web-site here.
7. If you have any specific needs (e.g., related to vision, hearing, learning, or medical conditions) or any religious or cultural practices, please let me know by the second week of class so that I can make the appropriate arrangements. Disabilities must be documented by the Disability Resources Center (703-993-2474) for reasonable accommodations to be provided. Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester.
8. The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing. University Writing Center: Robinson Hall Room A114, 703-993-1200. The writing center includes assistance for students for whom English is a second language.
9. Diversity: George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty and staff. Through its curriculum, programs, policies, procedures, services and resources, Mason strives to maintain a quality environment for work, study and personal growth. George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty, and staff. An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds, and practices have the opportunity to be voiced, heard, and respected.
10. Notice of a mandatory reporting of sexual assault, interpersonal violence, and stalking: As a faculty member, I am designated as a "Responsible Employee", and must 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 one of Mason's confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling & Psychology

Services (CAPS) at 703-993-2380. You may also seek assistance from Mason's Title IX Coordinator by calling 703-993-8730 or emailing cde@gmu.edu.

11. Religious Holidays: A list of religious holidays is available on the University Life Calendar page. See the Religious Holiday Calendar. Any student whose religious observance conflicts with a scheduled course activity must contact the Instructor at least 2 weeks in advance of the conflict date in order to make alternative arrangements.