Spring 2022
Statistics for Psychology (PSYC 300)
Monday 7:20 PM – 10:00 PM
Location: Nguyen Engineering Building | Room 1110

INSTRUCTOR: Kyle Hickerson, M.A.
Preferred Name: Kyle
Pronouns: He/Him/His
ZOOM ONLINE OFFICE HOURS: Thursday @ 3:30 PM | Zoom Link Posted on Blackboard
OFFICE: David King Hall, 1020B
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COMMUNICATION

All communication must be done through your GMU email. Generally, you can expect a response from me within 48 hours. If I have not responded by then, please reach out again.

REQUIRED TEXTBOOK: Statistics for People Who (Think They) Hate Statistics ***Interactive eBook*** (7th Edition) by Salkind and Frey. Generally, I am loath to require textbooks. However, I find the accompanying videos in the interactive textbook to be very helpful. Additionally, you should **rent** the **interactive eBook**, preferably from the link below. 120 days should suffice. You do not need to purchase the book. **You should get the book from the link below to ensure that you receive the accompanying videos.** The price should be ~$45 for a 120-day rental. https://www.vitalsource.com/products/interactive-statistics-for-people-who-think-neil-j-salkind-bruce-b-frey-v9781544385464.

COURSE DESCRIPTION

We will cover many of the basic descriptive and inferential statistics that are used in the field of psychology. This is a 4-credit course, which includes both a lecture section and a lab section. During the lecture sessions, I will cover the topics listed on the syllabus and take you step-by-step through statistical analyses. **It is vital that you come to class having read the assigned content**. You will complete a reading check at the beginning of the class, which is followed by a brief lecture to dig deeper into the concepts and missed questions on the quiz. Finally, you will use R to complete in-class assignments to apply material from the lecture. There will be a brief end of semester project where you apply what you have learned. Additionally, you will be asked to write 4 brief podcast synopses of the Quantitude podcast. **Revisions are an important part of this course**. You can revise reading checks, in-class assignments, and the final project within two weeks of the submission. During your lab sessions, you will review and practice the topic(s) from that week's lectures. You will also get hands-on experience using SPSS to analyze data.

LEARNING OBJECTIVES

Students will achieve competent understanding of foundational research statistics including data visualization, descriptive statistics, and variance. Students will be able to use traditional parametric statistics to analyze data including correlation, regression, t-tests, and ANOVA.

Students will be able to explain the results of their analysis in both technical and simple terms to demonstrate mastery of the material.

TECHNOLOGY & SOFTWARE

In the lecture, we will be using the open-source software R, along with RStudio, which is an editor for R. **Due to the structure of the course, it is critical that you bring a laptop that has a Windows, Mac, or Linux operating system.** However, accommodations can be made if students do not have/did not bring a laptop with one of the specified operating systems. At a minimum, students must bring a device that can connect to the internet and use the site rdrr.io (linked below). Students who do not have one of the previous mentioned operating systems will be using an online source to run R which has a different interface (https://rdrr.io/snippets/). To install R – Go to the link and click on the CRAN Mirror hyperlink, then select which CRAN Mirror you want to download R from. **NOTE:** R must be downloaded and installed before RStudio.

REQUIRED SOFTWARE – All Free
Download R - https://www.r-project.org/
Download RStudio, Open-Source License (Free) - https://www.rstudio.com/products/rstudio/download/

Here are useful materials for R:

- Learning Statistics with R - https://learningstatisticswithr.com/lsr-0.6.pdf

COURSE SCHEDULE

Week	Topic	Assignment	Date
1	Syllabus Overview & Primer		Jan 24th
2	Intro to Stats | Central Tendency & Measurement Types (Chapter 1 & Chapter 2)	1	Jan 31st
3	Variance | Visualization (Chapter 3 & 4)	2	Feb 7th
4	Correlation | Reliability & Validity (Chapter 5 & 6) (Revision 1 due) (Synopsis 1 due)	3	Feb 14th
5	Hypothesis Testing | Data Distributions (Chapter 7 & 8) (Revision 2 due)	4	Feb 21st
6	Significance Testing | Z-tests (Chapter 9 & 10) (Revision 3 due)		Feb 28th

7	Independent & Dependent samples t-test (Chapter 11 & 12) (Revision 4 due) (Synopsis 2 due)	5	Mar 7th
8	**Spring Break -- No Class**		**Mar 14th**
9	ANOVA & Factorial ANOVA (Chapter 13 & 14)	6	Mar 21st
10	Repeated Measures & Mixed ANOVA (See additional reading list) (Revision 5 & 6 due)	7	Mar 28th
11	Linear Regression & Multiple Regression (Chapter 16 & additional reading list) (Synopsis 3 due)	8	Apr 4th
12	**No Class** (Revision 7 due)		Apr 11th
13	Clustered Data (See additional reading list) (Revision 8 due)		Apr 18th
14	Power Analysis (See additional reading list) (Synopsis 4 due)		Apr 25th
15	**Psychometrics (See additional reading list) | Final Project Due**		**May 2nd**
16	Reading Day		May 9th
17	**Final Project Revision Due**		**May 16th**

COURSE STRUCTURE, GRADING AND REQUIREMENTS

Coursework

1. In-Class Assignments – 80 points
    a. In-class assignments will allow you practice with the material from the reading and lecture. These assignments are due online at the end of class.
2. Reading Checks – 90 points
    a. Reading checks are brief quizzes given at the beginning of class to ensure that you are keeping up with the readings. As class time is largely devoted to working on in-class assignments, it is vital that you come on time and prepared to work.
3. Lab section – 100 points

    a. Your final grade from the lab section will be the percentage of available points. For example, if your final lab grade is 86%, you will be allocated 100*0.86 = 86 points
4. Final Project – 80 points
    a. In this project, you will write a brief paper analyzing a 'fake' dataset that you create. This paper is 1-2 pages long and will consist of an **introduction (5pts)** to the dataset | **methods (10 pts)** section consisting of the variables, the analysis plan hypotheses, and an overview of how you would collect the data | **results (30 points)** | **discussion (30 points)** should be a less-technical 'so what' based on the results section and **conclusion (5pts)** which serves as the greatest hits of the paper. You may use SPSS or R for analyzing the data.
5. Podcast Synopsis - 80 points (20 points per synopsis)
    a. Throughout the semester, you will listen to an episode of your choice, that focuses on statistics from the Quantitude Podcast (i.e. No 'Advice for Graduate Students' type episodes). The synopsis assignment sheet can be found on Blackboard. Quantitude is a podcast run by quantitative psychologists/statisticians that I hope will expose you to a variety of new ways to think about statistics and data, even if it seems too advanced today. **NOTE**: This assignment cannot be revised for full points as it is completion based. Late assignments may be turned in at 5 points off per day late. The synopsis assignment sheet will ask you to list the episode you listened to, what it was about and 4 things that you learned and why it's important. Content should be about half a page in length.
6. Completing all assignments – 10 points
    a. You will receive 10 points for turning in all the class assignments, reading checks, podcast synopses and the final project.

Grading –

Letter Grade	Points
A	410-430
B	389-409
C	368-388
D	347-367
F	< 346

Revisions

Revisions are an integral part of this course structure. However, revisions are not mandatory. You will have two weeks to submit revisions for any assignment (except the podcast synopsis) for full points. If you have submitted a revision during this time, and are not awarded full points, you have another two weeks to complete revisions on that document, from the time the previous revision is submitted. However, if no revisions are made during the initial two-week window, you will no longer have the option to make revisions on that assignment. Further, if you submit a revision and are not awarded full points, and let the second two-week window lapse, you may not have a second revision on this assignment.

NOTE: I reserve the right to limit or eliminate a student's ability to revise if I have reason to believe that the student is taking advantage of the revision policy. This includes but is not limited to not doing the readings and purposefully doing poorly so that they may revise the assignment later.

Example 1: Student submits Assignment 1 on January 1st. The student has until January 14th to complete revisions on the assignment. After January 14th, the student can no longer make revisions on Assignment 1.

Example 2: Student submits Assignment 1 on January 1st. The student submits revisions on/before January 14th but is not awarded full points. The student will receive the appropriate points for the correct revisions, regardless if all the questions were answered correctly. The student then has until January 28th to make the second round of revisions. If the student does not submit revisions between January 15th and January 28th, they can no longer revise Assignment 1.

Alternate Assignments

Starting after week 12, we will have covered what I consider to be the most important topics for an introduction to statistics. However, for students who are interested, I have prepared 3 lectures on advanced, yet incredibly important topics that I consider vital for aspiring data analysts in the psychology field. These bonus lectures and bonus reading checks are not mandatory. However, you can use one of these reading checks to replace your lowest reading check or in-class assignment. During weeks 12-15, the lab instructor will be available to aid students in analyzing their final project data in SPSS if that is the platform that they wish to use.

POLICIES

Late Policy

Late podcast synopses will have 5 points deducted for each day late. Missed assignments due to class absence can be seen in the Attendance policy.

Attendance

Attendance is critical due to the nature of the course. Each week, the classes build on the previous and will form your foundation of statistical knowledge. Therefore, it is critical that everyone attend class if able. **If you cannot make it to class, you are still expected to complete the work**. Each student will have 2 opportunities to turn in the in-class assignment and reading check if they cannot make it to class. Refer to the class Cancellation & Makeups section for details. You can make up missed lab assignments during the last two weeks of the semester.

Self-Advocacy

As an instructor, I cannot help you succeed if I am not aware that you are in need of accommodations. I am a proponent of equity in education where students are given the resources necessary to succeed, not told to sink or swim based on arbitrary policies. If life events occur that put you in-conflict with the policies in the syllabus, you should let me know as soon as possible. **However, do not feel compelled to share the details if you do not wish to.** Informing me that a personal/private event or crisis has occurred is sufficient detail**.** You may wish to reach out to the Student Support Advocacy Center (703-380-1434; https://ssac.gmu.edu/) or

Counseling and Psychological Services (703-993-2380; https://caps.gmu.edu/) for support. The SSAC and CAPS are confidential resources for you.

Class Cancellation & Makeups

If class must be canceled (snow, power outage etc.), I will post the reading-check and in-class assignment, as well as a power point for the students to review & complete. The Reading Check and In-Class Assignment will be due next Sunday at 11:59 PM. **NOTE**: If your situation makes it so that you cannot complete the work in the allotted time, please reach out for accommodations.

Homework

The homework will consist of reading the assigned chapter/article/video before class, as well as any revisions for assignments that the student wants to do. Additionally, the podcast synopses will be due on the specified dates seen above. **There is no mandatory content graded homework.** The podcast synopses are graded based on completion.

ACADEMIC INTEGRITY

Reading Checks are to be completed by yourself, closed note/book/internet.
Podcast Synopses must be completed by yourself.
In-class assignments & the final project may be discussed with myself, the lab instructor or fellow students, *but directly copying another student's work* is strictly against the rules.

Failure to follow these guidelines may be viewed as evidence of academic dishonesty, which can result in a grade of F for the course and other penalties through the University System.

DISABILITY SERVICES

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. 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. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474

Title IX

George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students who believe that they have been sexually harassed, assaulted or subjected to sexual misconduct to seek assistance and support. University Policy 1202: Sexual Harassment and Misconduct details Mason's process, the resources, and the options available to students.

Any faculty or staff member is required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator, but please know that this will result only in someone reaching out to you directly to let you know about available services and to determine if you wish to take any action. You can also contact the Student Support and Advocacy Center (703-380-1434; https://ssac.gmu.edu/) or Counseling and Psychological Services (703-993-2380; https://caps.gmu.edu/) to speak to someone confidentially, as those offices are not required to report disclosures. You may also seek assistance from Mason's Title IX Coordinator (703-993-8730; titleix@gmu.edu).

IMPORTANT DATES

Last day to add a class: Jan 31st
Last day to drop (with 100% tuition refund): February 7th
Last day to drop (with 50% tuition refund): February 14th
Selective withdrawal period: Feb 15th – March 1
Last day of classes: May 7th
Reading day(s): May 9th
Final exam period: May 11th –May 18th

NOTE: The contents of the syllabus are subject to change at the discretion of the instructor. Changes will be communicated, and updated syllabus will be provided as soon as possible.

By continuing to be enrolled in this course, you agree to abide by the policies set forth in this document.