**Psych 3020: Research Methods in Psychology II**

Summer 2021

Asynchronous Online

**Course Information**

Instructor: Kyle Ripley, MA2

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Office: Zoom link provided on Canvas

Office Hours: By appointment

Please email me from your MU account. University policy requires all email communication between instructors and students be conducted through the student’s MU account. When you email me, please indicate the course in which you are enrolled.

**Textbook**

Field, A. (2016). *An adventure in statistics: The reality enigma*. Sage.

ISBN-13: 978-1446210451

To succeed in this course and to learn the material as best as possible, students should read the assigned chapter(s) ***in addition to*** watching the lecture videos.

During the course of the semester, I may assign additional readings. These readings will be posted on the Canvas page for the course approximately one week before they will be discussed in class.

**Catalog Description**

“Continuation of PSYCH 3010 and required for all further labs in psychology. Prerequisites: MATH 1100 with a grade of C- or better or exemption, and PSYCH 1000, and a grade of C or better in PSYCH 3010 and STAT 1200 or exemption. This course is restricted to junior and senior psychology majors. Credit Hours: 3.”

**Course Description and Learning Outcomes**

This course is designed for undergraduate students in Psychological Sciences. In this course, we will cover the fundamentals of sampling, data management, hypothesis testing, statistical analysis, and statistical inference. Students will be taught how to apply these data analytic methods via the R computing language.

By the end of this course, I hope that you will have:

* Developed an understanding of the different types of sampling and their impact on how results are generalizable to different populations
* Learned the meaning of, and how to identify, various qualities of distributions, as well as their impact on the validity of statistical interpretations
* The ability to succinctly describe distributions of data by their key qualities (i.e., descriptive statistics)
* Become comfortable with forming research questions and testable hypotheses about data
* Learned which statistical analyses are appropriate for certain types of variables and hypotheses
* The ability to interpret, explain, and report (in APA format) the results of your analyses
* Developed the ability to import, clean, manage, manipulate, analyze, and visualize your data inside of the R computing language
* Developed the skills necessary to become a responsible and discerning consumer of data and representations/misrepresentations of data
* Gained first-hand experience with data analysis and come through it thinking “Hey, that was actually pretty fun!”

**Course Format**

This course will be taught online asynchronously. The course material is split into two different categories: lecture and lab. Lecture videos will consist of discussions about the material presented in the textbook. Lab videos, on the other hand, will consist of demonstrations to help you learn to program in R (it’s okay if you have no previous programming experience, that’s what I’m here for!).

We will make great use of canvas in this course, so I strongly encourage you to turn on notifications for the course.

**Assignments and Grading**

Performance in this class will be evaluated based on homework assignments, quizzes, and exams. All submissions will be made through Canvas. ***All assignments, quizzes, and exams will be due by 11:59pm on the due date.***

**Homework Assignments**: 34% of final grade (200 points)

There will be 12 homework assignments during the semester. They are worth 20 points each, and the two lowest scores will be dropped. Homework assignments will primarily focus on applying the skills learned during lab sessions**.** No late assignments will be accepted.

If you submit your homework assignment by 11:59pm the Thursday before it’s due, I will give you feedback on it as if I were grading it. You may then incorporate the feedback before turning in the final submission.

**Quizzes**: 16% of final grade (100 points)

There will be 11 quizzes during the semester. They are worth 10 points each, and the lowest score will be dropped. Quizzes will primarily focus on recollection of material covered in lecture that week. No make-up quizzes will be given.

**Exams**: 50% of final grade (300 points)

There will be 4 exams, three during the semester (midterm) and a final. Midterm exams *will not be* cumulative; the final exam *will be* cumulative. Each exam will be worth 100 points; however, your lowest exam grade will be dropped. If you’re happy with your grades on the first three exams, you do not need to take the final.

## Mental Health

The University of Missouri is committed to supporting student well-being through an integrated network of care, with a wide range of services to help students succeed. The MU Counseling Center offers professional mental health care, and can help you find the best approach to treatment based on your needs. Call to make an appointment at 573-882-6601. Any student in crisis may call or go to the MU Counseling Center between 8:00 – 5:00 M-F. After hours phone support is available at 573-882-6601.

Visit our website at https://wellbeing.missouri.edu to take an online mental health screening, find out about workshops and resources that can help you thrive, or learn how to support a friend. Download Sanvello, a phone app that teaches skills and strategies to help you maintain good mental health. Log in with your Mizzou e-mail to unlock all the tools available through Sanvello at no cost to you.

**Basic Needs Security**

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, or who does not have a reliable way to make it to campus, and believes this may affect their performance in this course (and other courses) is urged to contact the Dean of Students. Mizzou offers free food support resources through the Tiger Pantry.

**Academic Honesty**

Academic integrity is fundamental to the activities and principles of a university. All members

of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

**Intellectual Pluralism**

The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the Departmental Chair or Divisional Director; the Director of the

Office of Students Rights and Responsibilities(http://osrr.missouri.edu/); or the MU Equity Office(http://equity.missouri.edu/), or by email at equity@missouri.edu. All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

**University of Missouri Notice of Nondiscrimination**

The University of Missouri System is an Equal Opportunity/ Affirmative Action institution and is nondiscriminatory relative to race, religion, color, national origin, sex, sexual orientation, age, disability or status as a Vietnam-era veteran. Any person having inquiries concerning the University of Missouri's compliance with implementing Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans With Disabilities Act of 1990, or other civil rights laws should contact the Assistant Vice Chancellor, Human Resource Services, University of Missouri-Columbia, 130 Heinkel Building, Columbia, Mo. 65211, 573/882-4256, or the Assistant Secretary for Civil Rights, U.S. Department of Education.

**Americans with Disabilities Act**

The University of Missouri complies with the guidelines set forth in the Americans with Disabilities Act of 1990.

Students with Disabilities:

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible.

If disability related accommodations are necessary (for example, a note taker, extended time on

exams, captioning), please register with the Office of Disability Services (http://disabilityservices.missouri.edu), S5 Memorial Union, 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

**Tentative Course Schedule**

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| --- | --- | --- | --- | --- | --- | --- |
| Week (Dates) | Assigned Reading | Topic | | Graded Events | | |
|  |  | Lecture | Lab | Homework | Quiz | Exam |
| Week 1 6/7 - 6/13 | Chapters 1 & 2 | Review of Necessary Topics | Intro to R  & Using Rmarkdown | HW 1  HW 2 | Quiz 1 |  |
| Week 2 6/14 - 6/20 | Chapters 3 & 4 | Summarizing Data &  Central Tendency | Types of Variables &  Importing and Exporting Data | HW 3  HW 4 | Quiz 2 |  |
| Week 3 6/21 - 6/27 | Chapters 5 & 6 | Visualizing Data & Z-scores | GGplot2 | HW 5 | Quiz 3 | Exam 1 |
| Week 4 6/28 - 7/4 | Chapters 7 & 8 | Probability &  Inferential Statistics | Tidying Data | HW 6  HW 7 | Quiz 4  Quiz 5 |  |
| Week 5 7/5 - 7/11 | Chapters 9, 10, & 11.2 | Robust Estimation &  Hypothesis Testing | Exploratory Data Analysis & Problem Solving and Fixing Errors | HW 8 | Quiz 6  Quiz 7 | Exam 2 |
| Week 6 7/12 - 7/18 | Chapters 13 & 14 | Relationships in Data & General Linear Model | Correlation and  Chi-Square  & Simple Linear Regression | HW 9  HW 10 | Quiz 8  Quiz 9 |  |
| Week 7 7/19 - 7/25 | Chapter 15 | Comparing Two Means | t-Tests | HW 11 | Quiz 10 |  |
| Week 8 7/26 - 8/1 | Chapter 16 | Comparing Several Means | ANOVA | HW 12 | Quiz 11 | Exam 3  & Final |

**Due Dates**

|  |  |
| --- | --- |
| Graded Event | Due Date |
| HW 1 | 6/13 |
| HW 2 | 6/13 |
| Quiz 1 | 6/13 |
| HW 3 | 6/20 |
| HW 4 | 6/20 |
| Quiz 2 | 6/20 |
| HW 4 | 6/27 |
| Quiz 3 | 6/27 |
| Exam 1 | 6/27 |
| HW 6 | 7/4 |
| HW 7 | 7/4 |
| Quiz 4 | 7/4 |
| Quiz 5 | 7/4 |
| HW 8 | 7/11 |
| Quiz 6 | 7/11 |
| Quiz 7 | 7/11 |
| Exam 2 | 7/11 |
| HW 9 | 7/18 |
| HW 10 | 7/18 |
| Quiz 8 | 7/18 |
| Quiz 9 | 7/18 |
| HW 11 | 7/25 |
| Quiz 10 | 7/25 |
| HW 12 | 8/1 |
| Quiz 11 | 8/1 |
| Exam 3 | 8/1 |
| Final Exam | 8/1 |

**Please Note: This syllabus is subject to change.** Any changes will be announced in class and posted on Canvas. Depending on how long it takes to discuss each topic, changes may or may not be made to this tentative schedule.