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Office hours: via appointment

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Course description: Interpretation, design and conduct of psychological research and statistical methods used to analyze resulting data with emphasis on experimental methods, inferential statistics and advanced correlational methods.

Prerequisites: Students must have successfully completed PSYC 3010 with a grade of C- or better to enroll in this class. Students who successfully enrolled in PSYC 3020 but whose final grade was less than a C- will be administratively dropped from this course.

Course objectives: By the end of this course you should be able to: 1) understand and design correlational, quasi-experimental, and experimental research methods, 2) organize data and present summary information (descriptive statistics, tables, and graphs using Excel) for these research methods, 3) select and interpret appropriate statistical analyses for these research methods, 4) use computers to conduct statistical analyses of data using SPSS, and 5) prepare written presentations of research methodology and results following the system for mechanics of writing and manuscript organization that are detailed in the *Publication Manual* (7th Ed.) of the American Psychological Association. Through these objectives, this course addresses the following goals specified in the APA Guidelines for the Undergraduate Psychology Major (2013):

Goal 1: Content Knowledge and Applications

1.4 Apply psychological content to solve practical problems

Goal 2: Scientific Inquiry and Critical Thinking

2.1 Exercise scientific reasoning to investigate psychological phenomena

2.2 Interpret, design, and evaluate psychological research

2.3 Incorporate sociocultural factors in scientific research practices

2.4 Use statistics to evaluate quantitative research findings

Goal 4: Communication

4.2 Write and present effectively for different purposes

4.3 Provide evidence of psychological literacy

4.4 Exhibit appropriate technological skills to improve communication

Goal 5: Professional Development

5.1 Exhibit effective self-regulation

5.2 Refine project management skills

5.5 Demonstrate appropriate workforce technological skills

What to expect in this class: Be advised that this class will be challenging. You will be learning new material in addition to what you have previously learned in Research and Statistics I, so prepare yourself for a lot of reading, homework, quizzes, testing and writing. Much of the material is cumulative so **DON'T FALL BEHIND** because it will be almost impossible to catch up. The good news is that if you keep up and regularly **DO THE WORK** you will learn a lot and can get a good grade. *The key is that you must do the work.* **I encourage you to request extra help – call me, come to office hours, use Teams to have virtual office hours with me, or email me. Figure out a way to get help if you need it, but don't be passive because the material only gets more complex as the semester goes on.**

Required text for this course:

- 1) Jackson, S. L. (2016). *Research methods and statistics: A critical thinking approach* (5th ed.). Belmont, CA: Wadsworth.

- 2) American Psychological Association. (2019). *Publication manual of the American Psychological Association* (7th ed.). Washington, DC.

Course materials: (<https://elearn.memphis.edu>) Sign into eCourseware from the Quick Links option on the U of M homepage. Then choose the link for this course to gain access to course materials including the syllabus, mini-lectures, labs and lab homework, quizzes, and exams. Note that the course material is intended to be done IN ORDER of how it is listed in the course content and syllabus. To avoid confusion, don't skip around. Check the syllabus and end-of-unit checklists to make sure you did everything you were supposed to do in each unit. **You will need a PC or Mac desktop computer or laptop with appropriate software to fully access the course and complete assignments.**

Hardware Requirements for the course:

PC users

Operating System: Windows 10 or later

Available disk space: 5 GB or more

Internet connection: DSL or Broadband

Browser: Latest Internet Explorer or Firefox, [must pass system check](#)

Audio: Sound card and speakers or headphones (to listen to audio in lectures or experiments)

Mac users

Operating System: Mac OS X or later.

Available disk space: 5 GB or more

Internet connection: DSL or Broadband

Browser: Latest Firefox, [must pass system check](#)

Audio: Sound card and speakers or headphones (to listen to audio in lectures or experiments)

Software Requirements for the course:

Microsoft Office 365: Written assignments must be done in Word; lab exercises must be done in Excel (Microsoft Office 365 is available to all U of M students for free at <https://www.memphis.edu/getoffice>)

Univ of Memphis Citrix (aka [UMApps](#)). Instructions are included with first Lab Exercise and were emailed prior to start of the course

SPSS accessed remotely via U of M Citrix (aka UMApps)

Adobe Acrobat Reader (latest version)

Communication: Course announcements and consultation with the instructor will occur in class, via the News Item space on the course home page, directives in the course content, and sometimes via email. You are required to activate your university e-mail account in order to be a student at the University. The University considers this account to be your official university e-mail address and will use it to disseminate information. You must either check your university e-mail account regularly or forward your university e-mail to a personal e-mail account that you will check regularly. After you have established your university e-mail account, you can use iAM, the University's identity management service, to forward your university e-mail to a personal e-mail account.

Graduating Senior Field Text: All graduating senior psychology majors must complete a field test during their last semester. This test is used as we evaluate ourselves as part of our SACS data. We are working to ensure no senior is surprised by this. The following is a sample statement you may include on your syllabus.

All graduating senior psychology majors must complete a field test during their last semester. Once you have completed the field test and it has been processed, that portion of your UMDegree will show this requirement fulfilled, and graduation analysts will receive confirmation. This is neither a timed test nor a test for which you have to study. If you are

a psychology major graduating this semester, please be on the lookout for an email with further instructions later this semester.

Students with disabilities: If you have a disability that interferes with completion of any coursework (including tests) or difficulty in accessing any course materials, (1) notify the instructor privately during the first two weeks of the course and (2) contact Disability Resources for Students (DRS) located in 110 Wilder Tower and at 678-2880 or via email (drs@memphis.edu). DRS offers a comprehensive program of services and academic accommodations designed to provide access and opportunity to students with disabilities. The instructor will work with you and DRS to determine how best to adapt course materials or instruction. DRS also offers volunteer opportunities for students to provide copies of notes to students who have that as an approved accommodation. Scholarship, community service, and volunteer hours can be validated for this service by DRS.

Student Health: Students who have a positive COVID-19 test should contact the Dean of Students at deanofstudents@memphis.edu. See <https://www.memphis.edu/coronavirusupdates/> for COVID-19 information.

Student Resources: Students who need additional resources can visit the Dean of Students Office website at <https://www.memphis.edu/deanofstudents/crisis/index.php>.

Respecting Diversity: The University of Memphis Department of Psychology seeks to understand and address issues of culture, disability, ethnicity, gender, generation, sexual orientation, national origin, privilege, race, and different views on religion in education, policy, research, practice, recruitment, and retention of diverse populations. In this, it strives to offer resources that promote goals of cultural humility, mutual respect, and social justice at the level of the department, university, and broader community.

The Department of Psychology endorses the American Psychological Association's policies and recommendations regarding these diversity issues, as evident in the following sources:

Office of Ethnic Minority Affairs

<http://www.apa.org/pi/oema/>

Ethical Principles of Psychologists and Code of Conduct

<http://www.apa.org/ethics/code/index.aspx>

Publication Manual of the American Psychological Association, Seventh Edition

<http://www.apastyle.org/>

If you feel that you have experienced discrimination based on culture, disability, ethnicity, gender, generation, sexual orientation, national origin, privilege, race, and different views on religion, please contact the Office for Institutional Equity at the Administration Building, Room 156 (901-678-2713). To make a report, you may fill out an online form at <https://www.memphis.edu/report/submit-a-report/index.php>.

University of Memphis Title IX Policy Statement: The University of Memphis is committed to ensuring equity in its educational benefits, programs and activities. Sexual harassment includes but is not limited to sexual assault, dating violence, domestic violence, and stalking. If you or someone you know has been subjected to conduct that may be sexual harassment, you are encouraged to make a report to the Office for Institutional Equity via email (oie@memphis.edu), by phone (901-678-2713), or you can fill out this online form (<https://www.memphis.edu/report/submit-a-report/title-ix.php>). Please note that while not all faculty are mandatory reporters, anyone in the following categories is required to report any sexual harassment they become aware of: faculty and staff who supervise employees, including student workers, student organization advisors, coaches, administrators, and any University employee who has significant responsibility for student and campus activities, included but not limited to student housing, student discipline and campus judicial proceedings. Similarly, all administrators and supervisory faculty and staff are required to report discrimination on the basis of race, color, national origin, disability, age, religion/creed, veteran status. If you want to make a CONFIDENTIAL report, you can contact the University Counseling Center, 214 Wilder Tower (901-678-2713), the Student Health Center, 200 Hudson Health Center (901-678-2287), or the Office of Victim Services (901-678-4471).

More information can be found at <https://www.memphis.edu/oie/title9/sexualmisconduct.php> while the University of Memphis Interim Sexual Harassment & Sexual/Gender-Based Misconduct Policy can be found at <https://memphis.policytech.com/dotNet/documents/?docid=716&public=true>.

Mental and Physical Health Services: As a student, you may experience a range of issues that can cause barriers to learning, such as physical health problems, strained relationships, increased anxiety, alcohol and drug problems, feeling down, difficulty concentrating, and lack of motivation. These mental and physical health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. The University of Memphis has a range of confidential mental and physical health services available on campus to assist you, including:

- The Psychological Services Center in the Psychology Building, room 126 (901-678-2147)
- The University Student Health Center at 200 Hudson Health Center (901-678-2287)
- The University Counseling Center at 214 Wilder Tower (contact using any method below)
 - 901-678-2068 Monday through Friday 8:00 am – 4:30 pm (for an emergency or to schedule an appointment)
 - counseling@memphis.edu to schedule an appointment
 - Enter their virtual waiting room to see someone soon ASAP at <https://uofmccounseling.doxy.me/counselingwaitingroom> between the hours of 10 am and 3 pm.
 - 901-678-4357 (HELP) afterhours for an emergency

Academic integrity and student conduct statement: Students are expected to behave in accordance with the university's Code of Student Rights and Responsibilities, found here: <https://www.memphis.edu/osa/pdfs/csrr.pdf>. Plagiarism, cheating, and other forms of academic dishonesty will not be tolerated. Students engaging in academic dishonesty will receive a 0 on the associated assignment and may reported to the chair of the department or the University's Office of Student Accountability and the Academic Integrity Committee. Consistent with these regulations and policies, students are expected to behave in accordance with the American Psychological Association Code of Ethical Conduct, found here: <https://www.apa.org/ethics/code/principles.pdf>

Plagiarism (that is, using other writers' words or ideas without acknowledging the source), submitting duplicate lab assignments, cheating on tests, utilization of prefabricated papers, or other forms of academic dishonesty will not be tolerated. By taking this course, you agree that all assignments may undergo a plagiarism review process using Turnitin.com, by which the assignment may be included as a source document in Turnitin.com's restricted access database. Assignments not submitted according to the instructor's procedures may be penalized or may not be accepted at all.

Dr. O's addendum: If you need help in this class, ask for help!! Don't cheat or plagiarize. If I catch you, I will do everything I can to see you get the maximum punishment possible.

Students engaging in disruptive behaviors or general conduct that violates the rules and regulations of the university may be removed or excluded from the classroom. The instructor may report classroom misconduct to the Department Chair or the University's Office of Student Accountability.

Attendance: Expect to login at least every other day. If you don't, there is a good chance you will not get everything done. Also, if you want to do well, do not try to complete everything in a weekly unit on the last day it is open.

If you fail to submit a paper draft when it is due, submit lab homework or practice problems when they are due, or take a quiz or exam when scheduled, you will receive a 0 unless arrangements have been made in advance. Ignorance will not be accepted as an excuse for missing course deadlines. There will be NO exceptions to this rule. **You will be allowed ONLY ONE dropped quiz and TWO DROPPED PAPER DRAFTS over the course of the semester. Please note that you must turn in at least one paper draft from each type of experimental design that we cover - you CANNOT drop two papers that use the same type of statistical analysis.** Students who submit all 10 paper drafts (they must be

complete) will receive 15 extra credit points. **Make up exams will ONLY be given if an emergency arises and proper documentation will be required.**

Assessment:

Exams and quizzes: All students will take four exams (3 regular exams + one comprehensive final exam) consisting of multiple choice, T/F, short answer, computations, and short essay questions. Most of the questions will require application of concepts covered in class and may require you to interpret data and/or solve problems. Questions on the exams will come from material covered in class, material in the readings not explicitly covered in class, and material from the laboratory component of the course.

Quizzes will include material contained with course readings, mini-lectures, labs, homework, and discussion boards. These quizzes allow me to determine the level of understanding in the class and also allow you to determine where you might be having problems before you fall really far behind. Quizzes will consist of multiple choice, T/F, and short answer questions and may require you to interpret data and solve statistical problems. Your lowest quiz score will be dropped.

Both the quizzes and exams must be taken via the corresponding eCourseware site for this course. A password to access the quizzes and exams will be distributed in class.

Lab Homework: Lab experiments can be completed in most browsers on a desktop or laptop (large screen is required). In order to complete the lab data analysis exercises, you will be using SPSS, version 26. SPSS is available in campus computer labs and via your personal computer (PC or Mac, desktop or laptop) using [VPN and the cloud-based umApps](#) (see [this video for using umApps, assumes VPN already set up](#)). Once you get used to it, umApps is not too difficult to use, but it can be confusing initially for new users. The most important thing is to pay particular attention to where you save any and all files that you create. The default “Documents” folder on umApps is in the cloud and IS NOT the Documents folder on YOUR computer. It is strongly recommended that you [watch the introductory video](#) and ensure you can access umApps from your computer.

The instructions for each lab are written for SPSS version 26. Instructions for other versions of SPSS WILL NOT be provided. You will also need Microsoft Word and Microsoft Excel 365 to complete lab exercises. Lab homework is an important part of your grade and topics covered are fair game for exams. All lab homework must be completed and turned in via the eCourseware dropbox by the due date. Late lab homework will not be accepted.

Practice problems: In preparation for exams, multiple sets of practice problems will be distributed. You are expected to complete all sets, but only the final set must be submitted for course points via the corresponding dropbox by the due date. No points will be awarded for practice problems submitted after the due date.

Paper drafts: Throughout the semester, paper drafts will be assigned to assess your ability to summarize a research project’s hypothesis, method, and results. These drafts must be written using the guidelines outlined in the 7th edition of *APA Publication Manual*. All paper drafts must be completed and turned in via the corresponding eCourseware dropbox by the due date. Your lowest two lowest paper draft grades will be dropped. Late drafts will not be accepted.

Discussion boards: Your participation on discussion boards will be expected and failure to participate will adversely affect your grade. You must post at least once before the discussion board closes.

The rubric for grading discussion board posts will be as follows:

- 5 points=Outstanding (a thoughtful comment that invites analysis, synthesis, or evaluation, or makes connections between the current topic and previous lecture, discussion or readings; an especially pertinent comment/question related to the activity; a comment that shows you have thought seriously and critically about the activity)

- 4 points=Good (a relevant comment that shows good understanding of the activity but does not invite deep or critical thinking; a comment that attempts at least one connection to other course material)
- 3 points=Acceptable (a comment that shows a basic grasp of the activity; shows an attempt at critical thinking in some places; reflects a relatively small amount of engagement with the material)
- 2 points= Marginal (a confusing comment or one that simply repeats the material in the activity; shows a low level of critical thinking; indicates very little engagement with the material)
- 1 point=Poor (illogical or irrelevant comment; comment that is very brief and reflects very little thought)
- 0 points=Not posted on time or otherwise not acceptable.

Grading: Grades will be based on the total points earned from the examinations, quizzes, lab assignments, paper drafts, discussion board participation, and final manuscript divided by the total number of possible points. The percentages listed below will be used to determine grades.

A = 89.5 – 100, B = 79.5 – 89.49, C = 69.5 – 79.49,
 D = 59.5 – 69.49, F = 0 – 59

POINTS OVERVIEW:		
ITEM:	POINTS EACH	SUBTOTAL
Course Exams	3 @ 100	300
Final Exam	1 @ 50	50
Quizzes (1 dropped)	6 @ 10 (1 lowest dropped)	60
Paper drafts (2 dropped)	8 @ 25	200
Lab homework	6 @ 10	60
Practice problems	4 @ 10	40
Discussion board posts	6 @ 5	30
TOTAL POINTS POSSIBLE		740 points

Continued on next page

Current Syllabus (**pause points for feedback marked in red**; changes will be announced as a News Item and revised syllabus uploaded):

UNIT	Availability	What you need to do:
1	TUE JAN 21 – SUN JAN 26	<ul style="list-style-type: none"> • Read the Syllabus • Read the info on getting extra credit for SONA participation • Post on DISCUSSION BOARD 1 • View Mini-lecture 1: Course Format • Complete Course content agreement • Read Jackson text pp. 105-126 • View Mini-lecture 2: Central Tendency & Variation • Read instructions to use and download SPSS via Citrix • Complete SPSS Lab 1 PRACTICE EXERCISE: Entering data into SPSS and calculating descriptives and submit to DROPBOX • Complete SPSS Lab HOMEWORK 1 and submit to DROPBOX • View QUIZ 1 password • Complete QUIZ 1: Descriptive statistics/Graphs • View Mini-lecture 3: Description of Paper Drafts • Look over paper draft template and grading rubric • View Mini-lecture 4: Using the APA OPL Website • Complete Be a Juror Experiment on APA OPL website
2	MON JAN 27 – SUN FEB 2	<ul style="list-style-type: none"> • Read Jackson text pp.189-194, 215-219, 231-252, and 261-274 • View Mini-lecture 5: Two group designs • Complete SPSS Lab PRACTICE EXERCISE 2: t-tests (two group designs) and submit to DROPBOX • Complete SPSS Lab HOMEWORK 2 and submit to DROPBOX • Complete PRACTICE PROBLEMS 1: t-test (not graded) and submit to DROPBOX • Look over APA Manual pp. 48-67 (sample papers), 77-91 (reporting quantitative results), 210-235 (sample Tables & Figures) and Jackson text pp. 404-418 and Appendix E (sample paper) • View Mini-lecture 6: Be a Juror Two Group Data Analysis and Method Review • Submit T-TEST PAPER DRAFT 1 (Be a Juror Two Group) to DROPBOX • Complete Self-reference experiment on APA OPL website • Complete QUIZ 2: Purpose/Rationale, Method, Results, Interpretation of Results
		FEB 2 IS LAST DAY TO DROP CLASS WITHOUT A "W" GRADE
3	MON FEB 3 – SUN FEB 9	<ul style="list-style-type: none"> • Post on DISCUSSION BOARD 2 • View Mini-lecture 7: Self-Reference Data Analysis and Method Review • Submit T-TEST PAPER DRAFT 2 (Self-reference) to DROPBOX • Complete PRACTICE PROBLEMS 2: t-test (not graded) and submit to DROPBOX • Complete QUIZ 3: Two-group design • Complete Mirror Drawing experiment on APA OPL website
4	MON FEB 10 – SUN FEB 16	<ul style="list-style-type: none"> • Mini-lecture 8: Mirror Drawing Data Analysis and Method Review • Submit T-TEST PAPER DRAFT 3 (Mirror Drawing) to DROPBOX • Complete T-TEST FINAL PROBLEMS and submit to DROPBOX • Study for EXAM 1 • Complete EXAM 1

UNIT	Availability	What you need to do:
5	MON FEB 17 – SUN FEB 23	<ul style="list-style-type: none"> View Mini-lecture 9: Between-subjects One-way ANOVA Read Jackson text pp. 282-300 Post on DISCUSSION BOARD 3 Complete SPSS Lab PRACTICE EXERCISE 3: between-subjects one-way ANOVA and submit to DROPBOX (not graded) Complete SPSS Lab HOMEWORK 3 and submit to DROPBOX Complete PRACTICE PROBLEMS 3: between-subjects one-way ANOVA and submit to DROPBOX (not graded) Complete QUIZ 4: between-subject one-way ANOVA View Mini-lecture 10: Be a Juror Data ANOVA Analysis and Method Review Submit ONE-WAY ANOVA DRAFT 1 (Be a Juror ANOVA) to DROPBOX
6	MON FEB 24 – SUN MAR 2	<ul style="list-style-type: none"> View Mini-lecture 11: Repeated-measures One-way ANOVA Read Jackson text pp. 300-308 Post on DISCUSSION BOARD 4 Complete SPSS Lab PRACTICE EXERCISE 4: repeated-measures one-way ANOVA and submit to DROPBOX (not graded) Complete SPSS Lab HOMEWORK 4 and submit to DROPBOX Complete PRACTICE PROBLEMS 4: repeated-measures one-way ANOVA and submit to DROPBOX (not graded) Complete QUIZ 5: repeated-measures one-way ANOVA Complete Mazes experiment on APA OPL website
7	MON MAR 3 – SUN MAR 9	<ul style="list-style-type: none"> Complete PRACTICE PROBLEMS 5: Between-subjects One-way ANOVA and submit to DROPBOX (not graded) Complete PRACTICE PROBLEMS 6: Repeated-measures One-way ANOVA and submit to DROPBOX (not graded) View Mini-lecture 12: Mazes Data Analysis and Method Review Submit ONE-WAY ANOVA DRAFT 2 (Mazes) to DROPBOX Complete Reaction Time Color experiment on APA OPL website
	MON MAR 10 – SUN MAR 16	NO UNITS OPEN – SPRING BREAK
8	MON MAR 17 – SUN MAR 23	<ul style="list-style-type: none"> View Mini-lecture 13: Reaction Time Color Data Analysis and Method Review Submit ONE-WAY ANOVA DRAFT 3 (Reaction Time Color) to DROPBOX Complete ONE-WAY ANOVA FINAL PROBLEMS and submit to DROPBOX Study for EXAM 2 Complete EXAM 2 Complete Poggendorff experiment on APA OPL website
9	MON MAR 24 – SUN MAR 30	<ul style="list-style-type: none"> View Mini-lecture 14: Two-way ANOVA Read Jackson text pp. 321-341 Post on DISCUSSION BOARD 5 Complete SPSS Lab PRACTICE EXERCISE 5: Two-way ANOVA and submit to DROPBOX (not graded) Complete SPSS lab HOMEWORK 5 and submit to DROPBOX View Mini-lecture 15: Main Effects & Interactions Complete PRACTICE PROBLEMS 7: Two-way ANOVA and submit to DROPBOX (not graded) View Mini-lecture 16: Poggendorff Analysis and Method Review Submit TWO-WAY ANOVA DRAFT 1 (Poggendorff) to DROPBOX Complete Gender Perception experiment on APA OPL website

UNIT	Availability	What you need to do:
10	MON MAR 31 – SUN APR 6	<ul style="list-style-type: none"> • Complete TWO-WAY ANOVA FINAL PROBLEMS and submit to DROPBOX • Mini-lecture 17: Gender Perception data Analysis and Method Review • Submit TWO-WAY ANOVA DRAFT 2 (Gender Perception) to DROPBOX • Complete QUIZ 6: Two-way ANOVA
11	MON APR 7 – SUN APR 13	<ul style="list-style-type: none"> • View Mini-lecture 18: Nonparametric Statistics • Read Jackson text pp. 376-393 • Post on DISCUSSION BOARD 6 • Complete SPSS Lab PRACTICE EXERCISE 6: Chi-square and submit to DROPBOX and submit to DROPBOX (not graded) • Complete SPSS lab HOMEWORK 6 and submit to DROPBOX • Complete PRACTICE PROBLEMS 8: Nonparametric Tests and submit to DROPBOX (not graded) • Mini-lecture 19: Cell Phones/Fatal Accidents (Preexisting Data Set) Data Analysis and Method Review • Submit CHI-SQUARE DRAFT 1 (Cell Phone Fatalities) to DROPBOX
		<ul style="list-style-type: none"> • APR 13 IS LAST DAY TO DROP THE COURSE WITH A “W” GRADE
12	MON APR 14 – SUN APR 20	<ul style="list-style-type: none"> • Complete NONPARAMETRIC (CHI-SQUARE) FINAL PROBLEMS and submit to DROPBOX • Complete QUIZ 7: Nonparametric stats • Mini-lecture 20: Race/SES & Cancer Outcomes (preexisting data set) Data Analysis and Method Review • Submit CHI-SQUARE DRAFT 2 (Race SES Cancer Outcomes) to DROPBOX
13	MON APR 21 – SUN APR 27	<ul style="list-style-type: none"> • Study for EXAM 3 • Complete EXAM 3 • Study for FINAL EXAM
14	MON APR 28 – WED APR 30 **SHORT WEEK**	<ul style="list-style-type: none"> • Complete FINAL EXAM