**Psychology 395:**

**Research Design & Measurement in Psychological Research**

**Spring 2023**

**LECTURE Day/Time:**

**T & R 9:10-10:00AM**

**LECTURE LOCATION:**

**Ernst Bessey Hall Rm 108**

**Instructor:** Nathan T. Carter, Ph.D.

**Office:** 317 Psychology

**e-mail:** [ntcarter@msu.edu](mailto:ntcarter@msu.edu)

**NOTE:** Office Hours Requires at Least 24 hours Advance Notice Email to the Instructor

(If no one emails at [ntcarter@msu.edu](mailto:ntcarter@msu.edu), I am unlikely be there!)

**OFFICE HOURS:** W 11AM-1PM

**REQUIRED TEXT:**

Morling, B. (2021). *Research Methods in Psychology* (4th Ed). Norton. (NOTE: You can use the 3rd and 2nd Editions as well, but class attendance becomes more important if you do, and neither myself or your TAs are responsible for filling any gaps).

**Overview of course:**

The primary goal of this course is to familiarize students with both the philosophical and practical considerations of conducting psychological research. Students will learn the basics of designing of experimental and observational studies, data collection and analysis, and reporting.

**Course materials:**  Class and lab announcements and communication will be conducted using D2L. The D2L website can be found at <https://d2l.msu.edu/d2l/loginh/>

**Computer:**We will be using R Studio for data analysis in labs. This is a free software that can be downloaded here: <https://posit.co/download/rstudio-desktop/>. Note that you must download both R (the “base” program) and R Studio (the interactive part of the program where code is written); you will only need to open R Studio when using the program.

**GRADING:**

Grades will be based (a) EIGHT (8) TAKE-HOME LAB ASSIGNMENTS; (b) FOUR (4) TAKE-HOME EXAMS; and (c) RESEARCH PARTICIPATION (see below)

**(a) EIGHT TAKE-HOME LAB ASSIGNMENTS**: 40% (5% Each)

Lab assignments will be assigned that asks you to analyze and/or interpret data using the skills you learn in class and lab. These assignments are intended to help cement the knowledge you have gained into workable skills. Notably, this will familiarize you with R, which is a very in-demand skill in business and academia.

Lab Assignments will be reviewed by the Teaching Assistant (TA) in charge of your section. Prior to the assignment, your TA will review the skills necessary and walk through an example. Afterward, you will be required to complete the assignment and turn them in to your TA. Your TA will let you know how they prefer to receive completed assignments (e.g., email, D2L, etc.).

**(b) FOUR TAKE-HOME EXAMS:** 60% (15% Each)

Each exam will be a combination of multiple-choice questions, essay, and/or data-analytic exercises. There will be multiple forms that will be randomly assigned and the data-analytic exercise will be done with datasets that are “earmarked” so that they have slightly different properties. In other words, it will be difficult to cheat, and if you cheat on the data analytic exercise, I will know who you cheated from! My advice: Don’t do it! (See Academic Honesty section).

IMPORTANT POINTS ABOUT EXAMS:

* **YOU WILL HAVE ONE WEEK TO COMPLETE EACH EXAM; THEY ARE DESIGNED TO TAKE APPROXIMATELY ONE HOUR IF YOU WERE TO SIT DOWN AND DO IT ALL AT ONCE. IN OTHER WORDS, NO EXTENSIONS WILL BE GRANTED.**
* **THERE WILL BE NO LECTURE THE DAY THE SYLLABUS SAYS THERE IS AN EXAM. THIS GIVES YOU CLASS TIME TO WORK ON THIS.**
* **DATASETS WILL BE EARMARKED AND DIFFERENT EXAM FORMS WILL BE RANDOMLY ASSIGNED. DON’T CHEAT! I WILL KNOW!**

The Final Exam is NOT cumulative. Each exam will consist of material covered after the previous exam. Guaranteed baseline final grade calculation:

90%-100% = 4.0

85%-89% = 3.5

80%-84% = 3.0

75%-79% = 2.5

70%-75% = 2.0

69% or lower = 0.0

**(c) RESEARCH PARTICIPATION (REQUIRED)**

One fundamental way of learning firsthand about psychological research is to participate in research studies. You can register an account and sign up for studies here. There is a detailed document on the D2L website that provides all of the information that you need to use the system. There is also a link to an online help room for the Sona system posted on D2L.

Note: Make sure that you are on the psychology Sona site. The Department of Communication Arts and Sciences also has a Sona site. We do not have access to this data and cannot grant participation credit for experiments done under the other site.

**You will be required to earn 5 hours of research participation**. Details regarding this element of the course are posted on D2L. Any questions, inaccuracies, or problems should be directed to: Audra Jeffrey, the Human Subject Pool Administrator, jeffre22@msu.edu. Her office is Room 100, Psychology Building. It is your responsibility to sign up, participate in the experiments, and to track your personal history on the computer. Neither the instructor nor the course assistants have a record of your research participation until the end of the course. We do not know how many credits you have or if you have penalty points. ALL questions regarding research participation must be directed to Audra Jeffrey.

**Deadline:** **Research participation should be completed by the last day of classes, April 28, 2023, at 5:00 pm. There will not be any experiments conducted after this time.**

Alternative to research participation: If you do not wish to participate in psychology experiments, you may fulfill this requirement by writing a one-page paper for every hour of research participation for a total of seven one-page papers. A detailed explanation of the paper requirements is posted on D2L. All papers are due by the last day of classes, April 28, 2023, at 5:00 pm. The drop box will close promptly at 5:00 and papers will not be accepted after this time. There will be no exceptions to this rule.

**Extra Credit:**

In addition to the assigned research participation, you may participate in additional experiments for extra credit. For each hour, you will earn **0.50 PERCENTAGE POINT** onto your final grade. The **maximum extra credit is** **10 hours or 5 percentage points** onto your final grade. This means if your final grade was 80%, and you did the full extra credit, your final grade is 85%. Note this is 10 hours BEYOND the 5 required for the course.

**Section Numbers**

*MAKE SURE THAT WHEN YOU SIGN UP FOR SONA, YOU SIGN UP FOR THIS SECTION OF THE CLASS!* There are many sections of each class, and if you sign up for the wrong one, I won’t receive any of your credits at the end of the semester. This can be ﬁxed after grades are in, but it takes more paperwork and can have impacts on your transcript in weird ways. If you sign up for the wrong section you can change this throughout the semester, but it is your responsibility to know what section you are in and make sure this is correct in SONA. Check this more than just when you initially sign up.

**Miscellaneous MSU Rules/Regulations**

**Academic Honesty**:

[The Spartan Code of Honor](https://honorcode.msu.edu/) states, "As a Spartan, I will strive to uphold values of the **highest ethical standard**. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that **honor is worth more than grades**. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do." In addition, Article 2.III.B.2 of the [Student Rights and Responsibilites (SRR)](http://splife.studentlife.msu.edu/academic-freedom-for-students-at-michigan-state-university) states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." The (insert name of unit offering course) adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See [Spartan Life: Student Handbook and Resource Guide](http://splife.studentlife.msu.edu/) and/or the MSU Web site: [www.msu.edu](http://www.msu.edu/).)

Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com Web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the [Academic Integrity](https://msu.edu/~ombud/academic-integrity/index.html) webpage.)

**Limits to confidentiality.** Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies.  However, students should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others.  As the instructor, I must report the following information to other University offices (including the [MSU Police Department](http://police.msu.edu/)) if you share it with me:

--Suspected child abuse/neglect, even if this maltreatment happened when you were a child,

--Allegations of sexual assault or sexual harassment when they involve MSU students, faculty, or staff, and

--Credible threats of harm to oneself or to others.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared.  In almost all cases, it will be your decision whether you wish to speak with that individual.  If you would like to talk about these events in a more confidential setting you are encouraged to make an appointment with the [MSU Counseling Center](http://counseling.msu.edu/).

**Accommodations for Students with Disabilities** (from the [Resource Center for Persons with Disabilities (RCPD):](http://counseling.msu.edu/) Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored. **IF YOU HAVE AN EXAM TIME ACCOMODATION IT WILL BE HONORED BUT YOU MUST RESEND YOUR VISA WITH YOUR EXAM EACH TIME TO ENSURE YOU HAVE COMPLETED IT IN TIME.** (For example if your VISA accommodation gives you twice the amount of time you will have two weeks to complete the take-home exam).

**Commercialized Lecture Notes**: [The Code of Teaching Responsibility](https://reg.msu.edu/AcademicPrograms/Print.asp?Section=514) requires that students receive the written consent of the instructor to sell or otherwise commercialize class notes and materials.  Specifically, the Code of Teaching Responsibility states, “Instructors may allow commercialization by including permission in the course syllabus or other written statement distributed to all students in the class.”  The Ad Hoc Committee on Social Media, Pedagogy, Academic Rights and Responsibilities in their final report (January 10, 2014) suggested the following language:

*As members of a learning community, students are expected to respect the intellectual property of course instructors.  All course materials presented to students are the copyrighted property of the course instructor and are subject to the following conditions of use:*

*1. Students may record lectures or any other classroom activities and use the recordings only for their own course-related purposes.*

*2. Students may share the recordings with other students enrolled in the class, provided that they also use the recordings only for their own course-related purposes.*

*3. Students may not post the recordings or other course materials online or distribute them to anyone not enrolled in the class without the advance written permission of the course instructor and, if applicable, any students whose voice or image is included in the recordings.*

*4. Any student violating the conditions described above may face academic disciplinary sanctions, including receiving a penalty grade in the course.*

**Disruptive Behavior**: Article 2.III.B.4 of the [Student Rights and Responsibilities (SRR)](http://splife.studentlife.msu.edu/academic-freedom-for-students-at-michigan-state-university) for students at Michigan State University states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.III.B.10 of the [SRR](http://splife.studentlife.msu.edu/academic-freedom-for-students-at-michigan-state-university) states that "The student and the faculty share the responsibility for maintaining professional relationships based on mutual trust and civility." [General Student Regulation 5.02](http://splife.studentlife.msu.edu/regulations/general-student-regulations) states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action.

**Religious Accommodations**

The faculty and staff must be sensitive to the observance of religious holidays so that students who absent themselves from classes on these days are not disadvantaged in any way. Students who miss class, assignments, or exams to observe a religious holiday must be accommodated in ways that include, but are not limited to, the following:

(1) Professors and instructors should make every effort to avoid scheduling exams and oral presentations during the major holidays of religions on campus (Jewish, Muslim, Hindu, etc.). If a professor has scheduled such an exam or oral presentation, exams must be reasonably rescheduled without academic penalty.

(2) Absences may not be counted as a missed class in any course in which attendance is a measure of academic performance. Some instructors attempt to cover all reasons for student absences from required academic events such as quizzes or exams with a blanket policy, e.g., allowing the student to drop one grade or two quizzes without penalty, or allowing a certain number of “unexcused” absences during a semester. This kind of policy should not be applied to religious observances, as this penalizes religions with more holidays that require absences than others.

(3) Reasonable extensions of time must be given, without academic penalty, for missed assignments; students must be allowed to schedule presentations around such absences. Make-up work should be appropriate and not more difficult than the original assignment.

(4) It is the responsibility of those students who need to be absent to inform their instructor at least two weeks before the holiday, make arrangements in advance with their instructors, and to catch up on any material discussed and assignments given during that class period. Accommodations must never fundamentally alter an essential requirement of the course or academic program.

(5) All faculty must refer to this religious policy in their syllabi as well as provide the deadline in the syllabus by which students need to inform instructors of a conflict. Faculty should remind students of the deadline during the first day of class.

(6) Orientation programs for new students -- including the orientations for international students -- must inform incoming students about this policy and urge them to check for conflicts before the deadline for informing their instructors.

To support implementation of these requirements, the Office of the Provost maintains a [Religious Observance Calendar](https://provost.msu.edu/academic-resources/religious-observance-calendar) resource webpage to identify major religious observation days. Faculty must consult the calendar when planning their syllabi to make every effort to avoid having major exams or presentations on any of the major religious observation days and be responsive to requests for accommodation related to these observances.

As an institution, our practices must conform to our commitments. We are confident that by working together we can continue to build an environment that acknowledges diversity, fosters inclusion and promotes our shared success.

**Emergency Procedures**

If an emergency should occur that would require the cancellation of class, I will send an email.  While an emergency occurring during class is unlikely, please take time the first day to think through your emergency plans for such events (e.g., know at least two exits from the building). To receive emergency messages, set your cellular phones on silent mode when you enter this classroom.  If you observe or receive an emergency alert, immediately and calmly inform your instructor.  (See also [www.alert.msu.edu](http://www.alert.msu.edu/))

**LECTURE SCHEDULE**

**Note:  This schedule is tentative and subject to change.  Changes will be noted in class.**

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| **LEC** | **TOPIC** | **READING** | **LAB WK.** | **TOPIC** |
| 1/10 | NO CLASS (NSF Panel Day) | n/a | 1 | NO LAB |
| 1/12 | Introduction to the Course | Ch. 1 |
| 1/17 | Consuming Research | Ch. 2 | 2 | NO LAB |
| 1/19 | Critically Evaluating Research | Ch. 2 & 3 |
| 1/24 | Critically Evaluating Research II | Ch. 3 | 3 | **Introductions & Downloading R** |
| 1/26 | Ethics | Ch. 4 |
| 1/31 | Exam Review | (see 1/10-1/31) | 4 | **Importing/Exporting Data & R Basics** |
| 2/2 | **EXAM 1: Consuming and Evaluating Research, & Ethics** |  |  |  |
| 2/7 | Statistics Review: Descriptive Statistics I | p. 467-489 | 5 | **Desriptive Statistics & Basic Graphs** |
| 2/9 | Statistics Review: Descriptive Statistics II | p. 467-489 |
| 2/14 | Measurement in Psychological Science I | Ch. 5 | 6 | **Reliability of Self- & Other-Report Data** |
| 2/16 | Measurement in Psychological Science II | Ch. 5 |
| 2/21 | Analysis of Survey Data & Sampling | Ch. 6 & 7 | 7 | **Analysis of Survey Data** |
| 2/23 | Analysis of Survey Data & Sampling | Ch. 7 |
| 2/28 | Exam Review | (see 2/2-2/23) | 8 | **Review** |
| 3/2 | **EXAM 2: Measurement, Reliability, Validity, Survey Data, Application in R** |  |  |  |
| 3/7 | NO CLASS (Spring Break) |  | 9 | NO LAB (Spring Break) |
| 3/9 | NO CLASS (Spring Break) |  |
| 3/14 | Statistics Review: Inferential Statistics I | p. 499-522 | 10 | **Correlation & Simple Regression** |
| 3/16 | Statistics Review: Inferential Statistics II | p. 499-522 |
| 3/21 | Correlational Research I | Ch. 8 | 11 | **Advanced Regression Modeling** |
| 3/23 | Correlational Research II | Ch. 8 & 9 |
| 3/28 | Correlational Research III | Ch. 9 | 12 | **Review** |
| 3/30 | Exam Review |  |
| 4/4 | **EXAM 3: Correlational Research, Regression Modeling, Application in R** |  | 13 |  |
| 4/6 | Experimental Research I | Ch. 10 |  |  |
| 4/11 | Experimental Research II | Ch. 11 | 14 | **t-Tests & ANOVA** |
| 4/13 | Experimental Research III | Ch. 11 & 12 |
| 4/18 | Experimental Research IV | Ch. 12 | 15 | **ANOVA & Interactions** |
| 4/20 | NO CLASS (Society for I-O Psych Conference) |  |
| 4/25 | Quasi-Experimental & Small-*n* Designs | Ch. 13 | 16 | **Review** |
| 4/27 | Exam Review |  |
| 5/2 | **EXAM 4: Experimental Research, t-Test, ANOVA, Quasi-Experiments, Application in R, Open Science (NOTE: 3-5PM)** |  | 17 |  |

**LAB SCHEDULE**

**Note:  This schedule is tentative and subject to change.  Any changes will be noted in class.**

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| --- | --- | --- | --- | --- |
| **Day** | **Begin** | **End** | **Section #1** | **TA** |
| Monday | 8:00 AM | 9:50 AM | 001 | Brendan Valentine |
| Monday | 10:20 AM | 12:10 PM | 009 | Brendan Valentine |
| Monday | 4:10 PM | 6:00 PM | 002 | Daisuke Katsumata |
| Tuesday | 10:20 AM | 12:10 PM | 003 | Brendan Valentine |
| Tuesday | 4:10 PM | 6:00 PM | 004 | William Scott |
| Wednesday | 8:00 AM | 9:50 AM | 005 | Daisuke Katsumata |
| Wednesday | 12:40 PM | 2:30 PM | 006 | Daisuke Katsumata |
| Wednesday | 4:10 PM | 6:00 PM | 010 | William Scott |
| Thursday | 10:20 AM | 12:10 PM | 007 | William Scott |
| Thursday | 4:10 PM | 6:00 PM | 008 | William Scott |