



Quantitative Research Methods I

Course Number: EDMS645

Term: Spring 2021

Credits: 3

Course Dates: Jan 2021-May 2021

Optional Synchronous Course Times: Mondays: 4:15-5:15 pm

Instructor: Megan C. Masters, Ph.D.

Pronouns: she/her/hers

Office Phone: 301-405-6293

Email: mkrol@umd.edu

Office Hours: By appointment

<https://umd.zoom.us/my/mmasters?pwd=d3NpNE1ERXkxakdhUJILzhuSkIJQT09>

Meeting ID: 933 324 3832

Password: 20042017

TA: Ashani Jayasekera

Pronouns: she/her/hers

TA Email Address: ajayase1@umd.edu

TA Office Hours: Tuesdays and Thursdays, 10:00 a.m.-11:00 a.m.

Course Description

Welcome to EDMS 645! This course is designed to teach introductory concepts in statistics as applied in the social sciences, particularly education. The course will provide a presentation of commonly used statistical procedures. Proficiency with algebra is necessary; however, no mathematics beyond algebra will be taught in this course.

This course will provide a foundation for future study in statistics, but is also designed to be useful to students who never plan to take another statistics course. Statistics are often used to try to convince people that a particular point of view is correct – this class will help you judge those arguments and decide for yourself if they can hold water.

Course Objectives

After successfully completing this course you will be able to:

1. Describe and compare different distributions of data.
2. Analyze data with descriptive and inferential statistics by hand, and using statistical software.
3. Assess the conceptual benefits and limitations of each statistical test we cover in class.
4. Create appropriate research questions for different methods, matching questions with analyses that answer them.

Required Resources

- Computer with a reliable internet connection.
- Course Website: elms.umd.edu
- Book: Statistics for people who (think they) hate statistics using R (ISBN: 978-1-5443-2457-9)

- Recommended: A webcam and microphone to participate in office hours, and weekly active practice sessions.

Course Structure

This course will be fully online. All required elements will be asynchronous, but students can choose to also participate in weekly, one-hour synchronous active practice sessions to develop their fluency with course content. Each week there will be up to two hours of video content for students to watch, a short quiz, and a discussion board activity. In addition, there will be three homework assignments, and two exams. All course elements allow for access to resources such as the internet and the textbook. The exams should be done individually, but all other course element can be completed in collaboration with classmates.

The planned weekly schedule of the class will be

- Saturday: Videos, quiz, and discussion board prompts for the following week are posted by the instructor (all released at 12:01 am)
- Sunday through Wednesday: Students asynchronously watch the videos and complete the quiz.
- Monday 4:15-5:15 pm: Optional synchronous active practice.
- Wednesday at 4pm: Weekly quiz is due
- Friday at 11:59pm: Discussion board posts and homework (if applicable that week) are due.

However, students may complete assignments early, and therefore adhere to a different schedule that works better for them. For example, they could watch all the videos Sunday, and complete the quiz, discussion board posting, and homework (if applicable) on Monday, and be done for the week. *I do not recommend this*, but I understand that for some people it will be a desirable option.

Tips for Success in an Online Course

1. **Participate.** Discussions and group work are a critical part of the course. You can learn a great deal from discussing ideas and perspectives with your peers and professor. Participation can also help you articulate your thoughts and develop critical thinking skills.
2. **Manage your time.** Make time for your online learning and participation in discussions each week. Give yourself plenty of time to complete assignments including extra time to handle any technology related problems.
3. **Login regularly.** Log in to ELMS-Canvas several times a week to view announcements, discussion posts and replies to your posts. You may need to log in multiple times a day when group submissions are due.
4. **Do not fall behind.** This class moves at a quick pace and each week builds on the previous. It will be hard to keep up with the course content if you fall behind in the pre-work or post-work.
5. **Use ELMS-Canvas notification settings.** Canvas ELMS-Canvas can ensure you receive timely notifications in your email or via text. Be sure to enable announcements to be sent instantly or daily.
6. **Ask for help if needed.** If you need help with ELMS-Canvas or other technology, IT Support. If you are struggling with a course concept, reach out to me, and your classmates for support.

Campus Policies

It is our shared responsibility to know and abide by the University of Maryland's policies that relate to all courses, which include topics like:

- Academic integrity
- Student and instructor conduct
- Accessibility and accommodations
- Attendance and excused absences
- Grades and appeals
- Copyright and intellectual property

Please visit <https://gradschool.umd.edu/course-related-policies> for The Graduate School's full list of campus-wide policies and follow up with me if you have questions.

Course-Specific Policies

Names/Pronouns and Self-Identifications

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering inclusive and equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit trans.umd.edu to learn more.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all of your fellow Terps.

Communication with Instructor:

Email: If you need to reach out and communicate with me, please email me at mkrol@umd.edu. Please DO NOT email me with questions that are easily found in the syllabus or on ELMS (i.e. When is this assignment due? How much is it worth? etc.) but please DO reach out about personal, academic, and intellectual concerns/questions.

While I will do my best to respond to emails within 48 hours, you will more likely receive email responses from me on Monday-Friday from 8:00am-7:00pm EST

ELMS: I will send IMPORTANT announcements via ELMS messaging. You must make sure that your email & announcement notifications (including changes in assignments and/or due dates) are enabled in ELMS so you do not miss any messages. You are responsible for checking your email and Canvas/ELMS inbox with regular frequency.

Communication with Peers:

With a diversity of perspectives and experience, we may find ourselves in disagreement and/or debate with one another. As such, it is important that we agree to conduct ourselves in a professional manner and that we work together to foster and preserve a virtual classroom environment in which we can respectfully discuss and deliberate controversial questions.

I encourage you to confidently exercise your right to free speech—bearing in mind, of course, that you will be expected to craft and defend arguments that support your position. Keep in mind, that free speech has its limit and this course is NOT the space for hate speech, harassment, and derogatory language. I will make every reasonable attempt to create an atmosphere in which each student feels comfortable voicing their argument without fear of being personally attacked, mocked, demeaned, or devalued.

Any behavior (including harassment, sexual harassment, and racially and/or culturally derogatory language) that threatens this atmosphere will not be tolerated. Please alert me immediately if you feel threatened, dismissed, or silenced at any point during our semester together and/or if your engagement in discussion has been in some way hindered by the learning environment. I would be particularly grateful if you are willing to provide me with feedback if my actions or words exclude you or diminish your participation in class.

Grading

Earned grades for all student work will be reflective of the extent to which the student fulfilled the assignment requirements in the rubrics. All assessment scores will be posted on the course ELMS page. If you would like to review any of your grades (including the exams), or have questions about how something was scored, please email me to schedule a time for us to meet and discuss.

Any questions about grading should be brought to the instructor's attention in a respectful, timely manner (i.e., within one week after the grade is received) and should include information regarding:

1. On which section of the grading rubric you think you earned more points (the rubrics are posted on ELMS).
2. How many more points you believe you earned, with a justification using the rubric and the text of your paper or assignment.
3. How any grade changes would be fair to the rest of the class.

After this information is submitted, the instructor will decide whether any grade changes are warranted. Any unsubstantiated requests for unearned points will not be tolerated or considered.

Any issues or questions about assignments need to be asked well in advance of the due date. It is the students' responsibility to read all assignment directions, ask questions, and keep the instructor apprised of any issues in a timely manner. Students who ask questions near the due date run the risk of having their questions go unanswered. Students who do not inform the instructor of life emergencies/illnesses/questions until after the due date will not be granted retroactive extensions or revisions, except in extreme cases.

Late Work and Make Up Assignments

In typical semesters, I have a very clear and firm policy around late assignments or making up exams and other graded work. **However, it is important that we all recognize that this is not a typical semester.** The COVID-19 pandemic has put unusually high stress and difficulty on everyone, including the students and instructor of this class. Therefore, I anticipate that there will be many more excused absences this semester than in past semesters. To address this, I have made the following adjustments to the course:

- All assessments are asynchronous, and can be completed by the students at any point during a one-week time span. This includes exams. My hope is that this flexibility will allow students to fully participate.
- I will assume all absences are excused absences. For this reason, the weekly synchronous active practices will be optional, and not required for students to be successful in the course.
- Students will have the opportunity to turn in late work without penalty. My request is that:
 - Please keep me informed as soon as possible about your circumstances, and your needs for extensions. I ask that you let me know about a need for an extension before the assignment is due.
 - Please note that I will not be able to provide answer keys until all students have submitted their work. Therefore, please do not abuse this flexibility.
 - I reserve the right to adjust this policy if this flexibility causes a major problem.

Major Assignments

- **Quizzes**
 - 11 quizzes, starting week 2
 - Designed as knowledge and understanding checks of the readings and videos.
- **Discussion Boards**
 - 12 required postings, starting week 1
 - These are graded on effort, and designed to promote reflection at the end of each week, and monitor students' mastery of the content.
- **Homework Assignments**
 - 4 homework assignments.
 - These offer students the opportunity for deeper practice of the material to prepare for the exams.
- **Exams**
 - 2 semi-cumulative take home exams. All materials will be posted on ELMS.

Grading Structure

Learning Assessments	#	Points Each	Category Total
Pre-Class Quizzes	11	5	55
Discussion Board Postings	12	5	60
Homework	4	20	80
Exams	2	50	100
Total Points:			295

Final letter grades are assigned based on the percentage of total assessment points earned. To be fair to everyone I have to establish clear standards and apply them consistently, so please understand that being close to a cutoff is not the same this as making the cut (89.992 \neq 90.00, but 89.995 would be rounded up to 90.00). It would be unethical to make exceptions for some and not others.

Final Grade Cutoffs									
+	97.00%	+	87.00%	+	77.00%	+	67.00%		
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F	<60.0%
-	90.00%	-	80.00%	-	70.00%	-	60.00%		

Academic Integrity

The University's [Code of Academic Integrity](#) is designed to ensure that the principles of academic honesty and integrity are upheld. In accordance with this code, the University of Maryland does not tolerate academic dishonesty. Please ensure that you fully understand this code and its implications because all acts of academic dishonesty will be dealt with in accordance with the provisions of this code. All students are expected to adhere to this Code. It is your responsibility to read it and know what it says, so you can start your professional life on the right path. **As future professionals, your commitment to high ethical standards and honesty begins with your time at the University of Maryland.**

It is important to note that course assistance websites, such as CourseHero, are not permitted sources, unless the instructor explicitly gives permission for you to use one of these sites. Material taken or copied from these sites can be deemed unauthorized material and a violation of academic integrity. These sites offer information that might not be accurate and that shortcut the learning process, particularly the critical thinking steps necessary for college-level assignments.

Additionally, it is understandable that students may use a variety of online or virtual forums for course-wide discussion (e.g., GroupME or WeChat). Collaboration in this way regarding concepts discussed in this course is permissible. However, collaboration on graded assignments is strictly prohibited unless otherwise stated. Examples of prohibited collaboration include: asking classmates for answers on quizzes or exams, classmates completing homework assignments without your contributions, etc.

Finally, on each exam or assignment you must include the following pledge:

"I pledge on my honor that I have not given or received any unauthorized assistance on this exam/assignment."

To help you avoid unintentional violations, *the following table* lists levels of collaboration that are acceptable for each type of assignment. If you ever feel pressured to comply with someone else's academic integrity violation, please reach out to me straight away. Also, *if you are ever unclear* about acceptable levels of collaboration, *please ask!*

	 OPEN NOTES	 USE BOOK	 SEARCH ONLINE	 ASK FRIENDS	 WORK IN GROUPS
Homework Assignments	✓	✓	✓	✓	✓
Discussion Board Posting	✓	✓	✓	✓	✗
Quizzes	✓	✓	✓	✗	✗
Exams	✓	✓	✓	✗	✗

Course Outline

Week #	Topic	Read in Advance Quiz due at 4 pm Wednesday	Due at 11:59pm Friday
1	Getting started with descriptive statistics	Chapters 1, 4, and 5	Discussion Board 1
2	Introduction to R and RStudio	Chapters 2-3	Discussion Board 2
3	Understanding correlations, and what makes for valid, reliable data	Chapters 7-8	Discussion Board 3 & Homework 1
4	Writing hypotheses, and the basics of probability	Chapters 9-10	Discussion Board 4
5	Statistical significance, and z-tests	Chapters 11-12	Discussion Board 5 & Homework 2
6	One-sample t-tests	(not in book, videos)	Discussion Board 6
7	Exam 1 (Take home)		Exam 1
8	No class – Spring Break		
9	Independent samples t-tests	Chapter 13	Discussion Board 8
10	Dependent samples t-tests	Chapter 14	Discussion Board 9
11	Correlational tests	Chapter 17	Discussion Board 10 & Homework 3
12	Linear Regression	Chapter 18	Discussion Board 11
13	Chi-Squared analyses	Chapter 19	Discussion Board 12 & Homework 4
14	Wrap up, practice, and review	Optional: Chapter 20	Discussion Board 13
15	Exam 2 (Take home)		Exam 2

Note: This is a tentative schedule, and subject to change as necessary – monitor the course ELMS page for current deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.

Resources & Accommodations

Accessibility and Disability Services

The University of Maryland is committed to creating and maintaining a welcoming and inclusive educational, working, and living environment for people of all abilities. The University of Maryland is also committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the University, or be subjected to discrimination. The [Accessibility & Disability Service \(ADS\)](#) provides reasonable accommodations to qualified individuals to provide equal access to services, programs and activities. ADS cannot assist retroactively, so it is generally best to request accommodations several weeks before the semester begins or as soon as a disability becomes known. Any student who needs accommodations should contact me as soon as possible so that I have sufficient time to make arrangements.

For assistance in obtaining an accommodation, contact Accessibility and Disability Service at 301-314-7682, or email them at adsfrontdesk@umd.edu. Information about [sharing your accommodations with instructors](#), [note taking assistance](#) and more is available from the [Counseling Center](#).

Student Resources and Services

Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course, and I encourage you to visit [UMD's Student Academic Support Services website](#) to learn more about the wide range of campus resources available to you.

In particular, everyone can use some help sharpen their communication skills (and improving their grade) by visiting [UMD's Writing Center](#) and schedule an appointment with the campus Writing Center.

You should also know there are a wide range of resources to support you with whatever you might need ([UMD's Student Resources and Services website](#) may help). If you feel it would be helpful to have someone to talk to, visit [UMD's Counseling Center](#) or [one of the many other mental health resources on campus](#).

Basic Needs Security

If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live, please visit [UMD's Division of Student Affairs website](#) for information about resources the campus offers you and let me know if I can help in any way.

Netiquette Policy

Netiquette is the social code of online classes. Students share a responsibility for the course's learning environment. Creating a cohesive online learning community requires learners to support and assist each other. To craft an open and interactive online learning environment, communication has to be conducted in a professional and courteous manner at all times, guided by common sense, collegiality and basic rules of etiquette.

Course Evaluation

Please submit a course evaluation through CourseEvalUM in order to help faculty and administrators improve teaching and learning at Maryland. All information submitted to CourseEvalUM is confidential. Campus will notify you when CourseEvalUM is open for you to complete your evaluations for fall semester courses. Please go directly to the [Course Eval UM website](#) to complete your evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing through Testudo, the evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations.

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