

Introduction to Probability and Statistics I

MATH 501 – CRN 35972

Spring 2024

Instructor: Dr. Daniel Clark

Office: Zoom

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Course meeting times: Asynchronous online

Office hours: By appointment (Email me. I'm not hard to set something up with.)

Course Description

3 credit hours – Interpreting and analyzing univariate and bivariate data; probability and sampling distributions; simulation.

Prerequisite: Admission to the Master of Arts in Mathematics program or permission of the instructor. *Note: As you must have a content degree to be in the program, it is expected that you have some knowledge of statistics from your undergraduate work. You are expected to access this prerequisite knowledge frequently in this course. As such, please review introductory statistics material prior to starting the course (some of this knowledge can be found in the first five chapters of our text.)*

The purpose of this course, as it should be one of the first in your coursework toward the Master of Arts in Mathematics degree, is to further your knowledge of secondary statistics and probability content and prepare you to teach dual credit and/or community college courses. This course will deepen your understanding of the statistics and probability content needed to teach in both of these settings, and completion of this course is required for your M.A. in Mathematics. The course is an asynchronous online course using the Blackboard platform. You will access all of your homework assignments and quizzes on Blackboard. You will be expected to complete several types of activities in this course (exams, quizzes, homework assignments, and discussion board posts), and your learning will be assessed via exams, quizzes, and discussion boards (the homework assignments are optional). To find more information about the course and get a brief introduction to the course, please click the "Start Here" link on the Blackboard course site.

Required Course Materials

- "Stats: Data and Models" 4th edition by DeVeaux, Velleman, and Bock, ISBN 978-0-321-98649-8. You **do not need** MyStatLab with this. ONLY the textbook is required. Previous editions are fine, but we may need to verify that homework problems are the same.
- Scientific calculator or graphing calculator (preferably TI-83 or TI-84). If you like Microsoft Office, you can use Microsoft Excel as we will also learn how to perform some

basic statistical analysis in Excel. The text lists a variety of statistical software options. The instructor does not care which software you use and will not teach a specific software throughout the semester.

- Reliable internet/Blackboard access – A failure to access email or login to Blackboard is not an excuse to miss deadlines for homework/assignment submissions. You should refer to your WKU email and Blackboard site for announcements regarding class.

Learning Outcomes

After the completion of this course, students will be able to:

1. Choose the appropriate way to interpret and analyze univariate and bivariate data;
2. Use knowledge from probability sampling distributions to make educated decisions for statistical questions; and
3. Analyze and interpret results of analysis on data using both regression and chi-square approaches.

Course Requirements

- **Discussion Boards/Communication (expected):** Even though this is an asynchronous online course, your participation is expected and therefore required. Regularly, you will be expected to post comments and/or questions on an assigned Blackboard discussion board (DB). You should consider both the quantity and quality of your posts.
 - For an initial post, saying merely “I don’t know how to do #5,” will not meet the posting requirement. Saying “For #5, I tried to do <x>, but then <y> happened. Does anyone see what might be wrong here?” is much better. If you don’t have a question, just post a response to the posted prompt.
 - Similarly, a response of “I got the same answer” does not qualify as a post, but “I got the same answer, but I solved the problem differently by ...” would qualify. Responding to someone else in the thread you started does not count as a response. Even though there are separate deadlines, you may make your initial post and your reply on the same day by the initial post deadline if you wish.

I will be dutifully reading your posts and expect thoughtful posts and comments. I expect students to answer each other’s questions. For each DB that is required (these will be detailed in your assignments and the deadlines will be in the calendar), you will receive a checkmark for completing the discussion on time and as expected (discussed in the assignments and in the DB). If the student does not meet these expectations, they will not receive a checkmark. At the end of the semester, I will review students’ checkmarks and their final grade for the course will be lowered as follows (by percentage points):

- Missing 0 or 1 checkmark(s) – grade is not lowered
- Missing 2 checkmarks – semester grade lowered by 2%
- Missing 3 checkmarks – semester grade lowered by 4%
- Missing 4 checkmarks – semester grade lowered by 8%
- Missing 5 or more checkmarks – semester grade lowered by 16%

After the deadline for student response posts, I will answer any remaining unresolved questions.

There are many benefits to online discussion boards. Participation in online discussion boards can:

- Allow students to learn from one another and share ideas.
- Allow time for in-depth reflection. Students have more time to reflect, research, and compose their thoughts before participating in the discussion.
- Build class community by promoting discussion on course topics.
- Facilitate learning by allowing students to view and to respond to the work of others.
- Allow students to work together to create a product or to come to an agreement on some topic.
- Develop writing and critical thinking skills.
- Encourage student leadership by giving them a voice in the classroom.

Homework/Homework Quizzes (50%): Homework quizzes will be problems similar to the suggested homework problems for each chapter. All suggested homework will be listed in the specific Assignment folder on Blackboard. Quizzes will be on Blackboard and may include: fill in the blank, open essay (where you have to conduct a test on your calculator and type in your responses), multiple choice, etc. You will have a set amount of time to complete the quiz, and there will be one quiz per chapter assigned. You will only be allowed to access the quiz once; so make sure you have reliable internet access. If you are afraid of losing your answers, students in the past have recorded their answer separately (in a Word document or by hand) and filled in the responses at the end. This way, if your internet or computer crashes, you have a backup answer sheet that you can send directly to me. Quizzes will be open on Tuesday mornings and are due Sunday mornings by 6:00am. Since these will be based on your suggested homework, I highly encourage you to use the discussion boards for each assignment as a springboard for your questions, thoughts, solution strategies, etc. Any students suspected of cheating on the quizzes (or tests) will **immediately** receive an F in the course and will be turned in to the appropriate department at WKU. **This is non-negotiable.** One assignment (Assignment 3) will need to be submitted in Blackboard and will not have an associated quiz. Details regarding this submission will be given in the assignment description document for Assignment 3 (found on Blackboard).

PLEASE, if you have questions regarding your suggested homework, do the following things:

- Post in the appropriate discussion boards and check regularly for feedback.
 - Email any peers/friends you have in the class.
 - Email/text/call/Zoom me. I will **ALWAYS** make time to help you and do my best to help you in a way that is most accessible for you.
- **Exams (50% - 25% each):** You will be given two exams in this course: one midterm and one final exam. The midterm and final exams will be timed. More details on testing procedures will be shared as we approach the midterm exam. Each exam will be announced in advance, and you will be given a window of opportunity to complete each one. There will be no make-up tests and missing a test will result in a

zero. Only under the most extenuating circumstances will a make-up test be considered if the instructor is aware of an issue in advance.

- **Due Dates:** Due dates for all assignments and exams are posted in the calendar for the course located in the “Start Here” section of our Blackboard course.

Grading Scale:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

Contacting your Professor and Expected Response Times: Within the Course Calendar, you can see when I will respond to your discussion board posts. These replies will be made within Blackboard. If you need to contact me regarding other assignments or questions, please send me an email. During the work week, if I have not responded to your email within 24 hours, please re-send your email to verify that I received it. I will respond to all email correspondence within 24 hours during the work week. Responses to emails sent after 3:30pm on Friday afternoons may take up to 72 hours. I do not have an office phone, so feel free to call my mobile if you have a question that needs a more immediate response. Text is also appropriate (please identify yourself and the course so that I can know who I am texting).

Additional Notes

Academic Dishonesty: Students who commit any act of academic dishonesty will receive from the instructor a failing grade in the course without possibility of withdrawal. The instructor will also present the case to the Office of Student Conduct for disciplinary sanctions.

Regular and Substantive Interaction: The U.S. Department of Education requires that distance education courses must include regular and substantive interaction between students and faculty. For more information about [Regular and Substantive Interaction at WKU](#), please visit [the Regular and Substantive Interaction in Online and Distance Learning webpage](#).

In this course, regular and substantive interaction will take place in the following ways:

- Weekly announcements, and
- Timely and detailed feedback on assignments provided within one week of submission.

ADA Statement: In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, 1074. SARC can be reached by phone number at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

Title IX Misconduct/Assault: Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) and Discrimination and Harassment Policy (#0.2040) at

<https://wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf>
https://wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf.

Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121.

Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and **MUST** report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center at 270-745-3159.

Withdrawal Dates: The last day to withdraw from this course without paying a fee and without receiving a grade is Tuesday, January 23, 2024. The last day to withdraw from this course with a W, or change from credit to audit, is Thursday, March 28, 2024.

Information Technology (IT) Help Desk: You may have technical difficulties when uploading an assignment or taking a quiz, and you need to allow ample time to correct this. Call WKU IT Helpdesk at 270.745.7000 if you need assistance. There is also a link to “Information Technology Helpdesk” in the course site.

Disclaimer: The instructor reserves the right to change, alter, modify, or tweak anything in this document at any time for any reason.