Clarendon College
Course Syllabus

MATH 1342 – Statistical Methods
Fall 2025 Online

Instructor: Dr. Jeremy Sain
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Office Hours: I will check my email 3 to 4 times a day.

Required Text: MathXl account required (see below)
Optional Text: Elementary Statistics using Excel, 6th Edition, Triola 2017, ISBN 9780134506623

You **DO NOT** really need the physical textbook for this class, because you can access it on MathXL while working on homework, or by going to the "Study Plan."

Recommended Readings: These books don't really have to do with the class, but they are fun and give either some nice mathematics history or show you what mathematics is about from a bigger picture standpoint:

- Number: The Language of Science, Tobias Dantzig. Gives a very comprehensive history of number systems up to our own and beyond, as well as a history of 16th to 19th century mathematics.
- Mathematics From the Birth of Numbers, Jan Gullberg. A mathematics overview book. Is fun to flip through and look at all the pictures.
- Flatland, A Romance of Many Dimensions. Edwin Abbott. A whimsical book designed to help people imagine a world with more than three dimensions.
- The Language of Mathematics, Making the Invisible Visible, Keith Devlin. One of any number of "popular math" books, which are written to give the reader a sense of higher mathematics and its relationship to the world, without the rigorous diction of a regular mathematics text.
- Anything by Lewis Carroll. While most famous for his two books about Alice, Lewis Carroll's primary vocation a mathematician. He wrote many logic puzzle books that are quite challenging.
- Democracy, the God that Failed, Hans Herman Hoeppe. This is a political science book, but is an excellent example of deductive reasoning at its finest.

Supplies: Reliable internet access and a MathXL account. (See below) A copy of a spreadsheet program, preferably Excel or Google Sheets.

Purpose of the Course: Statistics partially satisfies the requirements for the Associates Degree at Clarendon College and is designed for transfer to a senior college.

Course Description: Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.

Prerequisites: Student must be TSI complete in Mathematics. It is strongly recommended that the student be TSI complete in Reading as well.

Core Objectives:

Critical Thinking Skills
- to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
Communication Skills
- to include effective development, interpretation and expression of ideas through written, oral and visual communication
Empirical and Quantitative Skills
- to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

Learning Outcomes:

Upon successful completion of this course, students will:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions. (Assesses COM with Quiz for Student Understanding of THECB Learning Outcome One)
2. Recognize, examine and interpret the basic principles of describing and presenting data. (Assesses COM with Quiz for Student Understanding of THECB Learning Outcome Two)
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics. (Assesses COM and EQS with Quiz for Student Understanding of THECB Learning Outcome Three)
4. Explain the role of probability in statistics. (Assesses COM with Quiz for Student Understanding of THECB Learning Outcome Four)
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables. (Assesses COM, CT, and EQS with Quiz for Student Understanding of THECB Learning Outcome Five)
6. Describe and compute confidence intervals. (Assesses COM, CT, and EQS with Quiz for Student Understanding of THECB Learning Outcome Six)
7. Solve linear regression and correlation problems. (Assesses EQS with Quiz for Student Understanding of THECB Learning Outcome Seven)
8. Perform hypothesis testing using statistical methods. (Assesses COM, EQS, CT with Quiz for Student Understanding of THECB Learning Outcome Eight)

Methods of Instruction:

1. Reading assignments.
2. Video lecture with discussion and examples.
3. Problem assignment.
4. Comment when appropriate on the history, importance, and application of specific concepts.

Grading Policies:

All assignments must be completed on MathXL at *www.mathxl.com*.

I will send you login information for MathXL when you send me a message in OpenLMS (aka Moodle).

Homework: 30%	Math takes practice, and the importance of homework cannot be exaggerated. I will drop the lowest homework assignment.
Quizzes: 5%	There will be quizzes over the learning outcomes outlined above.
Practice Tests: 5%	Practice Tests are available for each of the regular tests and the Final Exam. They are generated with the exact same parameters as the real test, and you can take them as many times as you wish. If you take each practice test at least once, you will get these 5 points on your overall grade.
Tests: 30%	There will be three tests. I will reverse replace test grades, so that a test can replace the immediately prior test if the grade is higher. For example, if a student scores higher on the second test than the first, I will replace the first test's grade with the second. Also, if a student scores higher on the final than on the third test, then I will replace the third test's grade with the grade of the final. **Long story short, if you do poorly on one test, working hard and doing better on the next test will allow you to drop the poor test grade.**
Final: 30%	The final is comprehensive.

For those of you who like formulas, the above says that your numerical grade will be computed using the formula

$$\begin{aligned}\text{Your grade} = {} & .3\,(\text{HW ave}) + 0.05\,(\text{Quiz Ave}) + \\ & .05\,(\text{Number of practice tests attempted at least once, +1 extra for Final Exam practice test})/5 + \\ & .3\,(\max\{T1, T2\} + \max\{T2, T3\} + \max\{T3, \text{Final}\})\,/\,3 + \\ & .3\,(\text{Final}).\end{aligned}$$

Grading Scale:		
	90-100	A
	80-89	B
	70-79	C
	60-69	D
	<60	F

All work is to be turned in on time. All assignments except the final exam are already open. If you know you will be busy around the due date of an assignment, then you can do the assignment early.

STUDENT ACADEMIC INTEGRITY AND CLASSROOM ETHICS

Clarendon College is committed to a philosophy of honesty and academic integrity. It is the responsibility of all members of the Clarendon College community to maintain academic integrity at Clarendon College by refusing to participate in or tolerate academic dishonesty. Any act of academic dishonesty will be regarded by the faculty and administration as a serious offense. Academic dishonesty violations include, but are not limited to:

1. obtaining an examination, classroom activity, or laboratory exercise by stealing or collusion;

2. discovering the content of an examination, classroom activity, laboratory exercise, or homework assignment before it is given;

3. observing the work of another during an examination or providing answers to another during the course of an examination;

4. using an unauthorized source of information during an examination, classroom activity, laboratory exercise, or homework assignment;

5. entering an office, classroom, laboratory, or building to obtain an unfair advantage;

6. taking an examination for another person;

7. completing a classroom activity, laboratory exercise, homework assignment, or research paper for another person;

8. altering grade records;

9. using any unauthorized form of an electronic communication device during an examination, classroom activity, or laboratory activity; and/or,

10. plagiarism. (Plagiarism is defined as the using, stating, offering, or reporting as one's own an idea, expression, or production of another person's work without proper credit. This includes, but is not limited to, turning in a paper purchased or acquired from any source, written by someone other than the student claiming credit, or stolen from another student.)

Students are responsible for reporting known acts of academic dishonesty to a faculty member, the program coordinator, the vice president, and/or dean. Any student with knowledge of a violation who fails to report it shall him/herself be in violation and shall be considered to have committed an act of academic dishonesty.

While academic integrity and honesty are the responsibility of the individual student, each individual faculty member, teaching assistant, and/or laboratory instructor is responsible for classroom management and for maintaining ethical behavior within the classroom and/or laboratory. Faculty who discover or suspect a violation should discuss the matter with the suspected violator(s) and attempt to resolve the case at that point. In cases of convincing evidence, the faculty member should take appropriate action. The faculty member and student should complete a Counseling Sheet regarding the violation. (The Counseling Sheet should contain at a minimum the date and time of the violation, the course, the instructor's name, the student's name, an explanation of the infraction or facts of the case, and the resolution to the incident.) This form should be signed by the student, faculty member, program coordi-

nator, and the Vice President of Academic Affairs. The Vice President of Academic Affairs will maintain a file on all violations. If a faculty member prefers to report the case directly to Vice President of Academic Affairs, it remains his/her prerogative to do so. Additionally, if the faculty member and the accused student cannot reach a resolution or if the faculty member believes that suspension from school is the only fair sanction, the case should immediately be reported, by the faculty member, in writing, to the Vice President of Academic Affairs. If the Vice President of Academic Affairs observes any trends in student behavior which involve more than one violation or act of academic dishonesty, the Vice President of Academic Affairs is responsible for notifying all faculty members involved, for contacting the student(s) involved, and after consultation with the faculty member(s) involved for taking the appropriate action. The Vice President of Academic Affairs is responsible for the timely notification (normally within two weeks) to all parties of an action taken.

Students wishing to appeal a disciplinary decision involving academic integrity or acts of academic dishonesty may do so through the Student Appeals and Grievance Procedure.

Classroom Policies:

1. **Online Attendance Policy**: Weekly attendance is mandatory in all online courses. Specific activities will be identified each week that must be completed in order for students to be considered "in attendance." Students are expected to log into their online course(s) at least twice a week. Progress towards satisfactory completion of weekly assignments is expected on a weekly basis. No progress could jeopardize good standing and financial aid.

   My Policy: For this course, I will submit an attendance report each *Wednesday morning*. I will mark as student "present" if they completed at least 30% of the HW assignment due for that week. Students can be placed on academic probation or lose financial aid for non-attendance or failure to work through the course assignments.

2. **Final Exams:** The schedule of final exams times is published at the beginning of the semester. You can find the schedule for final exams at: https://www.clarendoncollege.edu/insideCC. Do not make plans to leave school before your scheduled final exam. Faculty members cannot on their own authorize a student to take a final exam early. In exceptional circumstances if a student needs to take a final exam early, he/she may request early final exams by filling out the form at: https://www.clarendoncollege.edu/Resources/Admin/Request%20for%20Early%20Final%20Exams.pdf.

3. **Scholastic Honesty:** I adhere to a strict policy regarding academic honesty. Anyone who is dishonest in any way will receive a zero on that assignment or exam with no opportunity to make up the zero and may be dropped from the course with a grade of F. That student, if allowed to remain in the course, will not be allowed to receive any extra credit points from the time of the infraction through the remainder of the course. Furthermore, that student will not be allowed to drop their lowest quiz grade or exam grade. A second act of dishonesty will result in an F for the course. Students who commit an act of academic dishonesty will not be allowed to withdraw from the course with a "W." Note that dishonest behavior includes both the act of copying someone else's work as well as allowing someone to copy your work. Both students are equally guilty and will be equally punished.

4. **Course Withdrawal**--Students desiring to make schedule changes after their initial registration each semester must do so during the designated "Drop and Add" period as scheduled in the College Catalog. Students will be required to pay tuition and fees applicable to any class(es) added to their schedule.

   Official withdrawal from a course is initiated in the Office of the Registrar. However, each student should consult with his/her academic advisor or the Associate Dean of Enrolment before officially withdrawing from a course. A student who stops attending a class without officially dropping it may receive a grade of "F" for that class.

5. **Grievance/Appeals:** If you have a dispute concerning your grade or policies in this class, it is the student's responsibility to contact the instructor to discuss the matter. Should things remain unresolved, please follow the procedures described in the Clarendon College Student Handbook or College Policy Manual.

6. **Accommodation Statement** REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT:
   In accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, any student who feels that he or she may need any special assistance or accommodation because of an impairment or disabling condition should contact the Associate Dean of Enrollment Services at 806-874-4837 / janean.reish@clarendoncollege.edu or visit the Clarendon campus at Clarendon College. It is the policy of Clarendon College to provide reasonable accommodation as required to afford equal educational opportunity. It is the student's responsibility to contact the Associate Dean of Enrollment Services.

7. **Nondiscrimination Policy**
   Clarendon College, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status. It is the policy of Clarendon College not to discriminate based on gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation. Harassment of a student in class, i.e., a pattern of behavior directed against a particular student with the intent of humiliating or intimidating that student will not be tolerated. The mere expression of one's ideas is not harassment and is fully protected by academic freedom, but personal harassment of individual students is not permitted.

The full details of **Student Rights and Responsibilities** policies can be viewed on Clarendon College's website at: www.clarendoncollege.edu/Resources/Legal/24-25/FLA(LEGAL).pdf

Course Schedule:

All assignments are due at 11:59pm **Central Time**. Notice that the "due date" does not mean the day that you are supposed to submit an assignment. The "due date" is the last possible day to submit an assignment.

I encourage you to stay a few days ahead of the due dates. You never know when computers/internet will crash or when life situations will prevent you from being able to work on an assignment. If you

are a few days ahead of the due dates, you won't be stuck with the possibility of missing an assignment due to unforeseen issues.

August 28	Last day to Add/Drop
September 9	HW 1 due
September 10	Quiz HW 1 due
September 16	HW 2 due
September 17	Quiz HW 2 due
September 23	HW 3 due
September 24	Quiz HW 3 due
September 26	Exam 1 and Practice Exam due
September 30	HW 4 due
October 7	HW 5 due
October 8	Quiz HW 5 due
October 14	HW 6 due
October 15	Quiz HW 6 due
October 17	Exam 2 and Practice Exam due
October 28	HW 7 due
October 29	Quiz HW 7 due
November 4	HW 8 due
November 11	HW 9 due
November 12	Quiz HW 9 due
November 13	Last day to drop with a "W"
November 14	Exam 3 and Practice Exam due
December 2	HW 10 due
December 3	Quiz HW 10 due
December 3	Final Exam Available
December 9	Final Exam and Practice Exam due

Course Outline:

Unit 1:	Introduction to Statistics, Data Collection (Chapter 1 in textbook)
Unit 2:	Displaying and Summarizing Data (Chapters 2 and 3 in textbook)
Unit 3:	Probability (Chapter 4 in textbook)
Unit 4:	Discrete Probability Distributions (Chapter 5 in textbook)

Unit 5: Normal Probability Distributions
(Chapter 6 in textbook)

Unit 6: Confidence Intervals
(Chapter 7 in textbook)

Unit 7: Hypothesis Testing with a Single Sample
(Chapter 8 in textbook)

Unit 8: Hypothesis Testing with Two Samples
(Chapter 9 in textbook)

Unit 9: Goodness of Fit and ANOVA
(Chapters 11 and 12 in textbook)

Unit 10: Correlation and Regression
(Chapter 10 in textbook)