Clarendon College
Course Syllabus

MATH 1342 – Statistical Methods
Summer I 2019

Instructor: Dr. Jeremy Sain
Office: 201A e-mail: jeremy.sain@clarendoncollege.edu

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, 5th Edition, Triola 2014, ISBN 9780321851666

The physical textbook is not required for the course. The current section of the text can be viewed while working on the homework, and the full textbook can be accessed in the "Study Plan" section of MathXL.

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 was 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) It is strongly suggested that you get a copy of Microsoft Excel, OpenOffice (which is free), or a scientific calculator that can do statistical testing, such as the TI 84+.

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. Discussion of problems.

Grading Policies:

All assignments must be completed on MathXL at *www.mathxl.com*. All homework, quizzes, and exams are on MathXL. The MathXL course ID's for this class is:

XL3A-C1T8-0020-8BR2

Notice, this is the course ID. It is not what MathXL calls an "access code." I will send you an individual access code when you email me or send me a message on Moodle.

Daily work: 35% Math takes practice, and the importance of homework cannot be exaggerated. will drop the lowest homework assignment.

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

Your grade = .35 (HW ave) +
.05 (Number of Practice Tests taken, with 1 extra for final practice test) +
.3 (max{MT1, MT2} + max{MT2, MT3} + max{MT3, Final}) / 3 +
.3 (Final).

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 the homeworks are already open. If you know you will be busy around the due date of an assignment, then you can do the homework early. **Arrange with me beforehand to reschedule exams to be taken early.**

Academic Integrity

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 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 exercise; 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 associate Vice President, and/or Executive Vice President of Academics and Student Affairs. 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. Additionally, any student who reports him/herself in violation of this code before it is likely that another might consider this possibility will be understood as repentant and acting in good faith. Though the confession will not excuse the student for the violation, the confession will be considered and the violation should not result in suspension from school except in the most extreme cases.

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 coordinator, and the Executive Vice President of Academics and Student Affairs. The Executive Vice President of Academics and Student Affairs. will maintain a file on all violations. If a faculty member prefers to report the case directly to the Executive Vice President of Academics and Student 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 Executive Vice President of Academics and Student Affairs.. If the Executive Vice President of Academics and Student Affairs. observes any trends in student behavior which involve more than one violation or act of academic dishonesty, the Executive Vice President of Academics and Student 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 Executive Vice President of Academics and Student 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:** Students must take a final exam for each of their academic courses. The schedule of final exams times is published at the beginning of the semester. Do not make plans to leave school before your scheduled final exam. I will not give any early finals except in extreme emergencies after students have provided documentation of said emergency.

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. **Withdrawal:** If you decide that you are unable to complete this course or that it will be impossible to complete the course with a passing grade, you may drop the course and receive a "W" on your transcript instead. Withdrawal from a course is a formal procedure that you must initiate. If you do not go through the formal withdrawal procedure, you will receive a grade of "F" on your transcript. A student is permitted to drop a course if he/she obtains an official drop slip from the office and has the instructor sign the slip before the 12th class week. **Remember, a student is only allowed to drop the same class twice before he/she will be charged up to triple the tuition amount for taking the class a third time or more. Furthermore, beginning with the Fall 2007 semester, students in Texas may only drop a total of 6 courses throughout their entire undergraduate career. After the 6, he/she will no longer be able to withdraw from any classes.** If you think you need to drop this course, please talk with me about it first. It is possible that there is something you can do to still pass the course. Don't hurt your chances for a passing grade in the course by not attending labs or taking exams before we have discussed you situation. **The last day to withdraw from the course with a "W" is June 24th.**

American with Disabilities Act Statement: Clarendon College provides reasonable accommodations for persons with temporary or permanent disabilities. Should you require special accommodations, it is your responsibility to notify the Office of Student Services (806-874-3571). We will then work with you to make whatever accommodations we need to make.

Course Schedule:

All assignments are due at 11:59pm **Central Time**. 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.

June 5	Last day to Register and/or Add/drop
June 6	HW 1 due
June 9	HW 2 due
June 12	HW 3 due
June 13	Exam 1 due
June 16	HW 4 due
June 19	HW 5 due
June 22	HW 6 due
June 23	Exam 2 due
June 24	Last day to drop with a "W"
June 27	HW 7 due
June 30	HW 8 due
July 3	HW 9 due
July 4	Exam 3 due
July 6	Final Exam Opens
July 8	HW 10 due
July 9	Final 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)