Statistics MATH1342-04/06 jbailey18@lamar.edu

Class Meetings: 1342-04 Tuesday/Thursday 9:35am-10:55am Lucas 118
1342-06 Tuesday/Thursday 12:45pm-2:05pm Lucas 118.

Office Hours: I will be available at my office (**Lucas 111**) 10:00-11:00 on MWF and 11:00-12:00 on Tuesday/Thursday. You do not need an appointment to attend. If you cannot meet with me during these times, please speak with me or email me to make an appointment. Also feel free to email me with your questions, and I will try to respond in a timely fashion.

Textbook (optional): Beginning Statistics, Warren, Denley, Atchley. **All required course materials will be provided by the instructor**, but the book can act as an additional resource, especially for practice problems.

Prerequisites: 350 Math TSI or TSI Exempt/Complete

Catalog Description: Non-calculus based introduction to statistics, statistical measures of data, statistical description of data, elementary probability, random variables, binomial and normal distributions, estimation, testing hypotheses

Core Curriculum Outcomes: Upon completion of this course, the student will demonstrate his or her abilities to think critically, communicate quantitative information, and apply mathematical concepts:

(1) Critical Thinking: Develop a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.
(2) Communication Skills: Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.
(3) Empirical and Quantitative: Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.

MATH1342 Learning Outcomes: When you have successfully completed this course, you will

(1) Explain the use of data collection and statistics as tools to reach reasonable conclusions;
(2) Recognize, examine and interpret the basic principles of describing and presenting data;
(3) Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics;
(4) Explain the role of probability in statistics;
(5) Examine, analyze and compare various sampling distributions for both discrete and continuous random variables;
(6) Describe and compute confidence intervals;
(7) Solve linear regression and correlation problems;
(8) Perform hypothesis testing using statistical methods;
(9) Demonstrate skills necessary for analyzing and summarizing data;
(10) Define probability and probability distributions, particularly the normal distribution;
(11) Distinguish between descriptive and inferential statistics and apply the concept of hypothesis testing;
(12) Define statistics, discuss data types, contrast qualitative and quantitative data, and examine common applications of data analytical methods using real-world examples and data;
(13) Develop procedures for listing and grouping quantitative data, both in tabular and graphical format;
(14) Introduce the concept of probability and probability distributions, including the binomial and normal distributions;
(15) Illustrate the concept of random samples and sampling distributions (of the mean) as a transition from descriptive to inferential statistics;
(16) Distinguish between a sample and a population;
(17) Calculate point and (confidence) interval estimates for a population mean using a large sample;
(18) Present methods for hypothesis testing of a population mean using a large sample;
(19) Present methods for hypothesis testing of differences between two population means;
(20) Present methods for analyzing data from normal populations;
(21) Describe (via calculation and graphs) statistical relationships between two variables.

Course Overview: In this course, I will introduce various topics of study, and we will discuss them. Then, you will explore them and practice working with them in more depth in assignments outside of class. A significant portion of our class time will be devoted to student presentations of this practice, so that we may learn from and better understand your thinking, collectively moving toward more effective methods of solving problems.

Student presentations are an important part of our learning process in mathematics, and dedicated preparation in your assignments is essential to your success. Each week, students will give presentations based on the assignments. **Everybody must present** some of their work during the semester; **otherwise, you forfeit that portion of your grade**.

You will have **60-minute exams in class** over the course of the semester and a comprehensive **final exam Tuesday, December 12, 8:00am-10:30am for section 04 and Tuesday, December 12, 11:00am-1:30pm for section 06**. Since the final is comprehensive, it will also be used to replace your lowest in-class exam grade (if you have not missed any). You will not be penalized if your score on the final is lower than each of your in-class exams; the final only counts twice if this is to your benefit.

Grading Policy: Students with an average of 90% or greater will be awarded an A, 80% for a B, 70% for a C, 60% for a D, and an F for those with averages less than 60%. All assignments are due at the time class is designated to begin on the due date. No points will be earned for late work, but **all assignments must be completed in order to pass**. Grades will be calculated in the following manner.

- Assignments/Quizzes/Presentations/Attendance/Other (20%)
- In-class exams (60% distributed equally)
- Final Exam (20%)

Attendance: All students are expected to attend each class meeting. If you must miss a class for any reason, you are responsible for any material discussed during that session. **No make-up exams** will be given unless there are extraordinary circumstances, as the final gives students the opportunity to be tested on the material and replace a missed exam. If, for some reason, you miss multiple exams, a make-up will only be given in the event that each absence is determined to be excusable. It is essential that you notify me in advance if you must miss an exam, *especially* if you have already missed one previously. Failure to do so will result in a score of 0 for the exam.

Other: You do not need to ask permission to leave class for personal reasons, just do your best to avoid causing any disruption on your way out. **No computers, cell phones, or calculators are permitted** unless otherwise indicated; furthermore, use during quizzes or exams constitutes academic dishonesty unless otherwise specified. If there is an exam being administered, no student may begin testing after another student has turned in the exam, and you must turn in your exam before leaving or you will receive a score of 0.

Changes: While I have made sincere efforts to ensure that this syllabus is correct, changes may be required. Any substantive changes will be announced during a regularly scheduled class. If you find an error or omission, please advise me at once so that the other members of the class may be notified.

Important Information for Students

Lamar University expressly prohibits intimidation and harassment of students, faculty, staff, or applicants. http://dept.lamar.edu/studentaffairs/handbook.htm

Drop Policy: Please make note of the three dates indicated in this drop policy. Any drop will be your responsibility; I will not drop a student from the course.

September 13, 2017: (Census Date-Six Drop Rule does not apply) A student may drop or withdraw without consulting with the instructor. The Six Drop Rule does not apply to a drop before 5:00 PM.

September 29, 2017: (Six Drop Rule applies) A student may drop or withdraw from the course without academic penalty and receive a Q, however, the Six Drop Rule applies. The student will consult with the instructor and the Records Office to initiate a drop.

November 3, 2017: (Six Drop Rule applies) Last day to drop or withdraw with academic penalty; the student must be passing the course at the time of the requested drop in order to receive a Q. The drop form, including all required signatures, must arrive in the Records Office by no later than 4:00 PM. No drop is allowed after this date except in extreme extenuating circumstances. Any "late drop" must be approved by the instructor, department chair, college dean, and provost.

Academic Integrity: Students are expected to maintain complete honesty and integrity in their academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. Students are specifically warned against all forms of cheating and plagiarism. The Lamar University Student Handbook clearly reads: Any student found guilty of academic dishonesty in any phase of academic work will be subjected to disciplinary action. Punishable offenses include, but are not limited to, cheating on an examination or academic work which is to be submitted, plagiarism, collusion, and the abuse of source materials. One aspect of the Handbooks definition of cheating includes purchasing or otherwise acquiring and submitting as ones own work any research paper or other writing assignment prepared by an individual or firm. Plagiarism is defined as the appropriation and the unacknowledged incorporation of anothers work or ideas into ones own and submitted for credit. Faculty members in the College of arts and Sciences investigate all cases of suspected plagiarism. Any student who is found cheating in this course will receive a course grade of F. http://students.lamar.edu/student-handbook.html

Accommodations through the Disability Resource Center: Lamar University is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is located in the Communications building room 105. Office staff collaborate with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact the DRC at 409-880-8347 or drc@lamar.edu to arrange a confidential appointment with the Director of the DRC to explore possible options regarding equitable access and reasonable accommodations. If you are registered with DRC and have a current letter requesting reasonable accommodations, we encourage you to contact your instructor early in the semester to review how the accommodations will be applied in the course. http://www.lamar.edu/disability-resource-center/

Campus Closure: In the event of an announced campus closure in excess of four days due to a hurricane or other disaster, students are expected to login to Lamar University's website's homepage

for instructions about continuing courses remotely. http://lamar.edu

Emergency Procedures: Many types of emergencies can occur on campus; instructions for severe weather or violence/active shooter, fire, or chemical release can be found at: http://www.lamar.edu/about-lu/administration/risk-management/index.html

Following are procedures for the first two:

- Severe Weather:
  - Follow the directions of the instructor or emergency personnel.
  - Seek shelter in an interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside.
  - If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building.
  - Stay in the center of the room, away from exterior walls, windows, and doors.

- Violence/Active Shooter:
  - CALL - 8-3-1-1 from a campus phone (880-8311 from a cell phone). Note: Calling 9-1-1 from either a campus phone or cell phone will contact Beaumont City Police Dispatch rather than University Police.
  - AVOID- If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
  - DENY- Barricade the door with desks, chairs, bookcases or any other items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
  - DEFEND- Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.

Course Evaluations: You will have an opportunity to evaluate all aspects of this course in a formal process to be completed online near the end of the term. You will receive an email reminder through your LU account.