Course Schedule

The following is a tentative outline of the material to be covered. I have included the designated test date for each topic. All designated tests are scheduled for Fridays at 1:00 PM. *I reserve the right to change the material and/or sequence.*

Topics by week:

1) Introduction, Basic Terms and Definitions
2) Graph Types Q1 (Basic Concepts) – 9.3
3) Descriptive Statistics
4) Descriptive Statistics Q2 (Descriptive Statistics) – 9.17
5) Probability Q3 (Probability) – 9.24
6) Random Variables Q4 (Random Variables) – 10.1
7) Normal Distributions Q5 (Normal Distributions) – 9.8
8) Mean Confidence Intervals Q6 (Confidence Intervals) – 10.15
9) Population Proportions Q7 (Proportions) – 10.22
10) Hypothesis Testing
11) Hypothesis Testing Q8 (Hypothesis Testing) – 11.5
12) Chi-Square Test for Independence Q9 (Chi-Square) – 11.12
13) Regression Q10 (Regression) – 11.19
14) Review
15) Review
16) Final Exam
Course Information

Evaluation and Grades
This is a Standards Based Course; you will need to demonstrate mastery of ten different standards in order to be successful. For each standard there will be a quiz. The rules regarding standards quizzes are listed below:

1. If you pass (70 or better) a quiz on the designated quiz day, you will receive a 90.
2. If you pass a quiz on any other day you will receive a 70.
3. If you never pass a particular standard quiz, you will receive a 0 for that standard.
4. You may only take one quiz in a single day.
5. You may only take a designated quiz on a designated quiz day. For example, you may not take Q3 on the day designated for Q6.
6. You must take a particular quiz within a week of your last attempt for that quiz. For example, if you fail Q3, you must retake Q3 within a week.
7. You may retake quizzes 1 through 9 up until Monday, November 22nd. You may retake Q10 up until Friday, December 3rd.

So you will have ten standards grades. Those grades will be averaged. Notice that average will range from 0 to 90 points. The additional 10% of your grade will be your homework average. I will likely throw out your three lowest homework grades before computing that average.

The final exam will affect your grade in the following way: if you score less than 60% on the final, your quiz average will be reduced by a letter grade. If you score a 90% or above on the final, your grade will improve by a letter grade.

Grading System
Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:
A = 90-100 points
B = 80-89 points
C = 70-79 points
D = 60-69 points
F = 0-59 points
Textbook: *Introductory Statistics*, published by Rice University. This book is available free from the following website: https://openstax.org/details/books/introductory-statistics

Additionally, a link will be provided on my Blackboard page.

1. **Sampling and Data.** Classifying statistical studies; sampling procedures.
2. **Descriptive Statistics.** Descriptive Measures, Grouping data; graphs and charts; distribution shapes; misleading graphs.
3. **Probability Topics.** Independence, Mutual Exclusion, Addition and Multiplication Rules
4. **Discrete Random Variables.** Probability Mass Functions, Expectation, Standard Deviation
5. **Continuous Random Variables.** (omitted)
6. **The Normal Distribution.** Areas under the standard normal curve; normally distributed variables.
7. **The Central Limit Theorem.** Application to Inferential Statistics.
8. **Confidence Intervals.** One Population Mean, One Population Proportion
9. **Hypothesis Testing with One Sample.** Introduction to P-Values, One Mean Test, One Proportion Test
10. **Hypothesis Testing with Two Samples.** (omitted)
11. **The Chi-Square Distribution.** The Chi-Square Independence test.
12. **Linear Regression and Correlation.** Linear Equations, The Regression Equation, Correlation Coefficient

**Student Learning Outcomes**

1. **Students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in statistics including definitions of measures of central tendency; standard deviation; standardized variable; regression line; coefficient of determination; normally distributed variable; sampling distribution of the mean; sampling distribution of the proportion; point estimate; confidence interval estimate; null hypothesis; alternative hypothesis; critical value; and test statistic.

2. **The students will describe the fundamental principles including the laws and theorems arising from concepts covered in this course.** Students will identify and apply the laws and formulas that result directly from the definitions; for example, calculation of measures of central tendency; standard deviations; coefficients of determination; critical values and test statistics.

3. **The students will apply course material along with procedures and techniques covered in this course to solve problems.** Students will use the facts, formulas,
and techniques learned in this course to find regression equations for data collected; use regression equations to make predictions; calculate probabilities; find confidence intervals for means and proportions; and perform a variety of hypothesis tests.

4. The students will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields. Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring statistics as a prerequisite, or for work in occupational fields requiring a background in statistics. These fields might include education, business, finance, marketing, computer science, physical sciences, and nursing, as well as further study in other statistics courses.

**Course Delivery**

**Face to Face**
You will be expected to attend class in person. You are responsible for any missed classes which means that you will need to make arrangements with another student or myself to acquire any missed content. All standards quizzes will be administered in person. All homework will be submitted through Blackboard.

**Technology Requirements**
Access to exams, quizzes, and homework will be through Blackboard. You will need to scan or photograph any written assignments and submit them through Blackboard. So you will necessarily need a computer, iPad or phone with the above capability. A printer would undoubtedly make your life easier, but it is not required. Additionally, you will need a calculator to use in class and during quizzes. The TI-30X IIS is highly recommended.

**Modifications to the Syllabus**
This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.
General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook
- Angelo State University Catalog

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject to disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university’s Statement of Academic Integrity.

Accommodations for Students with Disabilities

ASU is 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 by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112
Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: Incident Reporting Form
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).
For more information about resources related to sexual misconduct, Title IX, or Angelo State’s policy please visit the Title IX website.  

Information About COVID-19
Please refer to ASU’s COVID-19 (Coronavirus) Updates web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Modifications to the Syllabus
This syllabus, including grade evaluation and course schedule, is subject to modification on potentially short notice based on developing circumstances.

1 https://www.angelo.edu/current-students/student-handbook/
2 https://www.angelo.edu/academics/catalog/
3 https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96
4 https://www.angelo.edu/current-students/disability-services/
5 https://www.angelo.edu/content/files/14197-op-1011-grading-procedures
6 https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of
7 https://www.angelo.edu/incident-form
8 https://www.angelo.edu/title-ix
9 https://www.angelo.edu/covid-19/