Elementary Statistics
Spring 2019

Course no. 1342.020
Instructor Trey Smith
Time MWF 11:00
Location MCS 110
Office MCS 219A
Office Hours MTWRF : 10:00-11:00, 2:00-3:00 Others by Appointment
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Grading The grade for this course will be determined using three tests and a final exam. The test dates are given in the schedule below. Each test is worth 1/3 of the grade subject to the outcome of the final exam. The grades for each of the three tests will be supplemented by bonus points obtained from homework during the respective test periods.

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.

Homework All homework will be done utilizing the Pearson MyLab system. You can sign up by clicking the Pearson MyLab button in Blackboard. A student registration guide may be obtained by clicking on the Registration Guide button under Resources in Blackboard.

Attendance Regular class attendance is expected. That said, there is no penalty for missing a class.

Calculators Calculators will be allowed for the tests.

Course Outline The following is a tentative outline of the material to be covered. I reserve the right to change the material and/or sequence.

Topics by Week

1) The Nature of Statistics, Various Sampling Methods
2) Organizing Data, Descriptive Statistics
3) More Descriptive Statistics
4) Linear Regression, Introduction to Probability
5) Probability, Test 1 (2.15)
6) Introduction to Random Variables
7) More Random Variables
8) The Normal Distribution
9) Sampling Distribution of the Mean, Test 2 (3.22)
10) One Population Mean Confidence Intervals
11) One Population Mean Hypothesis Testing
12) One Population Proportion Confidence Intervals
13) One Population Proportion Hypothesis Testing
14) Chi-Square Goodness of Fit, Test 3 (4.26)
15) Review
16) Final Exam (May 8th: 10:30-12:30)

General University Policies

Student Disability Services
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. The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
dallas.swafford@angelo.edu

Title IX
Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

Michelle Boone  
Director of Title IX Compliance  
325-486-6357  
michelle.boone@angelo.edu

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. (http://www.angelo.edu/opmanual/ -- OP 10.19)

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 Conduct Policies

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 of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the Statement of Academic Integrity

Plagiarism
Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft. In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy
Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

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

Mathematics 1342 – Elementary Statistics

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 Content

Textbook: Elementary Statistics, Ninth Edition, by Neil A. Weiss. The following chapters including the particular sections listed are covered. (See textbook “Contents”)

1. The Nature of Statistics. Classifying statistical studies; sampling procedures.
2. Organizing Data. Grouping data; graphs and charts; distribution shapes; misleading graphs.
3. Descriptive Measures. Mean; median; mode; standard deviation; quartiles; percentiles; deciles; boxplots.
4. Descriptive Methods in Regression and Correlation. Regression equation; coefficient of determination; linear correlation.
6. The Normal Distribution. Areas under the standard normal curve; normally distributed variables.
7. The Sampling Distribution of the Mean. Sampling error; mean and standard deviation of the sampling distribution of the mean.
8. Confidence Intervals for One Population Mean. Calculate confidence intervals for the mean; margin of error; sample size.
9. Hypothesis Tests for One Population Mean. Set up hypothesis tests; errors; perform hypothesis tests.
10. Inferences for Population Proportions. Calculating confidence intervals for one population proportion; performing hypothesis tests for one population proportion.
11. Chi-Square Procedures. The Chi-Square goodness of fit test.