Elementary Statistics
Summer 2, 2019

Course no. 1342.010
Instructor Trey Smith
Time MTWRF 10:00-11:45
Location MCS 216
Office MCS 219A
Office Hours MTWRF : 2:00-3:00
                      Others by Appointment
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Grading The Grade for this course will be determined by using two exams worth
             35% each, and a homework/quiz grade worth 30%.
Homework Homework will be assigned daily. The following day the homework will
            be taken up OR a quiz covering the homework will be given in class.
Attendance Regular class attendance is expected. There will be no makeup given for a
               missed quiz.
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 Day
1) The Nature of Statistics, Various Sampling Methods
2) Organizing Data, Descriptive Statistics
3) More Descriptive Statistics
4) Even more Descriptive Statistics
5) Linear Regression
6) Introduction to Probability
7) More Probability
8) An Introduction to Random Variables
9) More Random Variables
10) An Introduction to the Standard Normal Distribution
11) Review for Test 1
12) Test 1 (July 23rd)
13) Other Normal Disrtributions
14) Sampling Distribution of the Mean
15) One Population Mean Confidence Intervals
16) One Population Proportion Confidence Intervals
17) Introduction to Hypothesis Testing
18) One Population Mean Hypothesis Testing
19) One Population Proportion Hypothesis Testing
20) Chi-Square Goodness of Fit
21) Chi-Square Independence
22) Review for the Final Exam
23) Final Exam (August 7th)

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.
5. **Probability and Random Variables.** Rules of probability; discrete random variables; probability distributions.
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.