

# Math 3321

## Statistics

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### Instructor: Mario Barrientos

Email: [mario.barrientos@angelo.edu](mailto:mario.barrientos@angelo.edu)

Phone: 325 486 5427

Office: MCS 209

**Office Hours:** MWF 10-11 AM, also 12 noon to 1PM, T-Tr 9-11AM,  
or by appointment.

## Course Information

### Textbook

*Introductory Statistics, Illowsky and Dean (OpenStax)*

### Assignments

You will be assigned daily homework assignments which are generally due the next class day. I will not accept late assignments; however, I will drop two of your lowest homework grades.

All homework is done online through MyOpenMath, Course ID is 130362 ,Enrollment Key is ST 3321.

If you miss a test (an official excused absence) I will replace the missing test grade with the final exam grade. I will only do this for one exam. Any other missing exams will be given a zero grade. All exams are in class exams with no notes. Exam dates are: Feb 8, Mar 8, Apr 12, and the final on May 10. The final exam is mandatory.

### Class rules

This class is a face to face class, supplementary material will be posted in BlackBoard.

I keep a record of student attendance but your grade is not directly affected by absences, lateness, etc. Also, no cell phone use or eating is allowed in class.

# Grading

## Evaluation and Grades

Course grades will be determined as indicated in the table below.

Assessment	Percent of Total Grade
homework	40
EXAMS	60
Total	100

## 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 = 90.00-100 points

B = 80.00-89.99 points

C = 70.00-79.99 points

D = 60.00-69.99 points

F = 0-59.99 points

(Grades are not rounded up)

## 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](#)<sup>1</sup>
- [Angelo State University Catalog](#)<sup>2</sup>

## 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 university's [Statement of Academic Integrity](#).<sup>3</sup>

## **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](mailto:ADA@angelo.edu). For more information about the application process and requirements, visit the [Student Disability Services website](#).<sup>4</sup> The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
[dallas.swafford@angelo.edu](mailto: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](#)<sup>5</sup> 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](#)<sup>6</sup> 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](#)<sup>7</sup>

Face to Face: Mayer Administration Building, Room 210

Phone: 325-942-2022

Email: [michelle.miller@angelo.edu](mailto: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](#).<sup>8</sup>

## **Information About COVID-19**

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#)<sup>9</sup> web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

## **Course Schedule**

All items contained in this syllabus are subject to change as the semester progresses. Students will be notified in advance of any changes. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.

## 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. 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. Additionally, students will apply theorems such as the Central Limit Theorem.
- 3. 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. Students will use available statistical software packages to solve problems.** Students will use appropriate packages to solve problems in both descriptive and inferential statistics. Additionally, the students will use software to represent data visually.
- 5. 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.

# Schedule

## Course Day

- 1 Introduction
- 2 Statistics Basics, Sampling
- 3 Variables and Data
- 4 Data, Qualitative Data
- 5 Quantitative Data
- 6 Distribution Shapes
- 7 Measures of Center
- 8 Measures of Variation
- 9 Five-Number Summary
- 10 Populations and Samples
- 11 Probability Basics, Events
- 12 Test 1
- 13 Rules of Probability
- 14 Discrete Random Variables
- 15 Discrete Random Variables
- 16 Normal Distribution
- 17 Standard Normal Curve
- 18 Normally Distributed Variables
- 19 Assessing Normality
- 20 Sampling Error, Distributions
- 21 Sample Mean
- 22 Sample Mean
- 23 Estimating a Population Mean
- 24 Test 2
- 25 Confidence Intervals
- 26 Margin of Error
- 27 Confidence Intervals
- 28 Confidence Intervals
- 29 Hypothesis Tests
- 30 Hypothesis Tests
- 31 Hypothesis Tests
- 32 Hypothesis Tests
- 33 Hypothesis Tests
- 34 Hypothesis Tests
- 35 Hypothesis Tests

36	Test 3
37	Chi-Square
38	Chi-Square Goodness-of-Fit
39	Linear Equations
40	The Regression Equation
41	Linear Correlation , Inferences
42	Analysis of Variance
43	test

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<sup>1</sup> <https://www.angelo.edu/student-handbook/>

<sup>2</sup> <https://www.angelo.edu/catalogs/>

<sup>3</sup> <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>

<sup>4</sup> <https://www.angelo.edu/services/disability-services/>

<sup>5</sup> <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

<sup>6</sup> <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

<sup>7</sup> <https://www.angelo.edu/incident-form>

<sup>8</sup> <https://www.angelo.edu/title-ix>

<sup>9</sup> <https://www.angelo.edu/covid-19/>