

Math 1342.L91 – Elementary Statistics SPRING 2019

Instructional Syllabus

I. BASIC COURSE INFORMATION

- A. **Course Description** – Elementary Statistics – Math 1342: Three semester hours credit. Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.
- B. **Intended Audience**
Mathematics, science, business and certain liberal arts and fine arts majors.
- C. **Instructor: Avrila Klaus**
Office: Livingston Teaching Center workroom
Telephone: (903) 841-8694 -- please text or email if no answer
Email: aklaus@angelina.edu
Office Hours: by arrangement

II. INTENDED STUDENT OUTCOMES

- A. Core Objectives Required for this Course
1. **Critical Thinking:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
 2. **Communication:** to include effective development, interpretation and expression of ideas through written, oral, and visual communication.
 3. **Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
- B. Course Learning Outcomes for all Sections
Upon successful completion of this course, students 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.

III. ASSESSMENT MEASURES

- A. Assessments for the Core Objectives:
1. **Critical Thinking:** Students will answer multiple-choice questions in an assignment which will be used to assess critical thinking skills.
 2. **Communication:** Students will answer multiple-choice questions in an assignment which will assess written, oral, and visual communication skills.
 3. **Empirical and Quantitative Skills:** Students will answer multiple-choice questions in an assignment which will assess their skills in manipulation and analysis of numerical data to inform conclusions.

- B. Assessments for Course Learning Outcomes
1. The students' ability to explain the use of data collection and statistics as tools to reach reasonable conclusions will be assessed through embedded test questions.
 2. The students' ability to recognize, examine and interpret the basic principles of describing and presenting data will be assessed through homework and/or embedded test questions.
 3. The students' ability to compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics will be assessed through homework and/or embedded test questions.
 4. The students' ability to explain the role of probability in statistics will be assessed through homework and/or embedded test questions.
 5. The students' ability to examine, analyze and compare various sampling distributions for both discrete and continuous random variables will be assessed through homework and/or embedded test questions.
 6. The students' ability to describe and compute confidence intervals will be assessed through an assigned project.
 7. The students' ability to solve linear regression and correlation problems will be assessed through homework and/or embedded final exam questions.
 8. The students' ability to perform hypothesis testing using statistical methods will be assessed through homework and/or embedded test questions.

IV. INSTRUCTIONAL PROCEDURES

This course will be taught using a combination of lectures, discussions, and practice exercises. The amount of time spent using any one technique will vary from class to class and from lesson to lesson as determined to be most appropriate by the instructor. The graphing calculator and computer will be utilized as appropriate in classroom demonstrations.

V. COURSE REQUIREMENTS AND POLICIES

A. **Required Textbooks, Materials and Equipment**

1. Text(s) and supplementary materials:
Elementary Statistics Picturing the World by Larson and Farber (Pearson), 7th edition (hardcopy or e-book). Access to www.angelina.mylabsplus.com is required. The access code is included with a new book purchased at the AC bookstore; or the access code may also be purchased separately at the bookstore or on the MyLabsPlus website noted above. An electronic copy of the text is provided as part of the MyLabsPlus access.
2. Specific equipment required of all students
A TI-83 or TI-84 graphing calculator or TI 30XS calculator is required and will be used by the instructor in classroom demonstrations.

B. **Assignments**

1. Specific assignments required for all students (term papers, homework, speeches, participation in community activities, etc.) See the attached Course Content and Topics page.
2. Appropriate due dates, schedules, deadlines, etc. are determined by the instructor. See the Course Content and Topics [page of this document](#).

C. **Course Policies:** This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.

1. **Educational Accommodations:** If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you may fill out the Educational Accommodations application within your AC Portal, under the "Student Services" tab. A Student Success team member will contact you once the application is received. At a post-secondary institution, you must self-identify as a person with a disability in order to receive services; for questions regarding the application process you can visit the

Office of Student Success and Inclusion in the Student Center (Room 200) or email access@angelina.edu. To report any complaints related to accommodations, you should contact Annie Allen, Director of Student Success & Inclusion, in Room 200 of the Student Center. You may also contact Ms. Allen by calling (936) 633-4509 or by emailing aallen@angelina.edu. To report discrimination of any type, contact Steve Hudman, Dean of Student Affairs, at (936) 633-5292 or shudman@angelina.edu.

2. **Attendance:** Attendance is required as per Angelina College Policy and will be recorded every day. Any student with three (3) consecutive absences or four (4) cumulative absences may be dropped from the class. Records will be turned in to the Registrar's Office at the end of the semester. Do not assume that non-attendance in class will always result in an instructor drop. You must officially drop a class or risk receiving an F. This is official Angelina College Policy.

VI. COURSE OUTLINE:

See the attached Course Outline and Topics and Math 1342 Assignments.

VII. EVALUATION AND GRADING

A. Grading Criteria

1. Your grade will be assessed by:
 - a. Four tests valued at 100 points each for a total of 400 points. (64.5 %)
 - b. MML+ Homework valued at 100 points. (16.1 %)
 - c. Out-of-class assignment valued at 20 points. (3.3 %)
 - d. A comprehensive final examination valued at 100 points. (16.1 %)
2. A student who drops a course on or before the 12th class day during the fall (n/a) or spring semester (January 12, 2019) or on or before the 4th class day during a summer session (n/a) will not receive a grade and the course will not appear on the permanent record. Those dropping between January 13, 2018 and April 1, 2019 (inclusive) will receive a W in the course. November 5, 2018 is the last day for dropping a course. Dropping is your responsibility.
3. Bonus points: I never *give* extra credit, but I do allow students to *earn* it for work above and beyond the requirements of the class.
4. No make-up test are authorized. The final exam grade will be used a second time to replace any one missed test or the lowest test grade during the semester.

B. Determination of Grade (*assignment of letter grades*)

Grades will be assigned according to the scale below.

Percent of the maximum of 620 points.

90% - 100% = A

80% - 89% = B

70% - 79% = C

60% - 69% = D

Below 60% = F

The instructor reserves the right to adjust grades upward from this scale.

VIII. NOTE:

The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.

Lesson	Dates	Sections	Description
1	01/15	1.1 1.2 1.3	An Overview of Statistics Data Classification Data Collection and Experimental Design
2	01/17	2.1	Frequency Distributions and Their Graphs
3	01/22	2.2 2.3	More Graphs and Displays Measuring Central Tendency
4	01/24	2.4 2.5	Measures of Variation Measures of Position
5	01/29		Review
6	01/31		Test 1
7	02/05	3.1	Basic Concepts of Probability and Counting
8	02/07	3.2 3.3	Conditional Probability and the Multiplication Rule The Addition Rule
9	02/12	3.4 4.1	Additional Topics in Probability and Counting Probability Distributions
10	02/14	4.2	Binomial Distributions
11	02/19		Review
12	02/21		Test 2
13	02/26	5.1	Introduction to Normal Distributions & the Standard Normal Distribution
14	02/28	5.2 5.3	Normal Distributions: Finding Probabilities Normal Distributions: Finding Values
15	03/05	5.4 5.5	Sampling Distributions and the Central Limit Theorem Normal Approximations to Binomial Distributions
16	03/07	6.1	Confidence Intervals for the Mean (Large Samples)
17	03/19	6.2 6.3	Confidence Intervals for the Mean (Small Samples) Confidence Intervals for Population Proportions
18	03/21		Review & Distribute project.
19	03/26		Test 3
20	03/28	7.1	Introduction to Hypothesis Testing & Collect project
21	04/02	7.2 7.3	Hypothesis Testing for the Mean (Large Samples) Hypothesis Testing for the Mean (Small samples)
22	04/04	7.4 8.1	Hypothesis Testing for Proportions Testing the Difference Between Means (Large Independent Samples)
23	04/09	8.2 8.3	Testing the Difference Between Means (Small Independent Samples) Testing the Difference Between Means (Dependent Samples)
24	04/11	8.4	Testing the Difference Between Proportions
25	04/16		Review

26	04/18		Test 4
27	04/23	9.1	Correlation
28	04/25	9.2	Linear Regression
29	04/30	9.3	Measures of Regression
30	05/02		Wrap up and Review
31		FINAL EXAM	Comprehensive Final Exam- a 50 question scantron is required.