Course Information Form (CIF)

Course Code: MAT 108 (IAI M1 902)

Course Title: Introduction to Applied Statistics

Department: Mathematics
PCS Code: 1.1 - Baccalaureate/Transfer
CIP Code: 27.0501
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Basic statistical principles, graphic presentation, descriptive measures of central tendency, dispersion and location, inferential statistics and hypothesis testing, analysis and inference of linear correlation coefficient, and slope of regression line. Credit not given for both MAT 108 and MAT 160.

General Course Objectives

Students will learn the basic statistical tools for analyzing data and drawing inferences from that analysis. The students will also develop skills in problem solving, quantitative reasoning, and the use of technology.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Credit in MAT 072 with a grade of C or higher, or placement

Methods of Evaluation

3-4 exams, 10-20 quizzes, up to 15 additional assignments, and a cumulative final exam.

Instructional Materials and Additional Supplies

Elementary Statistics, Navidi and Monk, 4th edition (2025). 978-1-2669-3662-3 - Print Text
Required: TI-84 Plus graphing calculator; $85-$120

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Definition of Basic Terms	1. Explain the difference between population and sample, parameter and statistic, descriptive and inferential statistics, qualitative and quantitative, discrete and continuous, and sampling techniques.	2	0	0
Graphical Representations	1. Construct a frequency table and an appropriate graphical representation (stem and leaf diagram, histogram, etc.) for both qualitative and quantitative data.	3	0	0
Measures of Central Tendency	1. Compute the mean, median, and mode for raw data and an estimate for the mean and the modal class for grouped data. 2. Use 1-var stats on a TI-83/TI-84 Plus calculator to compute the mean and median from raw data and an estimate for the mean from grouped data.	2	0	0
Measures of Variation	1. Compute the range, variance, and standard deviation for raw data and an estimate for the standard deviation from grouped data. 2. Use 1-var stats on a TI-83/TI-84 Plus calculator to compute the range and standard deviation from raw data and an estimate for the standard deviation from grouped data.	1	0	0
Measures of Position	1. Compute the z-score or percentile for a particular data point. 2. Find what data point corresponds to a particular quartile, or percentile.	2	0	0
Boxplots	1. Construct a boxplot using the TI-83/TI-84 Plus calculator. 2. Compute the five-number summary for a set of data. 3. Construct simultaneous boxplots on a calculator and use them to compare measures of central tendency, variation, and position.	1	0	0
Concepts of Probability	1. Construct sample spaces. 2. Compute probabilities. 3. Define mutually exclusive and equally likely events. 4. Use addition and complementation rules to find other probabilities of interest.	2	0	0
Discrete Probability Distributions	1. Compute the mean and standard deviation of the random variable x given its probability. 2. Use 'binompdf' and 'binomcdf' to compute probabilities for a binomial random variable.	5	0	0
Continuous Probability Distributions	1. Explain the difference between a discrete and continuous distribution. 2. Use 'normalcdf' to compute probabilities for the normal random variables x and x-bar. 3. Use 'invNorm' to compute values of x for a normal random variable. 4. State the Central Limit Theorem.	8	0	0
Point and Interval Estimates	1. Compute a point and interval estimate for the population mean and proportion. 2. Compute needed sample sizes for estimating both the population mean and proportion.	4	0	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Hypothesis Testing	1. Explain the difference between Type I and Type II error, and between left-tailed, right-tailed, and two-tailed tests. 2. Perform a five-step hypothesis testing procedure for problems involving the mean, proportion, or standard deviation.	5	0	0
Linear Regression	1. Compute and interpret the linear correlation coefficient. 2. Construct a scatterplot for bivariate data. 3. Perform a five-step hypothesis testing procedure to test for linear correlation. 4. Predict values of Y given X. 5. Interpret the slope of the regression equation. 6. Find the linear regression equation for a set of linearly related bivariate data.	4	0	0
Review and Tests	1. Earn at least a 70 percent on each of three hour exams and the cumulative final exam.	6	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0