

MATH-93: FOUNDATIONAL MATHEMATICS FOR STATISTICS

Justification for this inactivation request

This course is no longer able to be offered due to AB705 and AB1705 legislation.

Effective Term

Fall 2025

CC Approval

09/20/2024

AS Approval

10/24/2024

BOT Approval

11/21/2024

COCI Approval

03/13/2025

SECTION A - Course Data Elements

CB04 Credit Status

Credit - Degree Applicable

Discipline

Minimum Qualifications	And/Or
Mathematics (Master's Degree)	

Subject Code

MATH - Mathematics

Course Number

93

Department

Mathematics

Division

Mathematics (MATH)

Full Course Title

Foundational Mathematics for Statistics

Short Title

Foundational Math for Stats

CB03 TOP Code

1701.00 - Mathematics, General

CB08 Basic Skills Status

NBS - Not Basic Skills

CB09 SAM Code

E - Non-Occupational

SECTION B - Course Description

Catalog Course Description

Math 93 provides students with the algebraic skills necessary for success in Statistics (Math 232). Students will learn to use core concepts from arithmetic, prealgebra, elementary and intermediate algebra, with emphasis on solving and graphing linear equations; modeling with linear functions; solving contextualized problems; and dimensional analysis. This course is not intended for math, science, computer science, business, or engineering majors.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit

No

Repeatability

Not Repeatable

Grading Options

Letter Grade or Pass/No Pass

Allow Audit

Yes

Requisites

Advisory Prerequisite(s)

It is expected that students have a fundamental understanding of signed numbers, including decimals and fractions.

SECTION D - Course Standards

Is this course variable unit?

No

Units

3.00

Lecture Hours

36.00

Activity Hours

36.00

Outside of Class Hours

90

Total Contact Hours

72

Total Student Hours

162

Distance Education Approval

Is this course offered through Distance Education?

Yes

Online Delivery Methods

DE Modalities	Permanent or Emergency Only?
Entirely Online	Permanent
Hybrid	Permanent
Online with Proctored Exams	Permanent

SECTION E - Course Content

Student Learning Outcomes

Upon satisfactory completion of the course, students will be able to:	
1.	Perform arithmetic and/or algebraic operations, as needed for statistics calculations.
2.	Create graphs such as histograms, dot-plots and lines.
3.	Interpret the slope and y-intercept of a linear equation.

Course Objectives

Upon satisfactory completion of the course, students will be able to:	
1.	Perform arithmetic operations involving integers, fractions and decimals.
2.	Identify common irrational numbers used in statistics.
3.	Convert between scientific notation and decimal notation.
4.	Convert between units of measure.
5.	Use the Order of Operations to simplify expressions.
6.	Translate English sentences into mathematical expressions, equations and inequalities.
7.	Solve equations and inequalities with one variable.
8.	Graph solutions to equations and inequalities with one variable on the number line.
9.	Understand and appropriately use interval notation, including identification of number both in and out of closed and open intervals.
10.	Understand and apply a Problem-Solving Method.
11.	Solve literal equations.
12.	Interpret scatterplots.
13.	Graph linear equations.
14.	Understand and interpret slope and y-intercept.
15.	Understand and use various kinds of set notation.
16.	Apply basic principles of counting.
17.	Write and compute sums using sigma notation.
18.	Find the area under a linear function.
19.	Identify the graphs of functions used in statistics, such as exponential, logarithmic, rational exponent and power functions.
20.	Use appropriate and effective student skills.

Course Content

1. Arithmetic Operations and Numbers
 - a. Identify integers, fractions, decimals, percentages and irrational numbers.
 - b. Arithmetic operations using fractions and decimals by hand.
 - c. Round decimals.
 - d. Reduce fractions to lowest terms.
 - e. Convert between decimal, fraction and percent notation.
 - f. Convert between scientific and decimal notation.
 - g. Calculate and interpret percentages and percent error.
 - h. Convert quantities between units of measurement.
2. Introduction to Expressions and Equations
 - a. Translate English sentences into mathematical expressions, equations and inequalities.
 - b. Evaluate and simplify expressions using the Order of Operations.
 - c. Evaluate expressions using given values.
 - d. Evaluate expressions using square roots.
3. Equations, Inequalities and Problem Solving
 - a. Solve equations in one variable requiring several steps using the Addition and Multiplication Properties as well as the distributive law.
 - b. Solve literal equations involving fractions, squares and square roots.
 - c. Convert plus/minus notation to interval notation.
 - d. Solve compound inequalities.

- e. Use interval and plus/minus notation for solutions to compound inequalities in context.
- f. Use a Problem-Solving method to solve word problems.
- 4. Linear Equations in Two Variables
 - a. Graph points on a plane.
 - b. Graph scatterplots using application data.
 - c. Identify Independent and Dependent Variables.
 - d. Identify linear equations in two variables.
 - e. Determine the intercepts of graphs of Linear Equations.
 - f. Compute the slope of a line through two points.
 - g. Graph a line using the slope and a point.
 - h. Determine the slope and y-intercept of a Line given the statistical linear equation.
 - i. Interpret the slope and y-intercept of a linear model.
 - j. Write and solve linear equations to model data.
- 5. Fundamentals of Sets
 - a. Use list notation to write sets.
 - b. Determine the intersection, union and complement of sets.
 - c. Construct and use Venn diagrams.
 - d. Construct a tree diagram and apply the multiplication principle to count outcomes.
 - e. Use factorial notation.
 - f. Compute sums involving constants and powers.
 - g. Compute the square of a sum and the sum of a square.
- 6. Introduction to Functions
 - a. Find the domain and range of a function.
 - b. Evaluate functions in an application.
 - c. Find the area under constant and linear functions.
 - d. Identify graphs of functions used in statistics, such as exponential, logarithmic, rational exponent and power functions.
- 7. Effective Student Skills
 - a. Affective Domain exercises including Growth Mindset and Grit
 - b. Effective note taking and study strategies

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Activity	
Directed Study	
Discussion	
Lecture	
Other	Projects

Online Adaptation

Types	Examples of learning activities
Activity	
Directed Study	
Discussion	
Group Work	
Individualized Instruction	
Journal	
Lecture	

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
 Chat Rooms
 Discussion Boards
 E-mail Communication
 Telephone Conversations

Video or Teleconferencing

Student-Initiated Online Contact Types

Chat Rooms

Discussions

Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Exams/Tests	Final Exam
Quizzes	
Projects	
Homework	
Other	Example Questions: 1. Suppose total cholesterol levels between 220 and 270 milligrams per deciliter, not including 220 and 270, are considered borderline. Letting x represent a patient's total blood cholesterol level, write an inequality that describes the ranges corresponding to the borderline of total blood cholesterol. Then give the solution to the inequality in interval notation. 2. State and interpret the slope of the of the line given by the equation; $\text{Calories} = 25.7 + .05\text{Fat}$

Assignments

Reading Assignments

Read the section on slope as a rate of change before our next class and be ready to apply those concepts to an in-class activity.

Writing Assignments

Example 1. Online or Paper Homework: Complete assigned exercises from the applicable section in the text.

Example 2. Group Project: Given the scatterplot and regression equation, determine whether or not there is linear correlation between the data sets. In addition, interpret the slope and y-intercept of the regression equation.

SECTION F - Textbooks and Instructional Materials

Material Type

Textbook

Author

The Consortium for Foundation Mathematics

Title

Mathematics in Action. An introduction to algebraic, graphical, and numerical problem solving.

Edition/Version

5th

Publisher

Pearson Education

Year

2016

Material Type

Textbook

Author

Davis, Armstrong, McCraith

Title

PreStatistics

Edition/Version

1st

Publisher

Cengage

Year

2019

Material Type

Other required materials/supplies

Description

These texts may be accompanied by an online homework component in the platform of the publisher.

SECTION G - Diversity, Equity and Inclusivity**Course Codes (Admin Only)****CB00 State ID**

CCC000602587

CB10 Cooperative Work Experience Status

N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status

Y - Credit Course

CB13 Special Class Status

N - The Course is Not an Approved Special Class

CB23 Funding Agency Category

Y - Not Applicable (Funding Not Used)

CB24 Program Course Status

Not Program Applicable

Allow Pass/No Pass

Yes

Only Pass/No Pass

No