MATH-83: ESSENTIAL MATHEMATICS FOR STATISTICS

Effective Term
Fall 2024

CC Approval
01/19/2024

AS Approval
02/27/2024

BOT Approval
03/21/2024

SECTION A - Course Data Elements

Send Workflow to Initiator
No

CB04 Credit Status
Credit - Non-degree Applicable

Discipline

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

Subject Code
MATH - Mathematics
Course Number
83

Department
Mathematics (MATH)

Division
Mathematics (MATH)

Full Course Title
Essential Mathematics for Statistics

Short Title
Essential Math for Statistics

CB03 TOP Code
1702.00 - Mathematics Skills

CB08 Basic Skills Status
NBS - Not Basic Skills

CB09 SAM Code
E - Non-Occupational

Rationale
Course objectives, course content and SLOs updated to better reflect the needs of this class.

SECTION B - Course Description

Catalog Course Description
Math 83 is open only to students who concurrently enroll in Math 232, Statistics. Students will review and apply concepts from arithmetic, algebra and geometry to the understanding of college level statistics. Concepts will be covered using a just-in-time approach for understanding of the corresponding statistics concepts as they are presented in Math 232. This course is not appropriate for math, science, computer science, business, or engineering majors.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit
No

Repeatability
Not Repeatable

Grading Options
Pass/No Pass Only

Allow Audit
Yes

Requisites

Corequisite(s)
Concurrent enrollment in Math-232 or equivalent.

Requisite Justification

Requisite Description
Course Not in a Sequence

Subject
Math
Course #
232

Level of Scrutiny
Closely Related Lecture/Lab Courses

SECTION D - Course Standards

Is this course variable unit?
No

Units
2.00000

Lecture Hours
18.00

Activity Hours
36.00

Outside of Class Hours
54

Total Contact Hours
54

Total Student Hours
108

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.	Generate 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.	Convert between number forms such as fraction, decimal, scientific notation and percent notation.
3.	Convert between units of measure.
4.	Use the Order of Operations to evaluate and simplify expressions, such as those used for calculating measures of center and variation.
5.	Solve equations in one variable.
6.	Graph solutions to equations and inequalities on the number line.
7.	Understand and use interval notation to represent compound inequalities.
8.	Solve literal equations.
9.	Graph points on a plane.
10.	Graph linear equations.
11.	Identify and interpret slope and y-intercept.
12.	Understand and use set notation.
13.	Write and compute sums using sigma notation.
14.	Compute the area of a rectangle.
15.	Use appropriate and effective study skills.

Course Content

Using a just-in-time approach, the following content will be covered as needed for success in the corequisite statistics course.

1. Identify integers, fractions, decimals, percentages and irrational numbers.
2. Perform arithmetic operations using fractions and decimals by hand.
3. Round decimals.
4. Reduce fractions to lowest terms.
5. Convert between decimal, fraction and percent notation.
6. Convert between scientific and decimal notation.
7. Calculate and interpret percentages.
8. Convert quantities between units of measurement.
9. Identify variables in context.
10. Evaluate and simplify expressions using the Order of Operations.
11. Evaluate expressions using given values.
12. Evaluate expressions including square roots.
13. Solve equations in one variable.
14. Solve literal equations.
15. Interpret inequality notation.
16. Understand and apply interval and plus/minus notation to the solution of compound inequalities.
17. Identify numbers both in and out of closed and open intervals.
18. Graph points on a plane.

19. Graph scatterplots using application data.
20. Find and interpret the y-intercept from a graph and a given equation.
21. Find and interpret the slope from two points, an equation and a graph.
22. Graph linear equations using points, slope-intercept, and point-slope.
23. Write and solve linear equations to model data.
24. Use set notation.
25. Determine the intersection, union and complement of sets.
26. Use sigma notation.
27. Compute area of rectangles.
28. Effective Student Skills - Students should study.
    a. Affective Domain exercises including Growth Mindset and Grit
    b. Effective note taking and study strategies
    c. Effective time management
    d. Test-taking strategies
    e. Campus resources

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Lecture	In class lecture
Discussion	Discussion of class topics
Group Work	Practice problems in groups

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
Discussion Boards
E-mail Communication
Video or Teleconferencing

Student-Initiated Online Contact Types

Discussions
Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Class Participation	Participate in class discussions related to course content.
Lab Activities	Obtain real world data and draw conclusions using statistical analysis.
Homework	Homework problems from the book. Homework worksheets involving the exploration of data.
Other	Additional assessment information: The Mathematics Department maintains a commitment to diverse teaching methods in courses emphasizing vital quantitative skills and qualitative reasoning ability. To that end, it is expected that sufficient formative assessments will be given to students that in frequency, length and rigor adequately assess both quantitative skills and qualitative reasoning.

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) Graph the given ordered pairs. Draw the line of best fit and then find the equation for the line. Then interpret the slope and y-intercept.

Other Assignments
Other assignments as needed.

SECTION F - Textbooks and Instructional Materials

Material Type
Other required materials/supplies

Description
Use of textbook and materials from concurrently enrolled Math 232 or equivalent.

Proposed General Education/Transfer Agreement

Do you wish to propose this course for a Local General Education Area?
No

Do you wish to propose this course for a CSU General Education Area?
No

Do you wish to propose this course for a UC Transferable Course Agreement (UC-TCA)?
No

Course Codes (Admin Only)

ASSIST Update
No

CB00 State ID
CCC000602585

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
Yes