

MATH-235: FINITE MATHEMATICS

Effective Term

Fall 2024

CC Approval

11/17/2023

AS Approval

12/12/2023

BOT Approval

12/14/2023

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

235

Department

Mathematics (MATH)

Division

Mathematics (MATH)

Full Course Title

Finite Mathematics

Short Title

Finite Mathematics

CB03 TOP Code

1701.00 - Mathematics, General

CB08 Basic Skills Status

NBS - Not Basic Skills

CB09 SAM Code

E - Non-Occupational

Rationale

Non-substantive changes to course content and verification of most current textbook.

SECTION B - Course Description

Catalog Course Description

This course covers linear functions, systems of linear equations and inequalities, matrices, linear programming, mathematics of finance, sets and Venn diagrams, combinatorial techniques and an introduction to probability. Applications from business, economics and social sciences are included in this class.

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

Prerequisite(s)

Completion of High School Algebra 2 or Intermediate Algebra level content with a minimum grade of C or appropriate placement.

Requisite Justification

Requisite Description

Non-course Requisite

Level of Scrutiny

Required by 4-Year Institution

Explanation

As required on C-ID. UC schools require Intermediate Algebra to be a prerequisite for transfer acceptance. Intermediate Algebra is no longer taught at this college.

SECTION D - Course Standards

Is this course variable unit?

No

Units

3.00000

Lecture Hours

54.00

Outside of Class Hours

108

Total Contact Hours

54

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.	Solve application problems using matrix methods.
2.	Solve applications related to finance.

Course Objectives

Upon satisfactory completion of the course, students will be able to:	
1.	Apply linear and exponential graphs and functions.
2.	Write a system of linear equations to solve applied problems.
3.	Solve a system of linear equations using Gauss-Jordan elimination and interpret the result.
4.	Find the inverse of a square matrix and use the inverse to solve a system of linear equations.
5.	Solve linear programming problems in at least three variables.
6.	Find unions, intersections and complements of sets and use Venn diagrams to solve.
7.	Apply basic combinatorial principles to enumeration problems.
8.	Determine the probability of a specified event.
9.	Find the conditional probability of an event.
10.	Solve applied problems in finance including simple and compound interest, future and present value, annuities, sinking funds, and amortization.

Course Content

1. Linear equations and functions;
2. Exponential and logarithmic functions and their applications;
3. Applications of linear functions to economics such as cost, revenue and profit functions, supply and demand equations, break-even point, and free market equilibrium;
4. Systems of linear equations;
5. Matrices including matrix algebra, Gauss-Jordan elimination and reduced-row echelon form, inverse matrices, and applications;
6. Linear programming; Math of finance including simple and compound interest, future and present value, annuities, sinking funds, and amortization;
7. Set theory including DeMorgan's Laws and Venn diagrams;
8. Probability and combinatorics including permutations and combinations;
9. Finding the probability of an event given the probabilities of the simple events in a sample space;
10. Conditional probability.

Methods of Instruction**Methods of Instruction**

Types	Examples of learning activities
Activity	Students working in groups to solve problems.
Lecture	Instructor presentation of concepts.
Discussion	Discussion of problem solving techniques.
Other	Other methods at instructor discretion.

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
Exams/Tests	Tests on course content.
Quizzes	Quizzes covering course content.
Homework	Assignments based on course content.
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**

1. Read Chapter 1 on Linear Functions.
2. Read Chapter 3 on Linear Programming.

Writing Assignments

1. Find the monthly payment on a 6% annual interest loan of \$6000 for 4 years.
2. How much should you deposit today in a continuous interest account at 4% to have \$5000 in 3 years?

Other Assignments

Instructors will assign homework or projects where students practice the learning objectives and develop their ability to devise, organize and present complete solutions to problems.

SECTION F - Textbooks and Instructional Materials**Material Type**

Textbook

Author

Robert F. Blitzer

Title

Thinking Mathematically

Edition/Version

Eighth Edition

Publisher

Pearson

Year

2023

ISBN #

9780137551316

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

Local GE Approval Dates

Local GE Area	Approval Date
Local GE Area D2: Mathematics	

CSU GE Approval Dates

CSU GE Area	Approval Date
CSU GE Area B4: Mathematics/Quantitative Reasoning	Fall 1995

IGETC Approval Dates

IGETC Area	Approval Date
IGETC Area 2: Mathematical Concepts and Quantitative Reasoning	Fall 1995

C-ID Approval Dates

C-ID Descriptor	Approval Date
C-ID MATH 130 Approved	7/10/2016

CB00 State ID

CCC000177396

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

Reviewer Comments

Stacey Howard (showard) (Mon, 30 Oct 2023 21:24:26 GMT): Articulation Officer. No need to resubmit for re-articulation to UC or transfer GE, therefore, included a Fall 2024 anticipated implementation term.