Glendale College

Course Outline of Record Report

Course ID 003255

Archived - September 2025

MATH133 : Finite Mathematics

General Information

Author:	• Suzanne Palermo
Course Code (CB01) :	MATH133
Course Title (CB02) :	Finite Mathematics
Department:	MATH
Proposal Start:	Fall 2025 (Fall 2026)
TOP Code (CB03) :	(1701.00) Mathematics, General
CIP Code:	(27.0101) Mathematics, General.
SAM Code (CB09) :	E - Non-Occupational
Distance Education Approved:	Yes
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000288610
Curriculum Committee Approval Date:	09/24/2025
Board of Trustees Approval Date:	06/20/2023
Last Cyclical Review Date:	10/01/2019
Course Description and Course Note:	MATH 133 is a one-semester course in mathematics for business, management, and social science majors. Topics in this course include systems of equations, matrices, probability with an introduction to statistics, Markov chains, and game theory.
Justification:	Transferability/C-ID Change This course was archived in the catalog and PeopleSoft in Fall 2026. I could not change the proposal start.
Academic Career:	• Credit
Mode of Delivery:	No value
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	• Mathematics
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade Only

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

GE Status (CSU) B4, (UC) 2

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

Cal-GETC	Area	Status	Approval Date	Comparable Course
Area 2: Mathematical Concepts and Quantitative Reasoning	Mathematical Concepts and Quantitative Reasoning	Approved	09/02/2025	No Comparable Course defined.

GCC General Education Requirements	Area	Status	Approval Date	Comparable Course
Area 2: Mathematical Concepts and Quantitative Reasoning	Mathematical Concepts and Quantitative Reasoning	Approved	09/02/2025	No Comparable Course defined.

Units and Hours

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	54
Total Course Out-of-Class Hours	108
Total Student Learning Hours	162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	3	6
Laboratory Hours	0	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	54
Laboratory	0
Studio	0
Total	54
Course Out-of-Class Hours	
Lecture	108
Laboratory	0
Studio	0
Total	108

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation

Prerequisite

MATH90 - Intermediate Algebra for BSTEM

Objectives

- perform operations with polynomials;
- solve a system of linear equations using elimination substitution;
- graph functions (linear, quadratic, exponential, logarithmic);

OR

Prerequisite

Placement is based on academic background or satisfactory completion of MATH 90.

Entry Standards

Entry Standards	Description
No value	No value

Course Limitations

Cross Listed or Equivalent Course	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Discussion
Methods of Instruction	Collaborative Learning

Out of Class Assignments

- Reading assignments
- Homework assignments (e.g. problem sets related to course content)

Methods of Evaluation	Description of Activity/Interaction
Exam/Quiz/Test	Three to five exams are required
Exam/Quiz/Test	A comprehensive final examination is required

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
No Value	No Value	No Value	No Value	No Value

Other Instructional Materials (i.e. OER, handouts)

Description	Applied Finite Mathematics
Author	Sekhon, Rupinder
Citation	https://www.deanza.edu/faculty/bloomroberta/documents/AppliedFiniteMath-3ed-Current.pdf
Online Resource(s)	No value

Learning Outcomes

Course Objectives

Perform operations on matrices

Solve linear systems of equations using matrix methods

Solve elementary combinatoric and probability problems

Analyze data numerically and graphically, including normal probability distributions

Solve problems using Markov chains

Solve problems using game theory

SLOs

Describe the distribution of single-variable and bivariate data using statistics and graphs. Expected Outcome Performance: 70.0

ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.

ILOs Core ILOs	Communicate clearly, ethically, and creatively; listen actively and engage respectfully with others; consider situational, cultural, and personal contexts within or across multiple modes of communication.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ILOs General Education	apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Calculate the probability of events from distributions and discrete sample spaces, as well as calculate the expected value of random variables.

Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.
ILOs General Education	apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Use matrix arithmetic to calculate the distribution among various states in a Markov chain model.

Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.
ILOs General Education	apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Calculate optimal strategies in zero-sum games.

Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.
ILOs General Education	apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Solve ration, proportion and percent problems.

Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.

ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.
ILOs General Education	apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Course Content

Lecture Content

Algebra Review and Systems of Linear Equations (10)
- Functions and their graphs
- Solution of a linear equations and inequalities
- Solution of systems of linear equations
- The algebra of matrices

Counting Techniques (4)
- Sets
- Permutations and combinations

Probability (12)
- Compound and independent events
- Multiplication and addition theorems
- Conditional probability, dependent and independent events
- Bayes Theorem
- Binomial probability distributions

Statistics (10)
- Random variables and probability functions
- Expected values
- Variance and standard deviations
- Normal probability distribution

Markov Chains (9)
- Transition matrix and probability vectors
- Regular and absorbing Markov Chains

Game Theory (9)
- Game trees and matrix games
- Pure strategy and mixed strategy solutions

Total Hours=54