Glendale College
Course Outline of Record Report

Course ID 003255

Revision - May 2023

MATH133 : Finite Mathematics

General Information

Author:	• Suzanne Palermo
Course Code (CB01) :	MATH133
Course Title (CB02) :	Finite Mathematics
Department:	MATH
Proposal Start:	Fall 2023
TOP Code (CB03) :	(1701.00) Mathematics, General
CIP Code:	(27.0101) Mathematics, General.
SAM Code (CB09) :	Non-Occupational
Distance Education Approved:	Yes
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000288610
Curriculum Committee Approval Date:	05/10/2023
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:	Coding/Category Change
Academic Career:	• Credit
Author:	• Suzanne Palermo

Academic Senate Discipline

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

Transferability & Gen. Ed. Options

General Education Status (CB25)

GE Status (CSU) B4, (UC) 2

Transferability   **Transferability Status**

Transferable to both UC and CSU   Approved

IGETC Area	Area	Status	Approval Date	Comparable Course
2-Math	Mathematical Concepts and Quantitative Reasoning	Approved	09/09/1991	No Comparable Course defined.

CSU GE-Breadth Area	Area	Status	Approval Date	Comparable Course
B4-Mathematics/Quantitative Reasoning	Mathematics/Quantitative Reasoning	Approved	No value	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

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

MATH90 - Intermediate Algebra for BSTEM (in-development)

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

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	Rationale
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 and Objectives

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

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

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Use matrix arithmetic to calculate the distribution among various states in a Markov chain model.
Expected Outcome Performance: 70.0

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Calculate optimal strategies in zero-sum games.
Expected Outcome Performance: 70.0

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Solve ration, proportion and percent problems.
Expected Outcome Performance: 70.0

ILOs
General Education
apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?
No Value

Is this proposal submitted in response to learning outcomes assessment data?
No Value

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.
No Value

SLO Evidence
No Value

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