MATH 9 Course Outline as of Fall 2008

CATALOG INFORMATION

Dept and Nbr: MATH 9 Title: FINITE MATH Full Title: Finite Mathematics Last Reviewed: 3/13/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:

Sets, matrices, systems of equations and inequalities, linear programming, combinatorial techniques and probability, mathematics of finance, Markov chains, game theory.

Prerequisites/Corequisites: Math 155.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:

Description: Sets, matrices, systems of equations and inequalities, linear programming, combinatorial techniques and probability, mathematics of finance, Markov chains, game theory. (Grade or P/NP) Prerequisites/Corequisites: Math 155. Recommended: Limits on Enrollment: Transfer Credit: CSU;UC. (CAN MATH12)

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area B	Thinking	n and Analytical	Effective: Fall 1981	Inactive:
CSU GE:	MC Transfer Area B4	Math Competer Math/Quantitat	•	Effective: Fall 1981	Inactive:
IGETC:	Transfer Area 2A	Mathematical Quantitative Re	1	Effective: Fall 1981	Inactive:
CSU Transfer	Transferable	Effective:	Fall 1981	Inactive:	
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive:	

CID:

CID Descriptor:MATH 130	Finite Mathematics
SRJC Equivalent Course(s):	MATH9

Certificate/Major Applicable:

Major Applicable Course

COURSE CONTENT

Outcomes and Objectives:

Upon completion of the course, students will be able to:

- 1. Define sets and perform matrix operations.
- 2. Apply matrix methods of solving systems of equations.
- 3. Apply the fundamental counting principle, permutations, and combinations to problems involving the Binomial Theorem and probability.
- 4. Use expected value, conditional probability and Markov chains.
- 5. Apply graphical and simplex linear programming methods.
- 6. Apply compound interest, annuities, present value, sinking funds, amortization formulas.
- 7. Apply fundamentals of game theory.

Topics and Scope:

- I. Discrete Methods
 - A. Introduction to sets
 - B. Matrices
 - 1. Operations
 - 2. Methods of solving systems of equations
 - C. Permutations
 - **D**. Combinations
 - E. Binomial Theorem
- II. Probability

- A. Counting techniques
 - 1. Fundamental counting principle
 - 2. Permutations
 - 3. Combinations
- B. Application of counting techniques to probability
- C. Expected value
- D. Conditional probability
- E. Markov chain
- III. Linear Programming
 - A. Graphical methods
 - B. Simplex methods
- IV. Mathematics of Finance
 - A. Compound interest
 - B. Annuities
 - C. Present value
 - D. Sinking funds
 - E. Amortization
- V. Game Theory
 - A. Fundamentals
 - B. Matrix methods
 - C. Linear programming methods

Assignment:

- 1. Daily reading outside of class (approximately 20-50 pages per week).
- 2. Problem set assignments from required text(s), or supplementary materials chosen by the instructor (approximately 1-6 per week).
- 3. Quizzes (approximately 0-4 per week).
- 4. Exams (approximately 3-8 per term).
- 5. Projects (for example, computer explorations or modeling activities, approximately 0-10 per term).

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

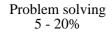
None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Writing 0 - 0%



None

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice and free response exams; quizzes

Other: Includes any assessment tools that do not logically fit into the above categories.

Projects

Representative Textbooks and Materials:

Finite Mathematics (4th ed.). Waner, Stefan and Constenoble, Steven.
Brooks/Cole: 2007.
Finite Mathematics (11th ed.). Barnett, Raymond; Ziegler, Michael; Byleen, Karl. Prentice Hall: 2008.
Finite Mathematics (9th ed.). Lial, Margaret; Greenwell, Raymond; Ritchey,

Finite Mathematics (9th ed.). Lial, Margaret; Greenwell, Raymond; Rite Nathan. Addison Wesley: 2007.

Skill Demonstrations 0 - 0% n skill zzes To - 95% not logically Other Category 0 - 10%