MATH C150: FINITE MATHEMATICS WITH APPLICATIONS

Item	Value
Top Code	170100 - Mathematics, General
Units	4 Total Units
Hours	72 Total Hours (Lecture Hours 72)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Local General Education (GE)	• CL Option 1 Math Competency (CA3)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 2A Math Concepts (2A)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 2A Math Concepts (2A)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B4 Math/Quant.Reasoning (B4)

Course Description

Topics include 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 in business, economics, and social sciences. PREREQUISITE: A course taught at the level of intermediate algebra or appropriate math placement. Transfer Credit: CSU; UC.

Course Level Student Learning Outcome(s)

1. Solve problems involving linear programming, probability and statistics, finance, set theory, and other applications of mathematics.

Course Objectives

- 1. Given a linear programming application problem, students will be able to set up the system of linear inequalities and find the solutions graphically and algebraically.
- 2. Given a probability or statistics application problem, students will be able to use Venn Diagrams, formulas, and theorems to find the solutions.
- 3. Given a finance application problem, students will be able to choose the proper mathematics formula and compute the result by using a scientific calculator.
- 4. Use appropriate technology such as calculators or computer software to enhance mathematical thinking, visualization, and understanding, to solve mathematical problems, and judge the reasonableness of the results.
- 5. Demonstrate quantitative reasoning skills by developing convincing arguments and by communicating mathematically both verbally and in writing.

Lecture Content

Linear equations and functions. Exponential and logarithmic functions and their applications. Applications of linear functions to economics such as cost, revenue and profit functions, supply and demands equations, break-even point, and free market equilibrium. Systems of linear equations. Matrices including matrix algebra, Gauss-Jordan elimination and reduced-row echelon form, inverse matrices, and applications. Linear programming. Math of Finance including simple and compound interest, future and present value, annuities, sinking funds, and amortization. Set Theory including DeMorgans Laws and Venn diagrams; and Probability and combinatorics including permutations and combinations; finding the probability of an event given the probabilities of the simple events in a sample space; conditional probability.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Video one-way (ITV, video) (63)

Instructional Techniques

All the teaching methods use computers, math software, graphing calculators, videos, and PowerPoint Presentations.

Reading Assignments

Reading in a textbook or supplementary OER source

Writing Assignments

Observe real-world problems and translate into mathematical language. Practice with homework exercises, quizzes, and take comprehensive Midterm and Final exams.

Out-of-class Assignments

#NAME.

Demonstration of Critical Thinking

Written Assignments include a variety of problems to reinforce the understanding and achievement of all SLOs. Quizzes will be multiple-choice or free-response; content will be from a recent lecture, reading assignment, or homework assignment. Midterm and Final Examinations will be free-response, open-ended, show your work for partial credit. Objective Examination may be separate assessment or part of an exam, will cover any of the SLOS. Submit the written project report to the instructor based on materials covered in the course. Apply mathematics concepts to solve real world application problems, explain the reasoning, and present the results.

Required Writing, Problem Solving, Skills Demonstration

Included as homework assignments, part of classroom discussions, part of quizzes, Midterm Examination, Final Examination, and Projects. Students will be able to explain solutions and justify reasoning verbally on writing and may be included in classroom discussions, quizzes, Midterm Examination, Final Examination, and Projects. Tests, examinations, homework or projects where students demonstrate their

mastery of the learning objectives and their ability to devise, organize and present complete solutions to problems.

Eligible Disciplines

Mathematics: Masters degree in mathematics or applied mathematics OR bachelors degree in either of the above AND masters degree in statistics, physics, or mathematics education OR the equivalent. Masters degree required.

Textbooks Resources

1. Required Goldstein, Larry J.; Schneider, David I.; Siegel, Martha J.; Hair, Steven M. Finite Mathematics Its Applications, 12th ed. Pearson, 2018

Other Resources

1. MyMathLab access code 2. Digital Video Tutor 3. Student Solutions Manual 4. Coastline Library