RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

MATH 100: FINITE MATHEMATICS

I. Basic Course Information

A. Course Number and Title: Math 100: Finite Mathematics

B. New or Modified Course: Modified course

C. Date of Proposal: Fall, 2016

D. Effective Term: Fall 2017

E. Sponsoring Department: Mathematics

F. Semester Credit Hours: 3

G. Weekly Contact Hours: Lecture: 3
Laboratory: 0
Out of class student work per week: 6

H. Prerequisites/Corequisites:
Math 020 Elementary Algebra, MATH 020W Elementary Algebra with
Workshop, or satisfactory score on placement test.

I. Laboratory Fees: None

J. Name and Telephone Number or E-Mail Address of Department Chair at time of
approval:
Dr. Lynne Kowski   (908) 526 – 1200 x 8254   Lynne.Kowski@raritanval.edu

II. Catalog Description

Prerequisites: MATH 020 Elementary Algebra, MATH 020W Elementary Algebra with
Workshop or satisfactory score on a placement test.
This course presents simplified but realistic versions of applications to real-world models
with emphasis on computational skills, ideas, and problem solving rather than on
mathematical theory. Topics include systems of equations, matrices, linear
programming, probability, statistics, and mathematics of finance.

III. Statement of Course Need

Finite Mathematics is designed as a transfer course for students who need a general education math course. This course also serves as a course that approaches mathematics with applications relevant to our increasingly complex daily lives. This course provides students with quantitative techniques to solve problems related to business, finance, health and life sciences, demographics, and the environment.

This course generally transfers as a general education course in the mathematics area.

IV. Place of Course in College Curriculum
A. Free Elective (This applies automatically to all college level credit courses in the College.)
B. This course serves as a General Education course in Mathematics.
C. This course can be used as a program requirement for the AAS in Business Management.
D. Course transferability; for New Jersey schools go to the NJ Transfer website, www.njtransfer.org. For all other colleges and universities go their individual websites.

V. Outline of Course Content
The topics include:

A. Linear Functions and Matrices
 1. Linear Modeling
 2. Systems of Linear Equations
 3. Matrices
B. Linear Programming
 1. Systems of Linear Inequalities
 2. Linear Programming Problems
 3. Graphing Solution to Linear Programming Problems
C. Mathematics of Finance
 1. Simple and Compound Interest
 2. Annuities
 3. Amortization
D. Sets and Counting
 1. Sets and Set Operations
 2. Finite Set
 3. Multiplication Principle
 4. Permutations and Combinations
E. Probability
 1. Basic Probability Concepts
 2. Rules of Probability
 3. Counting Techniques
 4. Conditional Probability and Independent Events
F. Statistics

1. Central Tendencies and Distribution
2. Expected Value
3. Variance and Standard Deviation

VI. General Education and Course Learning Outcomes

A. <u>General Education Learning Outcomes:</u>
After completion of this course, students will be able to:
1. Solve systems of equations and application problems by using matrices. (GE-NJ2)
2. Use the method of linear programming to solve application problems. (GE-NJ2)
3. Solve problems which require use of the mathematics of finance. (GE-NJ2)
4. Use probability and statistics to solve application problems.　(GE-NJ2)

B. <u>Course Learning Outcomes:</u>
See above.

C. <u>Assessment Instruments</u>
1. Homework assignments / problem sets
2. Tests　(required)
3. Projects
4. Quizzes
5. Final Exam (required)

VII. Grade Determinants
A. Homework / problem sets
B. Tests (required)
C. Projects
D. Quizzes
E. Final Exam (required)

Primary formats, modes, and methods for teaching and learning that may be used in the course:
A. Lecture/discussion
B. Small-group work
C. Technology assisted instruction
D. Student collaboration

VIII. Texts and Materials

A. Textbook: *Finite Mathematics with Applications* by Lial, latest edition (or similar).
B. Graphing Calculator
C. Library or Web sources

(Please Note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.)

IX. Resources

No unusual resources needed.

X. Honors Options:

This course does not have an honors option.