RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

MATH 020 – ELEMENTARY ALGEBRA

I. Basic Course Information

A. Course Number and Title: MATH020 – Elementary Algebra

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Fall Year: 2021

D. Effective Term: Fall 2022

E. Sponsoring Department: Mathematics

F. Semester Credit Hours: 4 NC

G. Weekly Contact Hours: Lecture: 4
Laboratory: NA
Out of class student work per week: 8

H. Prerequisites/Corequisites: Appropriate placement score

I. Laboratory Fees: None

J. Name and Telephone Number or E-Mail Address of Department Chair at time of approval: Dr. Lori Austin Lori.Austin@raritanval.edu

Divisional Dean at time of approval: Dr. Sarah Imbriglio
Sarah.Imbriglio@raritanval.edu

II. Catalog Description

Prerequisite: Appropriate placement score. This course is designed to provide an introduction to and development of elementary algebra concepts. Topics include exponents, polynomials, factoring, solving first degree equations and inequalities, rational and radical expressions, quadratic equations, techniques of graphing, systems of equations and applications.

III. Statement of Course Need

A. Elementary Algebra serves as a prerequisite for MATH 030, Intermediate Algebra and for college level math courses for students who are in a non-math intensive program.
B. There is no computer lab component.
C. This course is not designed for transfer.

IV. Place of Course in College Curriculum

A. This course serves as a minimal level of mathematics proficiency for many programs at the college, and is a prerequisite for the next level of developmental mathematics for those students pursing higher level mathematics courses.

V. Outline of Course Content

A. Real Numbers and Algebraic Expressions
1. Operations on real numbers
2. Real Number Properties
3. Simplifying and writing algebraic expressions

B. First Degree Equations and Inequalities
1. Linear equations in one variable and their applications
2. Linear inequalities in one variable and their applications
3. Graphs of first degree linear inequalities

C. Graphs of Straight Lines and Systems Linear Equations in Two Variables
1. The rectangular coordinate system and basic graphing concepts
2. Graphs of linear equations
3. The slope of a line and its applications
4. Solve systems of two linear equations

D. Exponents, Polynomials and Factoring
1. Exponent rules with integer exponents
2. Simplify expressions containing integer exponents
3. Operations on polynomials in one or more variables
4. Factor basic polynomials
5. Solve quadratic equations by factoring

E. Rational and Square Root Expressions
1. Operations on rational expressions
2. Operations on radical expressions

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes:

Students will:

1. Perform basic operations on polynomials, rational expressions and on square roots. (GE – NJ 2)
2. Solve first degree equations and inequalities. (GE – NJ 2)
3. Graph linear equations. (GE – NJ 2)
4. Factor simple polynomials. (GE – NJ 2)
5. Solve quadratic equations. (GE – NJ 2)
6. Solve application problems. (GE – NJ 2)

B. Course Learning Outcomes

See above

C. Assessment Instruments

1. Classwork/homework/quizzes
2. Chapter tests
3. Departmental final exam
4. Online homework assignments

VII. Grade Determinants

A. Chapter tests (required)
B. Assignments/homework/quizzes
C. Final exam (required)
D. MyLabsPlus online homework (required)
E. Other teacher determined items

The departmental cumulative final exam will be used to assess all of the learning outcomes listed in Section VI, Part A.

A. Lecture/active learning
B. Small-group work
C. Computer-assisted instruction

VIII. Texts and Materials

A. Suggested textbook: Beginning and Intermediate Algebra with Applications and Visualization by Gary K. Rockswold &Terry A.Krieger, 3rd edition, Pearson.

(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

Suggested resource: MyMathLab (Plus), Pearson