Science, Technology, Engineering, and Mathematics (STEM) Division
3322 College Drive, Vineland, NJ 08360
856-691-8600

MA 105: INTERMEDIATE ALGEBRA

Syllabus

Lecture Hours/Credits: 4/4

Catalog Description

Prerequisite: EN 060 - or EN 070 and grade of C or higher in MA 094 or equivalent

This is a systematic study of topics in intermediate algebra, commencing with the development of the real number system and its properties. Topics include special factoring methods, solutions of linear and quadratic equations, rational expressions, absolute values, inequalities, graphing, radicals, exponents, and functions.

Textbook and Course Materials

It is the responsibility of the student to confirm with the bookstore and/or their instructor the textbook, handbook, and any other materials required for their specific course and section.

Click here to see current textbook prices at https://cccnj.bncollege.com/shop/ccc/home.

Evaluation Assessment
 Online Proctoring
 All courses offered at RCSJ, whether they are web-enhanced, hybrid, or fully online, may include assessments that make use of Online Proctoring. To find out more about Online Proctoring and to learn about the minimum technical requirements, visit rcsj.edu/elearning/online-proctoring.

Grading Distribution

Grading to be determined by individual instructors.

Individual instructors may include the following assessment(s):

- Exams
- Quizzes
- Classwork
- Homework
- Attendance and Participation

Grading

The grading scale for each course and section will be determined by the instructor and distributed the first day of class.

Rowan College of South Jersey Core Competencies

(Based on the NJCCC General Education Foundation - August 15, 2007; Revised 2011; Adopted 2014)

This comprehensive list reflects the core competencies that are essential for all RCSJ graduates; however, each program varies regarding competencies required for a specific degree. Critical thinking is embedded in all courses, while teamwork and personal skills are embedded in many courses.

1. **Written and Oral Communication**: Students will communicate effectively in both speech and writing.
2. **Quantitative Knowledge and Skills:** Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems
3. **Scientific Knowledge and Reasoning:** Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.
4. **Technological Competency:** Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals
5. **Society and Human Behavior:** Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.
6. **Humanistic Perspective:** Students will analyze works in the fields of art, history, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language
7. **Historical Perspective:** Students will understand historical events and movements in World, Western, non-Western or American societies and assess their subsequent significance.
8. **Global and Cultural Awareness:** Students will understand the importance of a global perspective and culturally diverse peoples.
9. **Ethical Reasoning and Action:** Students will understand ethical issues and situations.
10. **Information Literacy:** Students will address an information need by locating, evaluating, and effectively using information.

MA 105 CORE COMPETENCIES

This course focuses on one of RCSJ's Core Competencies:

- Quantitative Knowledge and Skills

Student Learning Outcomes: Intermediate Algebra

Successful completion of MA 105 will help students:	RCSJ Core Competencies	Evaluation / Assessment (Additional means of evaluation may be included by individual instructors)
Identify and solve linear and non-linear equations and inequalities including: a. Linear b. Quadratic c. Rational d. Polynomial e. Square Root Absolute Value	Quantitative Knowledge and Skills	Homework, Quizzes, Assignment, Exams
Identify and analyze functions including: a. Linear b. Quadratic c. Rational d. Polynomial e. Square Root	Quantitative Knowledge and Skills	Homework, Quizzes, Assignment, Exams
Communicate accurately using mathematical terminology and notation in written and oral form to identify function models, solve problems and interpret found solutions.	Quantitative Knowledge and Skills	Homework, Quizzes, Assignment, Exams

Topical Outline
Review of Basic Algebraic Concepts
- Sets of Number and Interval Notation
- Operations on Real Numbers
- Simplifying Algebraic Expressions

Linear Equations and Inequalities in One Variable
- Linear Equations in One Variable
- Applications of Linear Equations in One Variable
- Applications of Geometry and Literal Equations
- Linear Inequalities in One Variable
- Compound Inequalities
- Absolute Value Equations
- Absolute Value Inequalities

Linear Equations in Two Variables and Functions
- Linear Equations in Two Variables
- Slope of a Line and Rate of Change
- Equations of a Line
- Applications of Linear Equations and Modeling
- Introduction to Relations
- Introduction to Functions
- Graphs of Basic Functions

Systems of Linear Equations
- Solving Systems of Linear Equations by the Graphing Method
- Solving Systems of Linear Equations by Using the Substitution Method
- Solving Systems of Linear Equations by Using the Addition Method
- Applications of System of Linear Equations in Two Variables

Polynomials
- Properties of Integer Exponents and Scientific Notation
- Addition and Subtraction of Polynomials and Polynomial Functions
- Multiplication of Polynomials
- Division of Polynomials
- Greatest Common Factor and Factoring by Grouping
- Factoring Trinomials
- Factoring Binomials
- Solving Equations by Using the Zero Product Rule

Rational Expressions and Rational Equations
- Rational Expressions and Rational Functions
- Multiplication and Division of Rational Expressions
- Addition and Subtraction of Rational Expressions
- Complex Fractions
- Solving Rational Equations

Radicals and Complex Numbers
- Definition of an nth-Root
- Rational Exponents
- Simplifying Radical Expressions
- Addition and Subtraction of Radicals
- Multiplication of Radicals
- Division of Radicals and Rationalization
- Solving of Radical Equations
- Complex Numbers

Quadratic Equations and Functions
- Square Root Property and completing the Square

- Quadratic Formula
- Equations in Quadratic Form
- Graphs of Quadratic Functions
- Vertex of a Parabola: Applications and

ModelingConic Sections
- Distance Formula, Midpoint Formula and Circles

Affirmative Action Statement

The Board of Trustees is committed to providing a work and academic environment that maintains and promotes affirmative action and equal opportunity for all employees and students without discrimination on the basis of certain enumerated and protected categories. These categories are race, creed (religion), color, national origin, nationality, ancestry, age, sex (including pregnancy and sexual harassment), marital status, domestic partnership or civil union status, affectional or sexual orientation, gender identity or expression, atypical hereditary cellular or blood trait, genetic information, liability for military service, or mental or physical disability, including AIDS and HIV related illnesses.

For questions concerning discrimination, contact Almarie J. Jones, Special Assistant to the President, Diversity and Equity/Title IX and Compliance, 856-415-2154 or ajones@rcsj.edu or (Cumberland) Nathaniel Alridge, Jr., JD, Director, Diversity and Equity/Title IX and Judicial Affairs, 856-691-8600, ext. 1414 or nalridge@rcsj.edu. For disability issues or any barriers in the learning or physical environment related to a document condition/disability please contact: Gloucester campus – Carol Weinhardt, Director, Department of Special Services, ADAAA/504 Officer at 856-415-2247 or cweinhar@rcsj.edu; or Cumberland Campus – Meredith Vicente, Senior Director, Department of Special Services/Project Assist at 856-200-4688 or mvicent1@rcsj.edu

Department of Special Services

The Department of Special Services is committed to providing support services and ensuring equal access to eligible students with documented conditions/disabilities as outlined by the Americans with Disabilities Act (ADA) and the Americans with Disabilities Act with Amendments Act (ADAAA).

(Gloucester Campus Location and Contact)

Location: Instructional Center, room 425A.

Primary Contact: Director, Carol Weinhardt, (email) cweinhar@rcsj.edu; or (phone) 856-415-2247.

(Cumberland Campus Location and Contact)

Location: Center for Academic & Student Success (CASS)

Primary Contact: Senior Director, Meredith Vicente, (email) mvicent1@rcsj.edu; or (phone) 856-200-4688.

Reporting Allegations of Sexual Assault Resource Referrals *(8/2021)*
Cumberland Campus

There are multiple safe places for students to report allegations of sexual assault, both on and off campus.
Reports of sexual assault can be made to any of the following offices listed in the chart below.

All students are encouraged to report alleged crimes on campus.
Employees <u>must</u> report crimes that pose an immediate threat to the campus Security Office, the local Police Department or the Sheriff's Office.

Service	Resource	Phone Number/Location/Website
Non-Confidential Reporting Law Enforcement	Vineland Police Dept.	856-691-4111
	Millville Police Department	856-825-7010
	Cumberland Co. Sheriff's Office	856-451-4449
	Cumberland County Emergency Services	9-1-1
	Cumberland Campus Security 856-200-4706 (Direct)	Andres Lopez, Director Safety and Security 856-200-4706
Non-Confidential On-Campus Reporting Support Services	Almarie J. Jones Special Assistant to the President Diversity and Equity, Title IX and Compliance	856-415-2154 Gloucester Campus College Center, Room116 *ajones@rcsj.edu*
	Nathaniel Alridge, Jr., JD, Director Diversity and Equity, Title IX and Judicial Affairs	856-498-9948 Catherine J. Arpino Education and Humanities Center, *nalridge@rcsj.edu*
	Kellie W. Slade Executive Director Student Services, Student Life	856-200-4615 Student & Enrollment Services Center *kslade@rcsj.edu*
Confidential On-Campus Counseling and Support Services	Student Counseling and Wellness Center John Wojtowicz, LCSW	Academic Building – 1st floor 856-200-4760 *jwojtowi@rcsj.edu*
Confidential Off-Campus Full-Service Support	Center for Family Services – Services Empowering Rights of Victims (SERV)	24/7 Hotlines Cumberland Co. – 1-800-225-0196 *www.centerffs.org/serv*
Hospital Sexual Assault Nurse Examiner on Site	Inspira Medical Center Vineland	1505 W. Sherman Ave., Vineland, NJ 856-641-8000