

Course Outcome Summary

General Education Satisfier Course

MATH 105 Essential Mathematics for College Students

Course Information

Division	Science/Mathematics
Contact Hours	90
Total Credits	6

Prerequisites

RDG 090 and ENGL 090 and MATH 090 or qualifying scores on accepted placement tests

Course Description

This course covers solving and graphing linear equations, systems of linear equations, polynomials and exponent rules, factoring, rational expressions and equations, radicals, quadratic functions, and exponential and logarithmic equations. This course is a review of mathematical and algebra topics before the student transitions into college level statistics, business or liberal arts mathematics.

This course is approved as a General Education competency satisfier.

General Education Goal: Critical Thinking

Competency: Use mathematics to effectively model and evaluate quantitative relationship

Learning Outcome: Students will apply mathematical concepts and methods to understand, analyze, and communicate in quantitative terms

General Education Learning Objectives

- Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
- Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
- Organize, analyze, and interpret various representations of data, including functions, graphs, and tables.
- Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.

Course Outcomes

To evidence success in this course, each student will be expected to:

- Solve linear equations and inequalities.
Applies to General Education Objectives
 - Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
 - Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
 - Organize, analyze, and interpret various representations of data, including functions, graphs, and tables.
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2. Calculate mean, median, and mode.
Applies to General Education Outcomes
 - A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
 - C. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.
3. Solve simple interest and related application problems.
Applies to General Education Outcomes
 - C. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.
4. Graph linear functions.
Applies to General Education Objectives
 - B. Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
 - C. Organize, analyze, and interpret various representations of data, including functions, graphs, and tables.
 - D. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.
5. Create and interpret line graphs, bar graphs, pie graph, and tables.
Applies to General Education Objectives
 - C. Organize, analyze, and interpret various representations of data, including functions, graphs, and tables.
 - D. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.
6. Solve systems of equations and related applications.
Applies to General Education Objectives
 - B. Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
 - D. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.
7. Perform operations with polynomials.
Applies to General Education Outcome
 - A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
8. Factor polynomials.
Applies to General Education Outcomes
 - A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
9. Perform operations with rational expressions.
Applies to General Education Outcomes
 - A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
 - D. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.
10. Evaluate radicals.

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Applies to General Education Outcomes

- A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
- B. Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
- C. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.

11. Solve quadratic equations and applications

Applies to General Education Outcomes

- A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
- B. Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
- C. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.

12. Graph quadratic functions.

Applies to General Education Outcomes

- A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
- B. Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
- C. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.

13. Solve exponential and logarithmic equations and applications.

Applies to General Education Outcomes

- A. Use arithmetic and geometric concepts and representations to solve, estimate, calculate, and check answers to problems to determine the reasonableness of results.
- B. Organize, analyze, and interpret various representations of data, including functions, graphs, and tables.
- C. Utilize linear, exponential, and other nonlinear models to evaluate the nature of relationships in real world problems.
- D. Utilize a variety of problem-solving strategies to solve problems and communicate findings using appropriate mathematical language and symbolism.