**Course Outline**

**DEPT.** MATH  
**COURSE NUMBER:** 0111

**NUMBER OF CREDITS:** 2  
**Lecture:** 2  
**Lab:** 0  
**OJT:** 0

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**Course Title:**  
Co-requisite with College Algebra

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**Catalog Description:**  
Co-requisite with College Algebra  
Supports students who qualify with additional review, just-in-time learning, deeper conceptual development, repetition over time, and learning skills and habits required to be successful with the corresponding college level MATH 1111 College Algebra Math course taken concurrently.

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**Prerequisites or Necessary Entry Skills/Knowledge:**  
ACT Math score of 19 or placement by multiple measures.

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**FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)**

- ☐ Goal 1: Communication: By meeting the following competencies:
- ☐ Goal 2: Critical Thinking: By meeting the following competencies:
- ☐ Goal 3: Natural Sciences: By meeting the following competencies:
- ☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- ☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- ☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- ☐ Goal 7: Human Diversity: By meeting the following competencies:
- ☐ Goal 8: Global Perspective: By meeting the following competencies:
- ☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- ☐ Goal 10: People and the Environment: By meeting the following competencies:

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**Topics to be Covered**

- Growth Mindset, Study Skills and Habits
- Introduction to Functions and Graphs
- Linear Functions and Equations and Inequalities
- Quadratic Functions and Equations
- Other Non-linear Functions and Equations
- Inverses, Exponential and Logarithmic Functions and Equations
- Systems of Equations and Inequalities and Matrices
- Sequences and Series
## Student Learning Outcomes

### Process Standards
- Solve authentic problems by applying two or more mathematical strategies or concepts and using multiple steps.
- Interpret and communicate quantitative information and mathematical concepts using appropriate language for the context.
- Present written or verbal justifications that include appropriate discussion of the mathematics involved.
- Use estimation skills to predict and check answers to mathematical problems in order to determine reasonableness of solutions.
- Make sense of problems, develop strategies to find solutions, and persevere in solving them.
- Read and interpret authentic texts containing quantitative information.
- Use technology when appropriate for a given context.

### Topical Standards
- Develop study skills, habits, and perseverance needed in college Math courses.
- Write algebraic expressions, equations, and inequalities to represent contextualized applications.
- Recognize and graph linear functions.
- Solve literal equations.
- Solve 2 x 2 systems of linear equations.
- Use rules of exponents to simplify expressions.
- Perform operations on polynomial expressions
- Factor polynomials using a variety of methods.
- Perform algebraic operations with radical expressions.
- Convert expressions between radical form and exponential form.
- Simplify and perform operations on rational expressions.
- Solve rational, radical, and quadratic equations analytically.
- Solve applied mathematics problems involving linear, quadratic, rational, and radical models.
- Solve a variety of math problems using multiple representations including tables, graphs, words and symbols.
- Interpret solutions of problems in context and determine if quantitative results are reasonable.
- Translate between graphical, tabular, verbal and symbolic representations of functions and relations.
- Identify the domain and range of functions and relations.
- Use function notation and evaluate functions for specified domain values.

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<thead>
<tr>
<th>Is this course part of a transfer pathway:</th>
<th>Yes ☐</th>
<th>No ☒</th>
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*If yes, please list the competencies below

Revised Date: 1/27/2022