

MATH G060N: QUADRATIC EQUATIONS

| Item | Value |
|------------------------------------|--|
| Curriculum Committee Approval Date | 03/04/2025 |
| Top Code | 170200 - Mathematics Skills |
| Units | 0 Total Units |
| Hours | 6-10 Total Hours (Lecture Hours 0; Lab Hours 6-10) |
| Total Outside of Class Hours | 0 |
| Course Credit Status | Noncredit: Support Course (U) |
| Material Fee | No |
| Basic Skills | Basic Skills (B) |
| Repeatable | Yes; Repeat Limit 99 |
| Open Entry/Open Exit | Yes |
| Grading Policy | P/NP/SP Non-Credit (D) |

Course Description

This noncredit course introduces the basic concepts of quadratic equations and is designed to provide complementary support for college-level mathematics courses. COREQUISITE: MATH G100, MATH G103, MATH G104, MATH G115, MATH G115S, MATH G120, MATH G140, MATH G140S, MATH G170, MATH G180, MATH G185, MATH G280, MATH G285, MATH G287, STAT C1000, STAT C1000E, PSYC G140, SOC G125, or ECON G160. Open Entry/Open Exit. NOT DEGREE APPLICABLE. Not transferable.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Solve a quadratic equation with a leading coefficient other than one.

Course Objectives

- 1. Solve quadratic equations by factoring.
- 2. Solve quadratic equations by completing the square.
- 3. Use the quadratic formula to solve a quadratic equation.

Lecture Content

Lab Content

Solving Quadratic Equations by Factoring Zero factor/product property
 Factoring quadratic equations with a leading coefficient of one
 Difference of two squares
 Factor by grouping
 Factoring quadratics with a leading coefficient other than one
 Solving Quadratic Equations by Completing the Square
 Square root property
 Completing the square
 Solving Quadratic Equations Using the Quadratic Formula
 Identify coefficients of quadratic equations
 Classification of solutions
 The discriminant
 Apply the quadratic formula to solve quadratic equations

Method(s) of Instruction

- Enhanced NC Lab (NC2)
- Online Enhanced NC Lab (NC6)

Reading Assignments

Textbooks and instructor handouts.

Writing Assignments

Writing up solution methods to course concept problems within assignments and course assessments.

Out-of-class Assignments

Demonstration of Critical Thinking

Students will demonstrate critical thinking and problem-solving skills by analyzing a quadratic equation to deduce which solving processes are necessary to deduce all numerical solutions. Demonstrations will be shown by completing assignments, participating in discussions, and completing required assessments.

Required Writing, Problem Solving, Skills Demonstration

Students will demonstrate their problem-solving skills through completing assignments and course assessments by showing their step-by-step processes to solving problems from start to finish.

Eligible Disciplines

Mathematics: Master's degree in mathematics or applied mathematics OR bachelor's degree in either of the above AND master's degree in statistics, physics, or mathematics education OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Marecek, L., Honeycutt Mathis, A.. Intermediate Algebra (Classic), 2nd ed. OpenStax (OER), 2020 Rationale: .