COURSE and NUMBER: MATH 1075 – Intermediate Algebra

CREDITS: 5  CLASS HOURS PER WEEK: 5

PREREQUISITE: MATH 1050; minimum grade of “C”, or completion of MATH 1099 (MATH 1050 module), or placement equivalent.

DESCRIPTION OF THE COURSE:
Second of a two-semester sequence. Includes the study of rational expression arithmetic and simplification and complex fraction simplification; operations on radical expressions and expressions containing rational exponents; the complex number system; solving absolute value, rational, radical, and quadratic equations; solving absolute value and polynomial inequalities in one variable; solving compound inequalities in one and two variables; graphs, relations, and functions including quadratic functions; the distance and midpoint formulas and circles. Includes applications and activities to build skills in problem solving.

LEARNING OUTCOMES:
1. Simplify rational expressions, solve rational equations, and use rational equations to solve problems
2. Identify, evaluate, graph, and interpret functions
3. Solve compound inequalities; solve absolute value equations and inequalities
4. Simplify radical expressions and solve radical equations
5. Perform operations on expressions containing complex numbers; solve quadratic equations and inequalities and use quadratic equations to solve problems
6. Graph and analyze quadratic functions
7. Use the distance, midpoint, and circle formulas

COURSE MATERIALS REQUIRED:
• Access to the ALEKS online learning environment (ISBN: 9781260061741)
• A graphing calculator
• Electronic copy of Beginning and Intermediate Algebra, 4e, Miller, Hyde, O'Neill

UNITS OF INSTRUCTION:
• Rational Expressions and Equations (Sections 7.1 – 7.7, 8.5)
• Graphs, Relations, and Functions (Sections 8.1 – 8.3, 3.6)
• Compound and Quadratic Inequalities; Absolute Value Equations and Inequalities (Sections 9.1 – 9.4)
• Radical Expressions, Functions, and Equations (Sections 10.1 – 10.7)
• Complex Numbers; Quadratic Equations (Sections 10.8, 11.1 – 11.3)
• Quadratic Functions (Sections 11.4, 11.5)
• Distance and Midpoint Formulas; Circles (Section 13.1)

GENERAL INSTRUCTIONAL METHODS:
Instructional methods may include face-to-face or video lectures or demonstration, face-to-face or virtual discussion, individual or group activities including the use of visual aids, graphing calculators, computers and/or other technologies. Students may be expected to participate in these activities during class and/or outside of class. Instructors may require class participation, collaborative learning, and peer review.