1. Mission Statement

The mission of the Malcolm X College Mathematics Department is to deliver a high quality Mathematics program that empowers students with the mathematical literacy needed:

- To achieve career success in the workplace during an era of increasingly global markets and business outlooks.
- To achieve academic success in the various certificate programs, career programs, or associate degree programs offered at our college.
- To transfer successfully with the skills needed to complete programs at other academic institutions.
- To achieve personal enrichment and success in their every day life.

2. Student Learning Outcomes

This assessment plan is for the course-level outcomes of Math 098 and Math 099:

**Math 098 – Beginning Algebra with Geometry**

In order to demonstrate proficiency in algebra, students may be required to pass Math 098 with a C or better. Upon completing the course, students will be able to:

1. Simplify expressions containing integer exponents.
2. Apply scientific notation to contextual (real-world) situations.
3. Simplify square roots for perfect squares.
4. Know and use order of operations.
5. Evaluate algebraic expressions.
6. Perform operations on and simplify polynomial expressions.
7. Factor polynomials.
8. Understand the order relations on the set of real numbers and illustrate them on the real number line.
9. Translate between verbal expressions and algebraic expressions or numerical expressions.
10. Identify and represent numerical or algebraic expressions in equivalent forms.
11. Solve linear equations and inequalities.
12. Solve factorable quadratic equations.
13. Solve and evaluate literal equations (formulas) of the first degree.
14. Solve systems of linear equations in two variables graphically and algebraically.
15. Formulate and apply a linear equation or inequality to a contextual (real world) situation.
16. Determine the slope of a line.
17. Graph linear equations by plotting points and using slope.
18. Identify and represent linear relationships in equivalent forms (i.e., graphical, algebraic, tabular, and contextual).
19. Apply formulas of area perimeter and volume to basic 2 – and 3-dimensional figures.

Math 099 – Intermediate Algebra with Geometry

In order to demonstrate proficiency in algebra and conceptual problem solving skills, students may be required to pass Math 099 with a C or better. Upon completing the course, students will be able to:

1. Simplify expressions containing rational exponents
2. Perform operations on and simplify radicals
3. Perform operations on and simplify rational expressions
4. Solve quadratic equations with real solutions, including the quadratic formula
5. Solve rational equations
6. Solve absolute value equations of the form \(| ax + b | = c \)
7. Solve radical equations of the form \( \sqrt{ ax + b } = c \)
8. Solve compound linear inequalities
9. Solve systems of linear inequalities in two variables
10. Solve systems of linear equations in two and three variables
11. Formulate and apply an equation, inequality or system of linear equations to a contextual (real world) situation
12. Solve and evaluate literal equations, including non-linear equations
13. Formulate and apply nonlinear literal equations to a contextual (real world) situation
14. Graph linear and quadratic equations
15. Determine equations of lines, including parallel and perpendicular lines
16. Determine if given relationships represented in multiple forms are functions
17. Determine domain and range from the graph of a function
18. Formulate and apply the concept of a function to a contextual (real world) situation
19. Interpret slope in a linear model as a rate of change
20. Apply formulas of perimeter, area, and volume to basic 2- and 3-dimensional figures in a contextual (real world) situation
21. Apply the Pythagorean Theorem to various contextual (real world) situation
22. Apply the concepts of similarity and congruency of triangles to a contextual (real world) situation
3. How We Determine if Student Learning Outcomes are Being Met

   a) The Math department has created a series of short assessment quizzes containing 3-4 problems. Each problem is based on an SLO for the respective course. Each complete series of assessment quizzes encompasses all the SLOs for the respective course. There are 5 different assessment quizzes for Math 098 and 10 for Math 099.

   b) During the first two weeks of the fall and spring semesters, each Math 098 and 099 instructor is asked to administer the quizzes to their class. The process is repeated during the last two weeks of class, thereby pre and post course scores are gathered.

4. How will we score/judge the assessments

   a) The completed quizzes are graded electronically by the Dean of Institutional Research; the results are compiled in a report.

5. How will we use this data?

   a) The first semester data gathered by the pre and post course assessment will be used as a benchmark to see how well the students are currently mastering each SLO.

   b) The subsequent data will be used as a tool to set goals for improvement. Discussions about the assessments will take place at Math department meetings throughout each semester.

6. What is the timetable for this assessment?

   a) The Math department began administering the assessment quizzes in Math 098 during the fall 2010 semester. The data for one complete cycle has been compiled and analyzed during the spring 2011 semester.

   b) The Math department has administered one pre-course assessment each semester and analyzed the data in the beginning of each semester.

   c) The department will submit the retention and success of 098 and 099 courses in the beginning of the F-12 semester.

   d) Assessment in General Education courses: The department planned to create pre/post assessment quizzes for Math-140, Math-143 course in the Fall-12 semester and start implementing in Spring-12 semester.

   e) Assessment of critical thinking in Gen. Ed. Courses, Math-125, Math-118, Math-121/122 will be implemented in F-12 semester.