MTH 135  
**College Algebra**  
3 credits

I. **Bulletin Description:** Students will study graphs of lines, parabolas, absolute values, and circles. This course will also encompass an introduction to functions, linear and quadratic functions and models, rational functions, zeros of polynomial functions, complex numbers, and exponential and logarithmic functions. Graphing calculator use is emphasized.

II. **Prerequisite:** Grade of “C” or better in MTH 105 or placement test. (Rationale: The course assumes and builds on material presented in MTH 105: Intermediate Algebra.)

III. **Rationale for Course Level:** This is the next course in the algebra sequence after MTH 105. It is below the level of MTH 140: Pre-Calculus.

IV. **Suggested Textbooks:**

NOTE: The text and the calculator manual may be purchased separately as follows:

V. **Other Requirements and/or Materials for the Course:**
Calculator: A graphing calculator is required. TI-84 is preferred, since the calculator manual is written for that model; however, TI-83 is very similar, so it is also acceptable. No calculator (such as TI-89, TI-92, or TI-nspire) containing a Computer Algebra System (CAS) will be allowed on any exams.


VI. **Student Learning Objectives:**

**SCTC Institutional Learning Goals**

1. Apply aspects of Anishinaabe culture and traditional values.
2. Demonstrate competency in reading, writing, oral communication, and numerical literacy.
3. Be able to evaluate information.
4. Consider multiple perspectives from the diversity of human experience.
Course Goals

After successful completion of this course, the student will be able to:

1. Identify increasing, decreasing, piecewise, constant, polynomial, rational, radical, exponential, and logarithmic functions and their graphs.
2. Construct the graphs of polynomial, rational, exponential, and logarithmic functions.
3. Solve equations involving polynomial, rational, radical, exponential, and logarithmic functions.
4. Develop and apply mathematical models.
5. Utilize a graphing calculator to aid in calculation and graphical construction.

VII. Suggested Course Outline:

- Linear functions, graphs, and models: 2 weeks
- Further topics on functions and graphs: 2 weeks
  Exam 1
- Quadratic functions: 2 weeks
- Rational and radical functions: 2 weeks
  Exam 2
- Polynomial functions and graphs: 3 weeks
- Exponential and logarithmic functions and equations: 2 weeks
  Exam 3

VIII. Suggested Course Evaluation:

Regular homework assignments and quizzes, and three (3) exams. A project or writing assignment may also be included.

Homework: 25%
Quizzes: 25%
Exams: 50% (Exams 1&2: 15% each; Exam 3: 20%)

IX. Bibliography:

  (6ed.). Addison-Wesley.

Syllabus Prepared By:

Wesley Rich, Ph.D.