Syllabus
MAT 024   Math Skills
Introduction to Algebra Concepts and Skills, Part 2
4 non-degree credits

PREREQUISITE:
MAT 021 or MAT 023, or satisfactory score on mathematics placement examination.

COURSE DESCRIPTION:
MAT 023 and 024 are designed to provide the basic skills necessary to succeed in university-level mathematics and mathematics dependent courses. **MAT 024**- *Introduction to Algebra Concepts and Skills, Part 2* includes the following: Elementary study of linear and quadratic functions; integer and rational exponents and radicals; solution of equations and inequalities. These topics extend and build upon topics covered in MAT 023 or MAT 021. Emphasis is on conceptual understanding and problem solving in applications in context. Graphical, numerical and algebraic approaches are used throughout. Elementary geometric and numerical concepts and skills are used both as problem solving tools and as a source of problems.

COURSE OVERVIEW:
MAT 024, the second semester of non-credit preparation for mathematics at the university level, is intended to reinforce students' number sense and understanding of arithmetic operations, and further develop foundation mathematics skills including elementary algebra skills and concepts, problem solving, reasoning, and communication in mathematics. The course provides opportunities for students to see mathematical models of real world situations and to connect mathematics with other disciplines as they develop their foundation skills.

COURSE OBJECTIVES:
Students will be able to:
*   Construct graphs and numerical tables for given linear and quadratic functions; write the equation of a linear function given its graph or a numerical table;
*   Solve linear equations and inequalities in one variable, systems of linear equations in two variables, and quadratic equations;
*   Use the concepts of slope and y-intercept of a linear function to analyze the function and interpret it in a problem situation;
*   Evaluate numerical radical expressions and rewrite them, where appropriate, with rational exponents; simplify algebraic expressions with rational exponents; solve equations involving radicals;
*   Use Pythagoras' theorem to solve appropriate problems;
*   Demonstrate conceptual understanding of numbers (integers, fractions, decimals, scientific notation, percents) in problem solving and in graphing;
*   Interpret and communicate the results of elementary algebraic analysis of a situation;
*   Use technology, when appropriate, to analyze graphs, data, and algebraic expressions;
*   Demonstrate maintenance of skills listed as objectives in MAT 023.[a]

TEACHING AND LEARNING METHODS:
The student must be responsible for her/his own learning. The instructor's role is to provide the student with contexts and opportunities that facilitate the learning process. During class, students will be actively engaged in mathematical activity carefully designed to build conceptual development. Students will work collaboratively in small groups on most of the activities. We will have classroom discussions when appropriate for sharing findings and summarizing important outcomes. Many of the activities will require the use of a graphing calculator. Each student should bring a graphing calculator to every class meeting.

6/2003
[a]*Students may request a copy of the MAT 023 objectives from the instructor for reference.*

To assure the acquisition of basic skills, we will administer 'gateway quizzes' in a laboratory setting. Students are required to pass these quizzes, but they are permitted multiple tries, with variations in the problems.

To assure development of problem solving skills and understanding of the mathematical concepts in the course, we will provide 'mini-projects', investigations in real world context to help students establish connections and construct meaning.

STUDENT RESPONSIBILITIES:
Students are <u>required</u> to attend class regularly and on time, participate actively in an assigned small group and participate in class discussion. Note that this attendance and participation are required to earn a passing grade in this course. Quizzes and examinations are required. There will be assignments collected periodically. No late assignments or make-up examinations will be accepted without an **acceptable** (usually medical) excuse. All examinations are cumulative.

REQUIRED:
<u>Elementary Algebra: A Prerequisite for Functions</u>, by Abney, Mowers, Calland, and Crowley with additional material fpr Math Skills Program at the University of the Virgin Islands by Dance and Sandefur (Pearson Custom Publishing, 2005)
Graphing Calculator (recommended: TI-84 Plus)
Looseleaf notebook
Journal book (small notebook, not looseleaf)
ruler
graph paper

EVALUATION OF STUDENT'S ACHIEVEMENT:
The student will receive a passing grade if the requirements of <u>one</u> of Assessment Methods I, II, or III are fully satisfied. *Note that regular attendance is required for both options I and II. If the student has demonstrated via testing a need for the Math Skills Program, then the student must be in attendance for a passing grade to be awarded. Students who find they are unable to attend are counseled to withdraw from the course.*

<u>Assessment Method I</u>	<u>Minimum requirement</u>
1. In-class Quizzes, Homework	60% average with all journals submitted
2. Gateway Quizzes	90%. (Multiple tries)
3. In-class mini-projects	90% participation; 75% average score
4. Examinations	65% average, with a minimum of 60 on the Final Examination
5. Attendance	No more than 5 absences, for any reason

<u>Assessment Method II</u>	<u>Minimum requirement</u>
1. Final Examination	70% on final exam
2. Attendance	No more than 7 absences, for any reason

<u>Assessment Method III</u>	<u>Minimum requirement</u>
Final Examination	80% on final exam