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| HARTNELL COLLEGE COURSE OUTLINE |
| CC Approval:  Board of Trustees: 11/10/2009 Last Revised: |
| DESIGNATOR & NUMBER: MAT 123L3 |
| COURSE TITLE: Intermediate Algebra Level 3 |
| CREDIT UNITS: 1.5 |
| FACULTY INITIATOR: Kelly Locke |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | CONTACT HOURS PER SEMESTER: | |  | | --- | | Lecture: 0 | | Lab: 72 – 81 | | DHR: 0 | | Other: | | |
| GRADING BASIS: |
| Grade Only |
| PREREQUISITE:   * MAT 123L2: Intermediate Algebra Level 2 with a grade of "C" or better |
| COREQUISITE: |
| ADVISORY: |
| COURSE DESCRIPTION: The third course in a four-course sequence that is equivalent to MAT 123. Study of rational expressions and equations, radicals and radical equations, rational exponents, complex numbers, quadratic equations in one and two variables, and applications. Not open to students who have completed Math 123 with a grade of "C" or better. |
| COURSE OBJECTIVES: Upon satisfactory completion of the course, students will be able to:   |  |  |  | | --- | --- | --- | |  |  |  | |  | 1. | recognize, analyze and employ the most effective strategies to solve rational equations and judge the reasonableness of the result. | |  | 2. | recognize, analyze and employ the most effective strategies to solve radical equations, quadratic equations, and quadratic inequalities and judge the reasonableness of the result. | |  | 3. | simplify, manipulate, and evaluate rational expressions. | |  | 4. | simplify and manipulate and evaluate radical expressions, including complex numbers. | |  | 5. | model real world situations found in various fields of study related to rational equations, radical equations, and quadratic equations and inequalities. | |  | 6. | compare and contrast the equations and graphs of quadratic functions. | |  | 7. | compare and contrast rational equations and rational expressions. | |  | 8. | solve applications related to rational equations, radical equations, and quadratic equations and inequalities. | |  | 9. | use appropriate technology to enhance their mathematical thinking. | |  | 10. | communicate the mathematics of the topics of this course in both oral and written form. | |
| COURSE CONTENT:   1. Rational Expressions    1. Reducing    2. Multiplication and Division    3. Addition and Subtraction    4. Solving Equations with Rational Expressions 2. Powers, Roots, and Radicals    1. Rational Exponents    2. Simplifying Radicals    3. Solving Equations with Radicals 3. Quadratic Equations and Inequalities    1. Solving Quadratic Equations    2. Quadratic Functions    3. Solving and Graphing Quadratic Inequalities 4. Relations, Functions, and Graphs |
| INSTRUCTIONAL METHODOLOGY: |
| CLASSROOM |
| |  | | --- | | Lab Activity | | Individual Assistance | | Audiovisual (including PowerPoint or other multimedia) | | Computer Assisted Instruction | | Demonstration | | Discussion | | Requires a minimum of three (3) hours of work per unit including class time and homework. | |
| METHODS OF EVALUATING OBJECTIVES OR OUTCOMES: |
| Methods of evaluation to determine if students have met objectives may include, but are not limited to the following: |
| |  |  | | --- | --- | | CLASSROOM | EXPLANATION | | Class Activity | Demonstration of mathematical techniques in small groups and individually, as needed. | | Lab Activity | Problem solving using computer software or textbook that provides immediate feedback about the answers. | | Written Assignments | Problem solving using computer software or textbook that provides immediate feedback about the answers. | |
| |  |  | | --- | --- | | EXAMS | EXPLANATION | |  |  | | Comprehensive Final | Students will take a proctored final exam that covers materials from all topics from the course. A comprehensive final is required for all sections. Final exam will consist of a combination of problem types including problem solving, multiple choice, and true/false. | | Problem Solving | Assignments and tests will include problems that require the use of problem solving strategies. Types of problems will include, but are not restricted to, solving real world problems using the concepts learned in the class. | | Skill Demonstration | Assignments and tests will include skill demonstration problems including those simulating real world scenarios. | | Objective Test | All exams will be proctored and will include completely worked problems. Exams may also include some multiple choice and true/false. | | Quizzes | Quizzes may be used at the discretion of the instructor. | |  | | |
| MINIMUM STUDENT MATERIALS:  Textbook(s) similar to:   * Miller, J., M. O'Neill, & N. Hyde. *Intermediate Algebra.* 1st ed. New York: McGraw Hill, 2007. * Online materials such as ALEKS web-based learning system for mathematics. http://www.aleks.com/highered * Scientific Calculator   ADDITIONAL RESOURCES   * Scientific calculator or equivalent |
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