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| HARTNELL COLLEGE COURSE OUTLINE |
| CC Approval:  Board of Trustees: 11/10/2009 Last Revised: |
| DESIGNATOR & NUMBER: MAT 123L4 |
| COURSE TITLE: Intermediate Algebra Level 4 |
| 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 123L3: Intermediate Algebra Level 3 with a grade of "C" or better |
| COREQUISITE: |
| ADVISORY: |
| COURSE DESCRIPTION: The last course in a four-course sequence that is equivalent to MAT 123. Study of exponential and logarithmic functions, conic sections, nonlinear systems of equations and inequalities, sequences, series, and applications. Final examination will include topics from all levels (L1-L4) of the course. 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 linear equations and inequalities, quadratic equations and inequalities, logarithmic equations, and exponential equations and judge the reasonableness of the result. | |  | 2. | recognize, analyze and employ the most effective strategies to solve systems of equations and inequalities and judge the reasonableness of the result. | |  | 3. | compare and contrast the equations and graphs of exponential and logarithmic functions. | |  | 4. | compare and contrast the equations and graphs of the conic sections. | |  | 5. | simplify, manipulate, and evaluate expressions and functions. | |  | 6. | model real world situations found in various fields of study related to solve applications related to systems of equations and inequalities, exponential and logarithmic functions, and conic sections. | |  | 7. | solve applications related to systems of equations and inequalities, exponential and logarithmic functions, and conic sections. | |  | 8. | demonstrate the basic concepts of sequences and series and their applications. | |  | 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. Systems of Equations and Inequalities    1. nonlinear systems 2. Exponential and Logarithmic Functions    1. Inverse functions    2. Exponential and logaritmic graphs    3. Exponential and logarithmic equations 3. Conic Sections    1. Circles    2. Ellipses    3. Hyperbolas    4. Parabolas 4. Sequences and Series 5. Applications |
| 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. * Scientific Calculator. * Online materials such as ALEKS web-based learning system for mathematics. http://www.aleks.com/highered   ADDITIONAL RESOURCES   * Scientific calculator or equivalent |
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