**Midland College**  
*Syllabus*  
*2008-09*  
*MATH 1324*  
*Mathematics for Business & Social Sciences I*  
*3 Semester Credit Hours*  
*(3 Lecture/0 Lab)*

**COURSE DESCRIPTION:**  
This course is designed to enable students to solve elementary business involving the following topics: sets, linear equations and functions, elementary matrix theory, systems of linear equations and inequalities, linear programming by the simplex method, simple and compound interest, annuities, amortization, and bonds. Prerequisite: Math 1314, a “B” in Math 0391 or a satisfactory score on an algebra placement test. 

**TEXT AND MATERIALS:**  

A scientific calculator is needed for some sections and tests. 

**COURSE GOALS:**  
After successful completion of this course students will be able to use appropriate business and math terminology, work standard algebra problems, work linear algebra problems, do financial calculations, and solve applied problems (in business, social sciences, and life sciences). 

**CLASS POLICIES:**  
Students are expected to attend class regularly and participate by asking questions and discussing problems as the material is presented and reviewed. Students should ask for problems to be worked on the board and put questions on the board. They may be dropped if they have more than six absences in an MWF class, or more than four absences in a TR class. Students are expected to behave in a manner that will not interfere in the learning process. 

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the MC Student Handbook on this subject. 

**EVALUATION OF STUDENTS:**  
Students will be evaluated on their ability to successfully work test questions based on the topics. Problems will be assigned each class period. Each student is responsible for preparing each assignment for the beginning of the next class period. The assignments provide part of the practice necessary for success in the course. Tests will cover the assigned sections. The Final Examination will cover all sections of the course. The course grade will be determined by grades on tests and the Final Examination. You are expected to take all tests and the final examination at the scheduled time. **MAKE-UP TESTS ARE NOT GIVEN.**
Grades are assigned as follows:

\[
100 - 90 = A; \quad 89 - 80 = B; \\
79 - 70 = C; \quad 69 - 60 = D; \quad \text{and} \quad \text{Below 60} = F
\]

COURSE SCHEDULE:

The course will cover Chapters 1 – 7 at a rate of about four sections per week. The student will work assigned odd problems in the following topics:

1. FUNDAMENTALS of ALGEBRA
   1.1 The Real Numbers
   1.2 First-Degree Equations
   1.3 Polynomials
   1.4 Factoring
   1.5 Rational Expressions
   1.6 Exponents and Radicals
   1.7 Quadratic Equations
   Review

2. GRAPHS, EQUATIONS, and INEQUALITIES
   2.1 Graphs
   2.2 Slope and the Equations of a line
   2.3 Applications of Linear Equations
   2.4 Linear Inequalities
   2.5 Polynomial and Rational Inequalities
   Review

3. FUNCTIONS and GRAPHS
   3.1 Functions
   3.2 Graphs of Functions
   3.3 Applications of Linear Functions
   3.4 Quadratic Functions
   3.5 Applications of Quadratic Functions
   3.6 Polynomial Functions
   3.7 Rational Functions
   Review

4. EXPONENTIAL and LOGARITHMIC FUNCTIONS
   4.1 Exponential Functions
   4.2 Applications of Exponential Functions
   4.3 Logarithmic Functions
   4.4 Applications of Logarithmic Functions
   Review

5. MATHEMATICS of FINANCE
   5.1 Simple Interest and Discount
   5.2 Compound Interest
   5.3 Annuities
   5.4 Present Value of an Annuity; Amortization
   5.5 Applying Financial Formulas
   Review

6. SYSTEMS of LINEAR EQUATIONS and MATRICES
   6.1 Systems of Linear Equations
   6.2 The Gauss-Jordan Method
   6.3 Basic Matrix Operations
6.4 Multiplication of Matrices
6.5 Application of Matrices

7. LINEAR PROGRAMMING
7.1 Graphing Linear Inequalities in Two Variables
7.2 Linear Programming: The Graphic Method
7.3 Applications of Linear Programming
7.4 The Simplex Method: Maximization
7.5 Maximization Applications

FINAL EXAMINATION

INTELLECTUAL COMPETENCIES:

1. Reading – Understanding the material incorporated in the text used in this course will require the student to analyze and interpret various mathematical concepts.

2. Listening – The Primary teaching methods used in this course are discussion and lecture. Understanding the oral presentation of material will require the student to analyze and interpret various mathematical concepts.

3. Critical Thinking – Critical thinking, as exemplified by problem solving, is inherent in the study of any scientific discipline. Mathematical problems will be considered, discussed, and analyzed in this course.

ADA STATEMENT:
Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact the instructor as soon as possible. These conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations.

EXEMPLARY OBJECTIVES:

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<tr>
<th>Competency</th>
<th>Course Number</th>
<th>Course Title</th>
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<td>X X X X X</td>
<td>MATH 1324/1325</td>
<td>Finite Math/Business Calculus</td>
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Competencies:

1. To apply arithmetic, algebraic, geometric, higher-order thinking, and statistical methods to modeling and solving real-world situations.

2. To represent and evaluate basic mathematical information verbally, numerically, graphically and symbolically.

3. To expand mathematical reasoning skills and formal logic to develop convincing mathematical arguments.

4. To use appropriate technology to enhance mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of the results.
5. To interpret mathematical models such as formulas, graphs, tables and schematics and draw inferences from them.

6. To develop the view that mathematics is an evolving discipline, interrelated with human culture, and understanding its connections to the other disciplines.

INSTRUCTOR INFORMATION:

Name: 
Office: 
Phone: 
E-mail: 
Hours: 
Division Dean: Dr. Margaret Wade, 125 SF, 685-4615
Division Secretary: Norma Duran, 124 SF, 685-4612
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