Midland College  
Syllabus  
2008-09  
MATH 1325  
Mathematics for Business & Social Sciences II  
3 Semester Credit Hours  
(3 Lecture/0 Lab)

COURSE DESCRIPTION: This course is designed to enable students to learn quantitative methods for analyzing business methods. The topics to be studied are: Elementary probability theory, expected values, statistics, and elementary differential and integral calculus. Prerequisite: Requires a “C” or greater in Math 1324. Course Fee.


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 problems in probability and statistics, work problems in differential and integral calculus, 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 TT 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 ; 89 - 80 = B ; 79 - 70 = C ; 69 - 60 = D ; and Below 60 = F

COURSE SCHEDULE: See Attached Schedule.

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</td>
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<td>MATH 1324/1325 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.
To develop the view that mathematics is an evolving discipline, interrelated with human culture, and understanding its connections to the other disciplines.
The course will cover Chapters 8-13 (either starting in 8 or 11) at a rate of about three sections per week. The student will work assigned odd problems in the following topics:

8. SETS and PROBABILITY
   8.1 Sets
   8.2 Applications of Venn Diagrams
   8.3 Probability
   8.4 Basic Concepts of Probability
   8.5 Conditional Probability; Independent Events
   8.6 Bayes’ Formula

TEST

9. FURTHER TOPICS in PROBABILITY
   1 Permutations and Combinations
   2 Applications of Counting
   3 Binomial Probability
   4 Markov Chains
   5 Probability Distributions; Expected Value
   6 Decision Making.

TEST

11. INTRODUCTION to STATISTICS
   1 Frequency Distributions; Measures of Central Tendency
   2 Measures of Variation
   3 Normal Distributions
4 Binomial Distributions

TEST

11. LIMITS
1 Limits
2 Rates of Change
3 Tangent Lines and Derivatives
4 Techniques for Finding Derivatives
5 Derivatives of Products and Quotients
6 The Chain Rule
7 Derivatives of Exponential and Logarithmic Functions
8 Continuity and Differentiability

13. APPLICATIONS of the DERIVATIVE
1 Derivatives and Graphs
2 The Second Derivative
3 Optimizations Applications

FINAL EXAMINATION