

Math 108 - Modeling and Applications

(still College Algebra for the Lincoln Campus)
(3 credits)

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This course is part of Core Component 1: Foundational Areas of Knowledge

Mathematical Reasoning:

Description: Students will learn basic strategies of mathematical thought in order to analyze complex scenarios, make connections, solve problems, explain conclusions, and think more effectively.

Learning Outcomes - Students will work to:

- Analyze and model mathematical situations using a variety of techniques to solve problems effectively

- Communicate a clear understanding of conclusions

- Apply mathematical systems of thinking

Course Description - This is an algebra-based course. with an emphasis on practical applications. An examination of real-life models and their applications using algebra as a foundation. Students successfully completing this course will effectively use algebra and technology to analyze models of real-world phenomena; effectively read, interpret, and analyze problems; and gain quantitative literacy and confidence. The following topics will be covered in this course: Rational expressions, exponents, factoring, equations, inequalities, and functions.

Prerequisites - Enrollees must either pass the math competency test or pass MTH 090 with a "C-" or better or meet the competency requirement through established college guidelines.

Who should take this course - This course satisfies the Doane Plan requirement. This course is a prerequisite for MTH 115 Finite Math, required for Business and Accounting majors and suggested for ISM majors. Any student wanting to learn more mathematics is invited to take this class.

Text: Intermediate Algebra : A Text/Workbook, 9th Edition

Charles P. McKeague

Brooks/Cole

ISBN-10: 113-310364-2

ISBN-13: 978-1-13310364-6

A student solutions manual is available, but **not** required.

Course goals

1. To review and master mathematical skills involving real numbers, order, absolute value, polynomials, and linear equations.
2. To further develop an understanding and working knowledge of factoring, the rectangular coordinate system, linear relations, and parabolas.
3. To introduce and provide a knowledge base of rational expression, rational exponents, radicals, complex numbers, quadratic equations, inequalities, symmetry, functions and their combinations, and linear systems of equations in 2 and 3 variables.
4. To provide the algebraic background necessary for taking MTH 115, Finite Math.
5. To develop problem solving skills in a mathematical setting.

Class Agenda

1. The first 20 minutes will be used for asking questions of the previous week's material.
2. A closed book quiz will be administered
3. New material will be discussed.

Course Schedule

1st session - Introductions - Discussion of course objectives - Discussion of course requirements - Discussion of new material.

2nd session - Q&A session - Quiz #1 - Discussion of new material.

3rd session - Q&A session - Quiz #2 - Discussion of new material.

4th session - Q&A session - Quiz #3 - Discussion of new material.

5th session - Q&A session - Quiz #4 - Discussion of new material - Hand out take-home test #1.

6th session - Q&A session - Collect take-home test #1 Quiz #5 - Discussion of new material.

7th session - Q&A session - Quiz #6 - Discussion new material.

8th session - Q&A session - Quiz #7 - Discussion of new material . Hand out take-home test #2.

The Wednesday immediately following the last class

- take-home test #2 must be returned to the instructor.

Evaluation

Your grade will be based on the following percentage scale:

A+ = 97-100

A = 94-97

A- = 90-93

B+ = 87-89

B = 83-86

B- = 80-82

C+ = 77-79

C = 73-76

C- = 70-72

D+ = 67-69

D = 63-66

D- = 60-62

60% of your grade will be determined by 2 take home tests.

40% of your grade will be determined by 7 closed book quizzes.

Suggested problem sets will be handed out at each class.

Course Policies

It is very important that you attend all classes. In the event that you should have to miss a session, you will be responsible for getting the notes from another person in the class and to be ready to take the quiz and hand in the homework required for the next class.

Any student missing 3 or more classes will receive an F for the course.

If an emergency should arise and you need to miss class, please phone my work number, home number, or Doane college and leave a message, then the next day call me at home to make arrangements for making up any missed work.

The Doane College Academic Policy will be adhered to in this class. All tests, quizzes should be done without assistance from outside sources. Any violation of these policies can result in a loss of points for that particular test or quiz.