MATH 103: College Algebra Online Syllabus

Course Description

Linear and quadratic equations, radicals, exponents and logarithms, rational expressions, systems of linear equations, functional notation, graphing sequences, and series.

Credits: 4 Semester Credits

Prerequisite(s): MATH 102: Intermediate Algebra with a "C" or better, or a designated math placement test score

Delivery Method: Online

Course Objectives/Student Outcomes

Students will learn techniques for solving problems related to the topics above. Students will develop ideas and methods for applying techniques to find solutions or resolutions to questions requiting algebraic reasoning. A graphing calculator will be used in appropriate areas.

Instructor: Connie Blair

Office: Online

Office Hours: use the email tool within MyMathLab to communicate with the instructor. Course email messages will be checked daily, Monday through Friday.

Technical Problems: If you have a technical problem, contact the Distance Education office by calling 1-701-228-5479 or 1-888-918-5623 (toll-free) or the ND University System Moodle help desk: **1-866-940-0065**

Email: connie.blair@minotstateu.edu

Class Schedule: Online; homework and tests must be completed on or before due dates. Students may work ahead.

Learning Environment

Tis course utilizes and online learning system called MyMathLab. Through MyMathLab, students will have access to worked out explanations, textbook lessons, and video demonstrations.

Textbook

MyMathLab access code with access to *College Algebra: Graphs and Models*. 5th edition by Bittinger, Beecher, Ellenbogen, and Penna.

Order by e-mail at bookstore@dakotacollege.edu or by calling (701) 228-5458

Course Requirements

Learning algebra is an ***investment of time***. Algebra is learned best by practicing, reflecting, and practicing some more. While understanding the steps in the topic explanations and video presentations is a good first step, to truly master the material you should be able to look at a problem, know how to proceed and be able to carry out the steps **WITHOUT ASSISTANCE**. The multiple attempts allowed during independent practice (including homework and practice tests) in MyMathLab provides opportunities for you to get to that point. Passing grades on chapter tests demonstrate that you have indeed mastered the skills taught.

Evaluation

Homework—40% *Section Homework* will be submitted after each section in MyMathLab and can be found under the homework tab in MyMathLab. You may work ahead, but each homework

assignment must be completed by the due date listed. Grades of 80% or higher are required to proceed to the subsequent homework assignment. There is no limit to the number of times you can complete a homework assignment.
Homework Tests are to be completed at the end of each chapter and each question has a maximum of two attempts. While you may work ahead, you **must** complete a homework test by the due date listed. You will receive a 30% penalty for any homework test that is not completed by midnight on the due date.

Tests—60% Two proctored tests are administered over the sixteen-week term, a mid-term and a final exam. Students are allowed one attempt on each test. Students are responsible for finding a suitable proctor. Proctors must be approved by the instructor (the process is found on the homepage of this course) and must be able to proctor during the designated testing dates. Check the course calendar in Moodle for the dates of these exams. **There will be no make-ups.**

Based on North Dakota state policy, students must earn a grade of C or higher to be promoted to the next level of college mathematics. Letter grades are assigned using the following scale

A 89.50%-100%
B 79.50%-89.49%
C 69.50%-79.49%
D 59.50%-69.49%
F 59.49% or lower

Course Outline (subject to change)

specific dates for your course can be found in the course calendar in Moodle

Chapter R: Basic Concepts of Algebra
- R.1: The Real-Number System
- R.2: Integer Exponents, Scientific Notation, and Order of Operations
- R.3: Addition, Subtraction, and Multiplication of Polynomials
- R.4: Factoring
- R.5: The Basics of Equation Solving
- R.6: Rational Expressions
- R.7: Radical Notation and Rational Exponents

Chapter R Homework-Test

Chapter 1: Graphs, Functions, and Models
- 1.1: Introduction to Graphing
- 1.2: Functions and Graphs
- 1.3: Linear Functions, Slope, and Applications
- 1.4: Equations of Lines and Modeling
- 1.5: Linear Equations, Functions, Zeros, and Applications
- 1.6: Solving Linear Inequalities

Chapter 6: Systems of Equations and Matrices
- 6.1: Systems of Equations in Two Variables
- 6.7: Systems of Inequalities

Chapter 1&6 Homework-Test

Chapter 2: More on Functions
- 2.1: Increasing, Decreasing, and Piecewise Functions; Applications
- 2.2: The Algebra of Functions
- 2.3: The Composition of Functions
- 2.4: Symmetry

2.5: Transformations
2.6: Variation and Applications

Chapter 2 Homework-Test

Mid-Term Exam

Chapter 3: Quadratic Functions and Equations; Inequalities

3.1: The Complex Numbers
3.2: Quadratic Equations, Functions, Zeros, and Models
3.3: Analyzing Graphs of Quadratic Functions
3.4: Solving Rational Equations and Radical Equations
3.5: Solving Equations and Inequalities with Absolute Value

Chapter 3 Homework-Test

Chapter 4: Polynomial Functions and Rational Functions

4.1: Polynomial Functions and Modeling
4.2: Graphing Polynomial Functions
4.3: Polynomial Division; The Remainder Theorem and the Factor Theorem
4.4: Theorems and Zeros of Polynomial Functions
4.5: Rational Functions
4.6: Polynomial Inequalities and Rational Inequalities

Chapter 4: Homework-Test

Chapter 5: Exponential Functions and Logarithmic Functions

5.1: Inverse Functions
5.2: Exponential Functions and Graphs
5.3: Logarithmic Functions and Graphs
5.4: Properties of Logarithmic Functions
5.5: Solving Exponential Equations and Logarithmic Equations
5.6: Applications and Models: Growth and Decay; Compound Interest

Chapter 5: Homework-Test

Final Exam

General Education Goals/Objectives

- Goal 2: Demonstrates Knowledge and application of technology
    - Objective 2: Uses electronic resources for course related assignments and information
        - Skill 1: Selects appropriate program on the graphing calculator to solve problems
- Goal 3: Demonstrates the ability to convert, calculate, and analyze a variety of mathematical problems
    - Objective 1: Utilizes mathematical equations to solve problems
        - Skill 1: Solves equations and problems using the appropriate method
    - Objective 2: Applies practical application of mathematics to everyday life
        - Skill 3: Solves word problems

Relationship to Campus Theme

The student will use algebra to solve application problems in nature, economics, science, psychology, etc. The graphing calculator will be used to represent solutions visually and to find answers to complex problems.

Class Policies

- Regular participation is expected.
- Learning activities and evaluation will occur in the MyMathLab learning system and requires Internet connectivity.
- Students must find a test proctor and have the selection of the proctor approved by the instructor at least 2 weeks before both the midterm and the final exam.
- Students must take the midterm and final exams in a proctored setting on the designated dates.

- Tests will be available for a limited period of time. The maximum time for the midterm is 1 hour and the maximum time for the final exam is 2 hours.

Academic Integrity

The academic community is operated on the basis of honesty, integrity and fair play. It is the expectation that all students, as members of the college community, adhere to the highest levels of academic integrity. This means that

- Students are responsible for submitting their own work. Student work must not be plagiarized.
- Students must not work together on graded assignments without authorization from the instructor or get help from people, technological resources, textbooks, notes, etc. on examinations.

Violations of academic principles such as cheating, plagiarism or other academic improprieties will be handled using the guidelines outlined in the Student Handbook.

Disabilities and Special Needs

If you have a disability for which you need accommodation, contact the Learning Center to request disability support services.

Phone: (701) 228-5477
Toll Free: 1-888-918-5623