Fall 2024 **SYLLABUS for MA100 INTERMEDIATE ALGEBRA** **R. Balding**

Sections: MA100-02 (80232) 4 credits (10 - 10:50 am) MTWR Room: Jamrich 2315

Instructor: Richard Balding
Office: Jamrich Room 2225
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Office Hours:
11am -12:50 pm or by appointment

Teaching Assistant: Laura Walch (lwalch@nmu.edu)

Prerequisite: AT LEAST a **C−** in MA090 or a satisfactory score on the Math Placement Exam.

Required Materials:

(1) Text: ***Beginning & Intermediate Algebra*** (sixth Edition) by Miller, O'Neill, and Hyde
(2) NMU e-mail account which you must check DAILY
(3) Supplies: Pencil and eraser (**REQUIRED** for all tests, quizzes, graded assignments, and submitted homework), graph paper, ruler or straight edge
(4) Scientific calculator (fraction key useful) that is **without algebraic technology**. **A cell phone calculator is not acceptable**. (You do not need a graphing calculator for this course.)

Note: Laptops will not be used in class**.**

Additional Expectations:

- arrive for every class with required tools: textbook, portfolio (notebook,), pencil, and calculator
- keep cell phones and other electronic devices out of sight (meaning in your back pack) and on silent. (Please speak to the instructor if you anticipate receiving an emergency call during class.)
- be attentive and actively participate in class

COURSE DESCRIPTION: MA100 includes the study of rational, radical, and quadratic expressions, equations and functions, including graphing basic functions, domain and range. Emphasis will be placed on quadratic functions and an introduction to exponential and logarithmic functions. (Chapters 4 – 11 will be covered and part of 12.)

COURSE GOALS and PURPOSE: This course aims to help students (1) build a secure foundation in algebra skills through meaningful contextual problems and situations and (2) develop skills that will help them succeed in a college-level math class.

STUDENT LEARNING OUTCOMES FOR INTERMEDIATE ALGEBRA

Chapter 4: Systems of Linear Equations

1) Solve systems of linear equations
2) Use systems of linear equations to solve applied problems involving geometry, cost, investment, mixture, and distance

Chapter 5: Polynomials and Properties of Exponents

3) Perform operations on polynomials, including long division

Chapter 6: Factoring

4) Factor polynomials, including factoring quadratic trinomials use the ac-method and factoring the sum and difference of cubes
5) Solve equations using the zero product property
6) Solve applied problems using quadratic equations, including applications involving the Pythagorean Theorem

Chapter 7: Rational Expressions and Equations

7) Evaluate, perform operations, and simplify rational expressions
8) Solve equations with rational expressions

Chapter 8: Relations and Functions

9) Graph and interpret basic functions including the following types: linear, quadratic, cubic, absolute value, and square root. Include the domain and range in interval notation.
10) Translate basic graphs
11) Perform operations on and compose functions
12) Solve applied problems such as those involving variation

Chapter 9: More Equations and Inequalities

13) Solve and graph linear absolute value equations
14) Solve inequalities. Include compound, polynomial, rational, and absolute value inequalities
15) Graph linear inequalities in two dimensions

Chapter 10: Radicals and Complex Numbers

16) Evaluate, perform operations, and simplify radical expressions
17) Solve equations with radical expressions, including those with complex and extraneous solutions
18) Solve applied problems which involve the use of radical equations

Chapter 11: Quadratic Equations and Functions

19) Graph and interpret basic quadratic functions. Include domain and range in interval notation
20) Translate basic graphs of quadratic functions
21) Solve quadratic equations by the following methods: square root method, completing the square method, using the quadratic formula. Include complex solutions
22) Solve applied problems which involve the use of quadratic equations

Chapter 12: Exponential and Logarithmic Functions and Applications (As time permits)

23) Graph and interpret basic exponential and logarithmic functions. Include domain and range in interval notation
24) Solve exponential equations,
25) Solve applied problems using exponential equations
26) Use properties of logarithms to simplify expressions and solve equations

Learning outcomes will be assessed using assignments, quizzes, tests, and the final exam.

ATTENDANCE: Daily attendance is expected. Attendance will be recorded. Absence from class, for whatever reason, does not excuse a student from any class work or assignments missed. The student must assume full responsibility for making arrangements for any assignments missed due to the absence.

ASSIGNMENTS:

In order to be successful in a college course, a common guideline is to spend at least 2 hours outside of class for each hour of class time. **Since this is a 4 credit hour course, I strongly encourage you to spend at least 6 to 8 hours on this course outside of class each week** For the sake of your success, be sure to read the textbook for comprehension. Math is not learned by memorizing but by practicing. Therefore, doing homework is one of the most important ways you have to learn.

Reading and problems will be assigned each day. Take accurate and complete notes on the material presented in class. Your notes should include the complete solutions to any examples used during lecture/practice. Each homework assignment (and each section within a homework assignment) should start on a clean sheet of paper and start with a **heading** which includes your name, the date assigned, section, page numbers, and problem numbers assigned. In doing homework, copy the problem and SHOW YOUR WORK for each problem assigned. **Make corrections** as we discuss the problems. SUGGESTION: Do not erase your original work. Do your corrections in red ink. Several homework assignments (with varying point values) will be collected and graded throughout the semester. Late assignments will not be accepted!

Remember: **MATHEMATICS IS LEARNED BY DOING, NOT BY OBSERVING!**

TESTS & QUIZZES: All quizzes and tests must be written in pencil. Quizzes are worth 30 – 50 points each. Some may not be announced. No make-up quizzes will be given without PRIOR ARRANGEMENT. There will be 4 tests, each worth 50 to 100 points. Tests will cover assigned reading, concepts presented in class, notes and assigned homework. You must take tests and quizzes at their scheduled times. No make-up is possible for any test unless you notify me **before** test time. A documented excuse may be requested in order to take a make-up test. Grades on quizzes and tests are not "curved". There are no retakes or "do overs" on tests, so make sure you are ready !!!

FINAL EXAM: The ***comprehensive*** final exam will be worth 100 points (approximately).

WRITTEN WORK: For **written work** (quizzes, graded assignments, tests, final exam, homework), you will be graded not only on correctness, but also on clarity of work. If I cannot read your writing, then a correct answer **will not** get you full credit. You must show all steps. Just giving the answer will not earn full credit. Again, you must show all work. Word (application) problems can often be solved by just "thinking" about it. However, in this class you must use algebra and show all work to earn credit. **Reminder:** All quizzes, tests, graded assignments and the final exam must be done in pencil.

GRADES: To pass this course you must take all tests. Your course grade will be based on the total points earned on your quizzes, tests, graded assignments and final exam together with any bonus (extra credit) points earned. Grades on quizzes and tests are not "curved." **There are no "do overs" on tests or quizzes**.

The grading scale is: A: 90 - 100%; B: 80 - 89%; C: 70 - 79%; D: 60 - 69%; F: < 60%.
(**NOTE:** A grade of AT **LEAST C− (70%)** in MA100 is required for registration in MA111 or MA150.)

EXTRA HELP: My Office: during office hours or by appointment
Office Hours with your Teaching Assistant
Study groups are recommended.

The following websites contain short video lessons: www.amybarnsleymath.com (MA100 topics)

Remember: Teaching assistants meet with you individually or in small groups. Just email the TA or talk to them in class. Their job is to help improve student success.

DISABILITY SERVICES: If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1737 or disability@nmu.edu). Reasonable and effective accommodations and services will be provided to students if requests are made **in a timely manner**, with appropriate documentation, in accordance with federal, state, and University guidelines.
Here is the website for disability services: http://www.nmu.edu/disabilityservices/node/1

IMPORTANT DATES: (Full Semester Courses)

Drop:
Last day to drop a class with no course record (100% refund & no grade) is Tuesday, September 3, 2024 by 5 pm.
Drop Procedure: http://www.nmu.edu/records/adddropprocedure

Withdrawals:
Last day for course withdrawal is Friday December 6, 2024 by 5 pm. I will recommend withdrawal for any student earning below 60%. A withdrawal (W) grade and a failing (F) grade have the same effect on your full time status. The difference is that an F grade hurts your GPA, but a W grade does not. It always benefits you to get a W, instead of an F.
(**Remember:** A grade of AT **LEAST C−** (70%) in MA090 is required for registration in MA100.)

Withdrawal procedure: http://www.nmu.edu/records/node/19

Final Exam: Thursday, December 12, 10:00 am