

# MATH 102 Intermediate Algebra

Online

**Course Description:** This course covers the following topics: properties of the real number system, factoring, solving linear equations, quadratic equations, systems of equations, and inequalities, polynomial and rational expressions, exponents, and radicals.

**Credits:** 4 semester hour credits

**Prerequisite(s):** ASC 092 Beginning Algebra or appropriate math placement test score.

**Delivery Method:** Online

## Course Objectives/Student Outcomes:

It is expected that students will be able to

- Perform basic algebraic operations using positive and negative numbers, fractions, and exponents.
- Demonstrate an understanding of terms and rules used in algebra.
- Utilize problem-solving strategies to solve problems.
- Simplify expressions & solve equations and inequalities.
- Factor using greatest common factor, factor by grouping, and factor trinomials.
- Plot points, graph linear equations, and find slope of a line.
- Analyze and solve various types of math problems
- Utilize a hand-held calculator when solving algebra problems
- Gain the skills needed to participate in a college algebra course

**Instructor:** Jan Nahinurk

**Office:** Online

**Office Hours:** Use the eMail tool within the online course to communicate with the instructor. Course eMail messages will be checked daily, Monday through Friday. If you have a technical problem, contact the Distance Education office by calling 1-701-228-5479 or 1-888-918-5623 (toll-free).

**Email:** Use online course eMail tool.

**Class Schedule:** Online

## Textbooks:

Tobey, J. and J. Slater. *Beginning & Intermediate Algebra w/Student Study Pack*. 2<sup>nd</sup> ed. Prentice Hall. ISBN: 0-13-2187205

Other materials: The Student Study Pack is free with the purchase of a new textbook. The study pack includes the *Student Solution Manual*, online tutor center, and CD lecture videos. The study

pack can be purchased separately with a used text. The ISBN for the study pack alone is: 0-13-171159-8.

Order by e-mail: [bookcell@msub.nodak.edu](mailto:bookcell@msub.nodak.edu)

or Order online: [https://epayment.ndus.nodak.edu/C22800\\_ustores](https://epayment.ndus.nodak.edu/C22800_ustores)

### Course Requirements:

Learning algebra is an investment of time. Algebra is learned best by practice, reflect, and practice some more. Understanding the examples provided by the instructor and textbook is a good first step. However, to truly know the material, you should be able to look at a problem, know how to proceed, and carry out the steps **WITHOUT ASSISTANCE**. The independent practice and graded assignments provide opportunities for you to get to that point. Passing grades on quizzes and tests demonstrate that you have indeed learned the skills taught.

**Attendance: Regular participation is expected. Students should complete assignments as posted on the course calendar.**

**Independent Practice:** Answers to the odd problems are given in the back of the textbook. These problems are a good resource for independent practice. This practice work is not graded.

**Graded Assignments:** Graded assignments are found in the Lessons area of the course. Students can re-do these assignments multiple times to earn the best possible score. Only the highest score earned will be used in calculating the student's grade.

**Tests:** Five exams are spaced out over the course of the term. Students need to take the exams on one of the 2 days that each is available (see the course calendar). Exams will typically have 34 questions and must be completed within a 60 minute time period. No comprehensive exam will be given.

**Tentative Course Outline:** Consult the course calendar for assignment due dates.

WEEK 1: Section 3.1 Rectangular Coordinate Plane, Section 3.2 Graphing Linear Equations, Section 3.3 Slope of a Line

WEEK 2: Section 3.4 Writing the Equation of a Line, Section 3.5 Graphing Linear Inequalities

WEEK 3: Section 3.6 Functions, Review for Test 1

WEEK 4: Test 1, Section 4.1 Systems of Linear Equations in Two Variables

WEEK 5: Section 4.3 Applications of Systems of Linear Equations, Section 5.4 Multiplying Polynomials, Section 5.5 Multiplying Polynomials: Special Cases, Section 5.6 Dividing Polynomials

WEEK 6: Review for Test 2, Test 2

WEEK 7: Section 6.1 Removing a Common Factor, Section 6.2 Factoring by Grouping, Section 6.3 Factoring Trinomials of form  $x^2 + bx + c$ ,

WEEK 8: Section 6.4 Factoring Trinomials of form  $ax^2 + bx + c$ , Section 6.5 Special Cases of Factoring, Section 6.6 Review of all Factoring Methods  
 WEEK 9: Section 6.7 Solving Quadratic Equations by Factoring, Section 9.6 Compound Inequalities and Quadratic Inequalities  
 WEEK 10: Section 9.7 Absolute Value and Inequalities, Review for Test 3  
 WEEK 11: Test 3, Section 7.1 Simplifying Rational Expressions  
 WEEK 12: Section 7.2 Multiplying and Dividing Rational Expressions, Section 7.3 Adding and Subtracting Rational Expressions  
 WEEK 13: Section 7.5 Solving Equations with Rational Expressions, Section 7.6 Ratio, Proportion, and other Applications  
 WEEK 14: Review for Test 4, Test 4  
 WEEK 15: Appendix A.1 Interger Exponents, Square Roots, Order of Operations, & Scientific Notation, Section 8.1 Rational Exponents  
 WEEK 16: Section 8.2 Section 8.3  
 WEEK 17: Section 8.4 Section 8.5  
 WEEK 18: Review for Test 5, Test 5

### **Relationship to Campus Theme:**

This course develops algebra skills that are used to solve problems in science, technology, business, and social sciences.

### **Classroom Policies:**

- Regular participation is expected.
- All quizzes and exams can be taken on any computer with Internet access.
- Students need to set up or select an environment conducive for testing (e.g. distraction-free area at home, a computer lab at a library, etc.)
- Students can take the tests at any time between the given dates and times.
- Each quiz/test will be available for a limited period of time (15-60 minutes) depending upon the number of questions.

### **Evaluation:**

Grades are based on total points earned and include the points earned on practice exercises. Grades will be calculated by dividing total points earned by total points possible.

A--90-100%  
 B--80-89%  
 C--70-79%  
 D--60-69%  
 F--59% or lower

**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 cooperate on oral or written examinations or work together on evaluated assignments without authorization.

To learn how to avoid plagiarism in your work, review the website from Purdue University, [Is It Plagiarism Yet?](#)

Violations of academic principles such as cheating, plagiarism or other academic improprieties will be handled using the guidelines outlined in the [Student Handbook](#) on pages 18, 19, and 37.

### **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 or toll-free 1-888-918-5623.