

## Intermediate Algebra (TMTH 0375)



**Credit:** 3 semester credit hours (3 hours lecture)

**Prerequisite/Co-requisite:** Must be co-enrolled in TMTH 0165  
BASE NCBO (Algebra).

### Course Description

A study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations.

### Required Textbook and Materials

1. MyMathLab Standalone Access Code
  - a. May be purchased online at [www.mymathlab.com](http://www.mymathlab.com)
  - b. May be purchased at a local bookstore: **ISBN 032119991X**
2. Approved recommended calculators by individual course instructor.

### Course Objectives

Upon completion of this course, the student will be able to:

1. Define, represent, and perform operations on real and complex numbers.
2. Recognize, understand, and analyze features of a function.
3. Recognize and use algebraic (field) properties, concepts, procedures (including factoring), and algorithms to combine, transform, and evaluate absolute value, polynomial, radical, and rational expressions.
4. Identify and solve absolute value, polynomial, radical, and rational equations.
5. Identify and solve absolute value and linear inequalities.
6. Model, interpret, and justify mathematical ideas and concepts using multiple representations.
7. Connect and use multiple strands of mathematics in situations and problems, as well as in the study of other disciplines

### Course Outline

#### A. Module 1- Introduction to Real Numbers and Algebraic Expressions

1. The Real Numbers
2. Addition & Subtraction of Real Numbers
3. Applications Involving the Addition and Subtraction of Real Numbers
4. Multiplication & Division of Real Numbers
5. Applications Involving the Multiplication and Division of Real Numbers
6. Order of Operations
7. Introduction to Algebra
8. Properties of Real Numbers

#### B. Module 2-Solving Equations & Inequalities

1. Solving One-Step Equations with Addition or Subtraction
2. Solving One-Step Equations with Multiplication and Division
3. Solving Multi-Step Equations
4. Solving More Multi-Step Equations
5. Solving Absolute Value Equations
7. Introduction to Inequalities
8. Solving Inequalities
9. Solving Absolute Inequalities

**TMTH 0375**  
Course Syllabus

**C. Module 3- Polynomials**

1. Exponents
2. Rules of Exponents
4. Introduction to Polynomials
5. Evaluating Polynomials
6. Addition of Polynomials
7. Subtraction of Polynomials
8. Multiplication of Polynomials
9. More Multiplication of Polynomials
10. Division of Polynomials by Monomials
11. Division of Polynomials by Binomials

**D. Module 4- Factoring**

1. Factoring and the Greatest Common Factor
2. Factoring by Grouping
3. Factoring Trinomials
4. Factoring More Trinomials
5. Factoring Binomials

**C. Module 5- Rational Expressions & Equations**

1. Finding all Numbers for which a Rational Expression is Undefined
2. Simplifying Rational Expressions
3. Multiplying Rational Expressions
4. Dividing Rational Expressions
5. Finding the Least Common Denominator
6. Adding Rational Expressions
7. Subtracting Rational Expressions
9. Solving Rational Equations
10. Applications Using Rational Equations (The Work Principle, Motion Formulas & Proportions)

**Grade Scale**

<b>90 – 100</b>	<b>DA</b>
<b>80 – 89</b>	<b>DB</b>
<b>70 – 79</b>	<b>DC</b>
<b>0 – 69</b>	<b>DF</b>

**Course Evaluation**

Final grade will be calculated according to the following criteria:

Tests	60%
Comprehensive Final Exam	10%
Course Assignments	20%
Participation	10%

**D. Module 6- Radical Expressions & Equations**

1. Introduction to Radical Expressions
2. Simplifying Radical Expressions
3. Multiplying Radical Expressions
4. Dividing Square Roots
5. Rationalizing the Denominator
6. Adding and Subtracting Radical Expressions
7. Multiplying Radical Expressions (FOIL)
10. Solving One-Radical Equations

**E. Module 7- Complex Numbers**

1. Addition and Subtraction of Complex Numbers
2. Multiplication of Complex Numbers
3. Dividing Complex Numbers

**F. Module 8- Quadratic Equations**

1. Solving Quadratic Equations by Factoring
2. Solving Quadratic Equations using the Principle of Square Roots
3. Solving Quadratic Equations by Completing the Square
4. Solving Quadratic Equations using the Quadratic Formula

**G. Module 9-Functions**

1. Introduction to Functions
2. Function Notation

### **Course Requirements**

1. Attendance is mandatory.
2. The student must purchase all of the required course materials.
3. The student will be expected to have access to the Internet and a computer.
4. **Homework:** Problems done on MyMathLab. Homework will be completed online in the lab and off-site.
5. **Tests and Final Exam:** All tests will be closed book. Every student completing the course **MUST** take the final exam/TSI. These tests are proctored and will be taken in the class/lab. **Students are permitted to use approved recommended calculators and a standardized formula sheet (if any) when appropriate.** You will need to show all your work on your test paper/loose leaf notebook paper and turn it in when finished. It is your responsibility to give the paper to the instructor before submitting the test/leaving class. **Any student with no work on their paper, work that does not match the test taken, or with a submitted exam but no work turned in will be given a 0 for that test question(s).**
6. Additional course requirements as defined by the individual course instructor.

### **Course Policies**

1. Cheating of any kind will not be tolerated.
2. Additional class policies as defined by the individual course instructor.

### **Technical Requirements (for courses using Blackboard)**

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

[https://help.blackboard.com/en-us/Learn/9.1\\_2014\\_04/Student/015\\_Browser\\_Support/015\\_Browser\\_Support\\_Policy](https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy) A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

### **Disabilities Statement**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. You may also visit the online resource at <http://www.lit.edu/depts/stuserv/special/defaults.aspx>

### **Student Code of Conduct Statement**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu) or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

**Starfish**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

