Intermediate Algebra (TMTH 0375) ONLINE

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. A Pearson MyMathLab Standalone Access Code
   a. Once a student has access to this class in Blackboard, they will be able to access the Pearson website and purchase a code online directly from Pearson.
      OR
   b. May be purchased at a local bookstore:
      i. 18 Week Standalone Access Card: 9780136483151
      ii. 24 Month Standalone Access Card: 9780135189849
2. Approved recommended calculator 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
6. *Solving More Absolute Value Equations (extra topic; if time permits)*
7. Introduction to Inequalities
8. Solving Inequalities
9. Solving Absolute Inequalities

C. Module 3- Polynomials
1. Exponents
2. Rules of Exponents
3. *Scientific Notation (extra topic; if time permits)*
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

E. 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
8. *Additional Practice Adding and Subtracting Rational Expressions*
 ((extra topic; if time permits)
9. Solving Rational Equations
10. Applications Using Rational Equations (The Work Principle)
11. Applications Using Rational Equations (Motion Formula)
12. Applications Using Rational Equations (Proportions)

F. 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)
8. *Rationalizing a Binomial Denominator (((extra topic; if time permits)*
9. Solving One-Radical Equations

G. Module 7- Complex Numbers
1. Addition and Subtraction of Complex Numbers
2. Multiplication of Complex Numbers
3. Dividing Complex Numbers

H. 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

I. Module 9-Functions
1. Introduction to Functions
2. Function Notation

Grade Scale
90 – 100   DA
80 – 89   DB
70 – 79   DC
0 – 69   DF

Course Evaluation
Final grade will be calculated according to the following criteria:

Online Tests   60%
(Module tests will be taken on
MyMathLab using Respondus
LockdownBrowwser)
More information will be given by
the instructor.

Course Assignments   40%

Course Requirements
1.   The student must purchase all of the required course materials.
2.   The student will be expected to have access to the Internet and a computer with webcam and microphone.
3.   Blackboard logon and access to course a minimum of four times per week.
4.   Additional course requirements as defined by the individual course.

Course Policies
1. Cheating of any kind will <u>not</u> 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 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 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.