

## Jump Start Mathematics (TMTH 0114)



**Credit:** 1 semester credit hour (1 hour lecture)

**Prerequisite/Co-requisite:** Students scoring 346-349 on the TSI-Assessment placement test (effective Fall 2013).

### 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.

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This course is a preparatory course for MATH 1314 College Algebra. Each student will be working at their own *self-accelerated pace* with the understanding that **all** requirements for the course **must** be completed satisfactorily by the end of the scheduled semester.

### Required Textbook and Materials

1. MyMathLab Standalone Access Code
  - a. NOTE: Not necessary if code already purchased for MATH 1314
    - i. May be purchased online at [www.mymathlab.com](http://www.mymathlab.com)
    - ii. May be purchased at a local bookstore: **ISBN 032119991X**
2. A basic scientific calculator; *please check with your individual instructor as to the specific type of calculator required.*

### 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
  - 1. The Real Numbers
  - 2. Addition and Subtraction of Real Number
  - 3. Applications Involving the Addition and Subtraction of Real Numbers
  - 4. Multiplication and Division of Real Numbers
  - 5. Applications Involving the Multiplication and Division of Real Numbers
  - 6. Order of Operations
- B. Module 2
  - 1. Solving Multi-Step Linear Equations
  - 2. Solving More Multi-Step Linear Equations
  - 3. Solving Absolute Value Equations
  - 4. Solving More Absolute Value Equations
  - 5. Introduction to Inequalities
  - 6. Solving Inequalities
  - 7. Solving Absolute Value Inequalities
- C. Module 3
  - 1. Exponents
  - 2. Rules of Exponents
  - 3. Introduction to Polynomials
  - 4. Evaluating Polynomials
  - 5. Addition of Polynomials
  - 6. Subtraction of Polynomials
  - 7. Multiplication of Polynomials
  - 8. More Multiplication of Polynomials
  - 9. Division of Polynomials by Monomials
  - 10. Division of Polynomials by Binomials
- D. Module 4
  - 1. Factoring and the Greatest Common Factor
- E. Module 5
  - 2. Factoring by Grouping
  - 3. Factoring Trinomials
  - 4. Factoring More Trinomials
  - 5. Factoring Binomials
  - 6. Factoring: A General Strategy
  - 7. Solving Quadratic Equations by Factoring
- F. Module 6
  - 1. Finding all Numbers for which a Rational Expression is not defined
  - 2. Finding the Least Common Denominator
  - 3. Adding Rational Expressions
  - 4. Subtracting Rational Expressions
  - 5. Adding and Subtracting Rational Expressions
  - 6. Solving Rational Equations
- G. Module 7
  - 1. Simplifying Radical Expressions
  - 2. Rationalizing the Denominator
  - 3. Adding and Subtracting Radical Expressions
  - 4. Multiplying Radical Expressions
  - 5. Rationalizing a (Binomial) Denominator
  - 6. Solving Radical Equations
- H. Module 8
  - 1. Addition and Subtraction of Complex Numbers
  - 2. Multiplication of Complex Numbers
  - 3. Dividing Complex Numbers
- I. Module 9
  - 1. Solving Quadratic Equations using the Quadratic Formula
- I. Module 9
  - 1. Introduction to Functions
  - 2. Function Notation

## Grade Scale

70 – 100	<b>Satisfactory</b>
0 – 69	<b>Unsatisfactory</b>

**TMTH 0114**  
Course Syllabus

**Course Evaluation**

Final grades will be calculated according to the following criteria:

Course Assignments	90%
Participation (as defined by instructor)	10%

**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. 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.

## **TMTH 0114**

### Course Syllabus

#### **Course Schedule**

- This course is a non-semester length/non-course competency based option.
- It may be offered in a variety of formats.
- Each student will be working at their own self-accelerated pace with the understanding that **all** requirements for the course **must** be completed satisfactorily by the end of the scheduled semester time for this course.

**Contact information varies by instructor.**