

Advanced Developmental Mathematics (TMTH 0232)



Credit: 2 semester credit hour (2 hour lecture)

Prerequisite/Co-requisite:

- A score of 336-349 on the TSI-Assessment placement test.
- Must be co-enrolled in MATH 1332 Contemporary Mathematics.

Course Description

The course supports students in developing skills, strategies, and reasoning needed to succeed in mathematics, including communication and appropriate use of technology. Topics include the study of numeracy and the real number system; algebraic concepts, notation, and reasoning, quantitative relationships; mathematical models; and problem solving.

Required Textbook and Materials

1. MyMathLab Standalone Access Code
 - a. NOTE: Not necessary if code already purchased for MATH 1332
 - i. May be purchased online at www.mymathlab.com
 - ii. May be purchased at a local bookstore: **ISBN 032119991X**
2. A basic 6-function calculator (+, −, ÷, x, √, %) with a ± key

Course Objectives

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

1. Use appropriate symbolic notation and vocabulary to communicate, interpret, and explain mathematical concepts.
2. Define, represent, and perform operations on real numbers, applying numeric reasoning to investigate and describe quantitative relationships and solve real world problems in a variety of contexts.
3. Use algebraic reasoning to solve problems that require ratios, rates, percentages, and proportions in a variety of contexts using multiple representations.
4. Apply algebraic reasoning to manipulate expressions and equations to solve real world problems.
5. Use graphs, tables, and technology to analyze, interpret, and compare data sets.
6. Construct and use mathematics models in verbal, algebraic, graphical and tabular form to solve problems in a variety of contexts and to make predictions and decisions.

Course Outline

A. Module 1: Whole Numbers

1. Notation, Order, Rounding
2. Applications and Problem Solving
3. Exponential Notation; Order of Operations
4. Factors; Multiples; Divisibility
5. Prime vs. Composite; Prime Factorization
6. Greatest Common Factor and Least Common Multiple

B. Module 2: Fraction Notation

1. Notation and Simplifying
2. Multiplication and Division
3. Order; Addition and Subtraction
4. Mixed Numerals
5. Applications and Problem Solving
6. Order of Operations
7. Simple Probability

C. Module 3: Decimal Notation

1. Notation; Order
2. Rounding
3. Order of Operations
4. Fraction Notation; Decimal Notation
5. Applications and Problem Solving

D. Module 4: Percent Notation

1. Ratio and Proportion
2. Percent, Decimal, and Fraction Notation
3. Solving Percent Problems
4. Applications of Percent
5. Simple Interest

E. Module 5: Statistics

1. Measures of Central Tendency
2. Interpreting Data from Tables and Graphs

3. Interpreting and Drawing Bar Graphs and Line Graphs

4. Interpreting and Drawing Circle Graphs

F. Module 7: Introduction to Real Numbers and Algebraic Expressions

1. The Real Numbers
2. Addition and Subtraction of Real Numbers
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
7. Introduction to Algebra
8. Properties of Real Numbers
9. Algebraic Expressions
10. Simplifying Algebraic Expressions

G. Module 8: Solving Equations

1. Solving One-Step Equations with Addition or Subtraction
2. Solving One-Step Equations with Multiplication or Division
3. Solving Multi-Step Equations
4. Solving More Multi-Step Equations
5. Applications

H. Module 9: Additional Topics

1. Complex Numbers

Grade Scale

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

Course Evaluation

Final grades will be calculated according to the following criteria:

TMTH 0232 Course Assignments	40%
MATH 1332 Course Average	60%

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.
3. Blackboard and MyMathLab logon and access to course a minimum of four times per week.
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 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.

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Course Syllabus

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.

