



## ***Reid State Technical College***

### **I. COURSE PREFIX, NUMBER, TITLE**

MTH 098 D - Elementary Algebra

### **II. COURSE HOURS**

3 Theory credit hours  
0 Lab credit hours  
0 Clinical credit hours  
3 Contact hours

### **III. CLASS MEETING**

#### **DATES/TIMES/LOCATIONS**

9:10 a.m. – 10:25 a.m.  
Monday & Tuesday  
LIB 215

### **IV. CLINICAL DATES/TIMES/LOCATION (None)**

None

### **V. INSTRUCTOR, CONTACT INFORMATION, CONTACT POLICY, OFFICE HOURS/LOCATION**

Angelia Harrison  
Library, Room 209  
Office: (251)578-1313, EXT. 211  
Email: spreyear@rstc.edu  
Office Hours: See attached schedule.

### **VI. COURSE DESCRIPTION:**

This course is a review of the fundamental arithmetic and algebra operations. The topics include the numbers of ordinary arithmetic and their

The Alabama College System

Copyright 2004

All Rights Reserved

1

1

properties; integers and rational numbers; the solving of equations; polynomials and factoring; and an introduction to systems of equations and graphs.

## VII. PREREQUISITE(S)/CO-REQUISITE(S)

**Prerequisites:** MTH 090 or appropriate mathematics placement score

**Co-requisites:** None

## VIII. TEXTBOOK(S) AND OTHER LEARNING RESOURCES

Introductory Algebra by Bittinger (12<sup>th</sup> ed., Pearson Addison-Wesley) MyMathLab access code; scientific calculator, notebook

## IX. PROFESSIONAL COMPETENCIES/OBJECTIVES

Upon completion of this course, the successful student

- will:
- A. Simplify algebraic expressions.
  - B. Add, subtract, multiply, and divide real numbers, polynomials, rational expressions, and radical expressions.
  - C. Solve applied problems involving the operations of real numbers, linear equations, quadratic equations, rational equations, direct & inverse variation, and radical equations.
  - D. Identify the properties of real numbers.
  - E. Solve linear equations, formulas, inequalities in one variable, quadratic equations, rational equations, and radical equations.
  - F. Graph linear equations.
  - G. Find the equation of a line.
  - H. Graph inequalities in two variables.
  - I. Simplify expressions containing integer exponents.
  - J. Convert between standard notation and scientific notation for a real number.
  - K. Factor polynomials.
  - L. Solve systems of equations in two variables.

## X. OUTLINE OF MODULES

### A. Introduction to Real Numbers and Algebraic Expressions

1. Introduction to Algebra
2. The Real Numbers
3. Addition of Real Numbers
4. Subtraction of Real Numbers
5. Multiplication of Real Numbers
6. Division of Real Numbers
7. Properties of Real Numbers
8. Simplifying Expressions; Order of Operations

### B. Solving Equations and Inequalities

1. Solving Equations: The Addition Principle
2. Solving Equations: The Multiplication Principle
3. Using the Principles Together
4. Formulas
5. Applications of Percent
6. Applications and Problem Solving
7. Solving Inequalities
8. Applications and Problem Solving with Inequalities

### **C. Graphs of Linear Equations**

1. Graphs and Applications of Linear Equations
2. More with Graphing and Intercepts
3. Slope and Applications
4. Equations of Lines
5. Graphing Using the Slope and the y-Intercept
6. Parallel and Perpendicular Lines
7. Graphing Inequalities in Two Variables

### **D. Polynomials: Operations**

1. Integers as Exponents
2. Exponents and Scientific Notation
3. Introduction to Polynomials
4. Addition and Subtraction of Polynomials
5. Multiplication of Polynomials
6. Special Products
7. Operations with Polynomials in Several Variables
8. Division of Polynomials

### **E. Polynomials: Factoring**

1. Introduction to Factoring
2. Factoring Trinomials of the Type  $x^2 + bx + c$
3. Factoring  $ax^2 + bx + c$ ,  $a \neq 1$ : The FOIL Method
4. Factoring  $ax^2 + bx + c$ ,  $a \neq 1$ : The ac-Method
5. Factoring Trinomial Squares and Differences of Squares
6. Factoring: A General Strategy
7. Solving Quadratic Equations by Factoring
8. Applications of Quadratic Equations

### **F. Rational Expressions and Equations**

1. Multiplying and Simplifying Rational Expressions
2. Division and Reciprocals
3. Least Common Multiples and Denominators
4. Adding Rational Expressions
5. Subtracting Rational Expressions
6. Solving Rational Expressions
7. Applications Using Rational Equations and Proportions
8. Complex Rational Expressions
9. Direct and Inverse Variation

**G. Systems of Equations**

- 1. Systems of Equations in Two Variables
- 2. The Substitution Method
- 3. The Elimination Method
- 4. Applications and Problem Solving
- 5. Applications with Motion

**H. Radical Expressions and Equations**

- 1. Introduction to Radical Expressions
- 2. Multiplying and Simplifying with Radical Expressions
- 3. Quotients Involving Radical Expressions
- 4. Addition, Subtraction, and More Multiplication
- 5. Radical Equations
- 6. Applications with Right Triangles

**I. Quadratic Equations**

- 1. Introduction to Quadratic Equations
- 2. Solving Quadratic Equations by Completing the Square
- 3. The Quadratic Formula
- 4. Formulas
- 5. Applications and Problem Solving
- 6. Graphs of Quadratic Equations
- 7. Functions

**XI. EVALUATION AND ASSESSMENT**

Chapter Tests.....75%  
 Final Exam.....25%

WORKSHEETS: Worksheets will be assigned to reinforce material learned in each section covered. **Worksheets will be completed in class.** Worksheets will be averaged together at the end of the semester to make up another test grade. This grade cannot be dropped.

HOMEWORK: Homework will be assigned through MyMathLab. A deadline will be given for each assignment. If the student does not complete the assignment before the deadline, 10 pts will be deducted from the grade. Homework will be averaged together at the end of the semester to make up another test grade. This grade cannot be dropped.

CHAPTER TESTS: There will be at least FIVE (5) chapter tests given during the semester. The lowest chapter test grade will be dropped at the end of the semester for any student who does not have more than two absences. Three tardies constitute one absence.

FINAL EXAM: The final exam is comprehensive.

Grades will be awarded according to the standard scale:

90-
100.....A
80-
89.....B
70-
79.....C
60-69.....D
Below
60..F

## XII. ATTENDANCE

- a. Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid. Withdrawal from class can prohibit progression in nursing and allied health programs.
- b. Students are expected to attend **all** clinical rotations required for each course. Only excused absences will be considered for make up. However, due to limited clinical space and time, clinical make up days cannot be guaranteed. Failure to complete clinical rotations will prohibit progression in nursing and allied health programs.
- c. If a student accumulates five (5) consecutive absences and has not been contacted the instructor, then the student will be withdrawn from the class by the instructor.
- d. Excused absences require written documentation such as the following: doctor's excuse, obituary, or court summons. Other forms of documentation (i.e., phone call or email) may be accepted at the discretion of the instructor. If the student knows in advance that he or she will be absent, then it is her/her responsibility to inform the instructor.

**XIII. STATEMENT ON DISCRIMINATION/HARASSMENT**

The College and the Alabama Board of Education are committed to providing both employment and educational environments free of harassment or discrimination related to an individual's race, color, gender, religion, national origin, age, or disability. Such harassment is a violation of State Board of Education policy. Any practice or behavior that constitutes harassment is a violation of State Board of Education policy. Any practice or behavior that constitutes harassment or discrimination will not be tolerated.

**XIV. AMERICANS WITH DISABILITIES**

The Rehabilitation Act of 1973 (Section 504) and the American with Disabilities Act of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College. **Please contact the ADA representative.**

**XV. COURSE CALENDAR**

SPRING 2017					
MTH 098 – ELEMENTARY ALGEBRA					
OUTLINE – MONDAY & TUESDAY					
DAY	DATE	SECTION	TOPIC	PAGE	PROBLEMS
M	09 – JAN	Getting Started; Syllabus; MYMATHLAB orientation			
T	10 - JAN	1.1	Introduction to Algebra	48	MML
		1.2	The Real Numbers	59	MML
		1.3	Addition of Real Numbers	67	MML
		1.4	Subtraction of Real Numbers	73	MML
M	16 - JAN	<b>MLK DAY – NO CLASS!!!</b>			
T	17 - JAN	1.5	Multiplication of Real Numbers	83	MML
		1.6	Division of Real Numbers	92	MML
		1.7	Properties of Real Numbers	104	MML
		1.8	Simplifying Expressions and Order of Operations	113	MML
M	23 – JAN	<b>REVIEW</b>			

T	24 – JAN	<b>TEST #1: CHAPTER 1 INTRODUCTION TO REAL NUMBERS &amp; ALGEBRAIC EXPRESSIONS</b>			
M	30 – JAN	2.1	Solving Equations: The Addition Principle	130	MML
		2.2	Solving Equations: The Multiplication Principle	136	MML
		2.3	Using the Principles Together	145	MML
		2.4	Formulas	153	MML
T	31 - JAN	2.5	Applications of Percent	163	MML
		2.6	Applications and Problem Solving	179	MML
		2.7	Solving Inequalities	192	MML
		2.8	Applications and Problem Solving with Inequalities	199	MML
M	06 – FEB	<b>REVIEW</b>			
T	07 – FEB	<b>TEST #2: CHAPTER 2 SOLVING EQUATIONS &amp; INEQUALITIES</b>			
M	13 – FEB	3.1	Graphs & Applications of Linear Equations	224	MML
		3.2	More with Graphing and Intercepts	237	MML
		3.3	Slope and Applications	248	MML
		3.5	Graphing Using the Slope and the y-Intercept	263	MML
T	14 – FEB	3.4	Equations of Lines	256	MML
		3.6	Parallel and Perpendicular Lines	270	MML
		3.7	Graphing Inequalities in Two Variables	277	MML
M	20 – FEB	<b>REVIEW</b>			
T	21 – FEB	<b>TEST #3: CHAPTER 3 GRAPHS OF LINEAR EQUATIONS</b>			

M	27 - FEB	<b>FACULTY DUTY DAY – NO CLASS!!</b>				
T	28 - FEB	<b>FACULTY DUTY DAY – NO CLASS!!</b>				
M	06 - MAR	4.1	Integers as Exponents	300	MML	
		4.2	Exponents and Scientific Notation	310	MML	
		4.3	Introduction to Polynomials	323	MML	
		4.4	Addition and Subtractions of Polynomials	332	MML	
W	24 - FEB	4.5	Multiplication of Polynomials	343	MML	
		4.6	Special Products	353	MML	
		4.7	Operations with Polynomials in Several Variables	361	MML	
		4.8	Division of Polynomials	370	MML	
TH	25 - FEB	<b>REVIEW</b>				
W	02 – MAR	<b>TEST #4: CHAPTER 4 POLYNOMIALS: OPERATIONS</b>				
TH	03 - MAR	5.1	Introduction to Factoring	389	MML	
		5.2	Factoring Trinomials of the Type $x^2 + bx + c$	397	MML	
		5.3	Factoring $ax^2 + bx + c$ , $a \neq 1$	407	MML	
		5.4	More Factoring Trinomials	412	MML	
W	09 – MAR	5.5	Factoring Trinomial Squares and Differences of Squares	423	MML	
		5.6	Factoring: A General Strategy	432	MML	
		5.7	Solving Quadratic Equations by Factoring	441	MML	
		5.8	Applications of Quadratic Equations	450	MML	
TH	10 – MAR	<b>REVIEW</b>				
W	16 – MAR	<b>TEST #5: CHAPTER 5 POLYNOMIALS: FACTORING</b>				
TH	17 - MAR	6.1	Multiplying and Simplifying Rational Expressions	472	MML	
		6.2	Division and Reciprocals	478	MML	



		6.3	Least Common Multiples and Denominators	483	MML
		6.4	Adding Rational Expressions	489	MML
		6.5	Subtracting Rational Expressions	497	MML

W	23 – MAR	6.6	Complex Rational Expressions	507	MML
		6.7	Solving Rational Equations	513	MML
		6.8	Applications Using Rational Equations & Proportions	525	MML
		6.9	Direct & Inverse Variation	536	MML
TH	24 - MAR	<b>REVIEW</b> <b>TEST #6: CHAPTER 6</b> <b>RATIONAL EXPRESSIONS &amp; EQUATIONS</b>			
W	30 – MAR	<b>SPRING BREAK</b> <b>NO CLASSES</b>			
TH	31 – MAR	<b>SPRING BREAK</b> <b>NO CLASSES</b>			
W	06 – APR	7.1	Systems of Equations in Two Variables	556	MML
		7.2	The Substitution Method	563	MML
		7.3	The Elimination Method	571	MML
TH	07 - APR	7.4	Applications & Problem Solving	582	MML
		7.5	Applications with Motion	592	MML
W	13 – APR	<b>REVIEW</b>			
TH	14 – APR	<b>TEST #7: CHAPTER 7</b> <b>SOLVING SYSTEMS OF EQUATIONS</b>			
W	20 – APR	8.1	Introduction to Radical Expressions	609	MML
TH	21 – APR	8.2	Multiplying & Simplifying with Radical Expressions	616	MML
		8.3	Quotients Involving Radical Expressions	624	MML
W	27 – APR	<b>FINAL REVIEW</b>			
TH	28 – APR	<b>FINAL EXAM</b>			

**XVI. STUDENT ACKNOWLEDGEMENT FORM**

I have been presented with my personal copy of the MTH 098 Course Syllabus. I have read and studied the MTH 098 course standards and requirements contained in the course syllabus. I understand that to receive credit and an acceptable grade in MTH 098, I must fulfill all of these requirements.

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print Your Name: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

HOME PHONE: \_\_\_\_\_

CELL PHONE: \_\_\_\_\_

WORK PHONE: \_\_\_\_\_