

**Course Information**

<b>Course Title</b>	Beginning Algebra
<b>Course Prefix, Num. and Title</b>	MATH 0308
<b>Division</b>	Math & Physical Sciences
<b>Department</b>	Math/College Readiness Math
<b>Course Type</b>	Academic General Education Course (from ACGM, but not WCJC Core)
<b>Course Catalog Description</b>	<p>Topics include real number operations, solving linear equations and inequalities, the introduction to the rectangular coordinate system, graphing linear equations and inequalities, properties of exponents, performing operations with polynomials, and factoring polynomials.</p> <p>This course must be successfully completed with a "C" or better.</p>
<b>Pre-Requisites</b>	TSI Placement
<b>Co-Requisites</b>	None

**Semester Credit Hours**

<b>Total Semester Credit Hours (SCH): Lecture Hours:</b>	3:3:0
<b>Lab/Other Hours</b>	
<b>Equated Pay Hours</b>	3
<b>Lab/Other Hours Breakdown: Lab Hours</b>	0
<b>Lab/Other Hours Breakdown: Clinical Hours</b>	0
<b>Lab/Other Hours Breakdown: Practicum Hours</b>	0
<b>Other Hours Breakdown</b>	0

**Approval Signatures**

<b>Title</b>	<b>Signature</b>	<b>Date</b>
<b>Prepared by:</b>		
<b>Department Head:</b>		
<b>Division Chair:</b>		
<b>Dean/VPI:</b>		
<b>Approved by CIR:</b>		

## Additional Course Information

**Topical Outline:** Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

### Unit 1 – The Set of Real Numbers

- 1.1 – Fractions
- 1.2 – Introduction to Algebra and the Set of Real Numbers
- 1.3 – Exponents, Square Roots, and the Order of Operations
- 10.3 – Simplifying Radical Expressions
- 1.4 – Addition of Real Numbers
- 1.5 – Subtraction of Real Numbers
- 1.6 – Multiplication and Division of Real Numbers
- 1.7 – Properties of Real Numbers and Simplifying Expressions

### Unit 2 – Linear Equations and Inequalities

- 2.1 – Addition, Subtraction, Multiplication and Division Properties of Equality
- 2.2 – Solving Linear Equations
- 2.3 – Linear Equations: Clearing Fractions and Decimals
- 2.4 – Application of Linear Equations: Introduction to Problem Solving
- 2.6 – Formulas and Applications of Geometry
- 2.8 – Solving Linear Inequalities

### Unit 3 – Graphing Linear Equations in Two Variables

- 3.1 – Rectangular Coordinate System
- 3.2 – Linear Equations in Two Variables
- 3.3 – Slope of a Line and Rate of Change
- 3.4 – Slope-Intercept Form of a Linear Equation
- 3.5 – Point-Slope Formula

### Unit 4 – Polynomials and Properties of Exponents

- 5.1 – Multiplying and Dividing Expressions with Common Bases
- 5.2 – More Properties of Exponents
- 5.3 – Definitions of  $b^0$  and  $b^{-n}$
- 5.5 – Addition and Subtraction of Polynomials
- 5.6 – Multiplication of Polynomials and Special Products
- 5.7 – Division of Polynomials

### Unit 5 – Factoring Polynomials

- 6.1 – Greatest Common Factor and Factoring by Grouping
- 6.2 – Factoring Trinomials of the Form  $x^2 + bx + c$
- 6.3 – Factoring Trinomial: Trial and Error Method
- 6.4 – Factoring Trinomial: AC-Method
- 6.5 – Difference of Squares and Perfect Square Trinomials

### Unit 6 – Relations and Functions

- 8.1 – Introduction to Relations
- 8.2 – Introduction to Functions

## Course Learning Outcomes:

### Learning Outcomes – Upon successful completion of this course, students will:

1. Perform operations on real numbers.
2. Perform operations on and evaluate algebraic expressions, including polynomials.
3. Understand properties of and demonstrate the ability to write, solve, and graph linear equations and linear inequalities in one variable.
4. Understand properties of and demonstrate the ability to solve and graph linear equations in two variables.
5. Apply the rules for exponents to simplify expressions.
6. Understand and apply factoring rules to polynomial expressions.
7. Solve mathematic and scientific formulas for a specified variable.
8. Understand characteristics of, identify, and evaluate functions.

### Methods of Assessment:

Midterm Exam (Required)

Final Exam (Required)

Other Methods of Assessment:

- Hour Exams
- Homework
- Quizzes
- Short Answer
- Discussion Board
- Participation
- Projects

### Required text(s), optional text(s) and/or materials to be supplied by the student:

“Beginning and Intermediate Algebra” by Miller, McGraw Hill, 6<sup>th</sup> edition.

Students must have computer access to the WCJC website, their WCJC student email and online accounts. WCJC has open computer labs, with internet access, on all campuses for students to use.

### Suggested Course Maximum:

30

### List any specific or physical requirements beyond a typical classroom required to teach the course.

None

**Course Requirements/Grading System:** Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

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|---|--------|
| A. Midterm Exam   | 10-15% |
| B. Departmental Final Exam*   | 10-15% |
| C. Other Course Requirements, such as Homework, Quizzes, Unit Tests | 70-80% |

\*Department Policy – Students must score 60% or above on the Departmental Final Exam in order to pass MATH 0308 Beginning Algebra.

- A = 100-90
- B = 89-80
- C = 79-70
- D = 69-60
- F = 59 or below

### Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course.** Attach the Core Curriculum Review Forms
  - Critical Thinking
  - Communication
  - Empirical & Quantitative Skills
  - Teamwork
  - Social Responsibility
  - Personal Responsibility
- WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist