

Department: Mathematics

Course Number and Title: MAT 100 Beginning Algebra

Number of Credit Hours: 3

Prerequisites: MAT 090 or Assessment

Catalog Course Description:

This course focuses on basic algebra fundamentals and is designed to prepare students for the Intermediate Algebra course.

Required Course Methodologies/Instructional Equipment to be utilized as determined by the Course Lead Instructor:

- Periodic exams should be given and a comprehensive final examination is required.
- Calculators are permissible.

The format used by the instructor for these “requirements” and the grading methods are at the discretion of the individual instructor.

Required Course Content and Direction:

Course Competencies:

Students in this course will be able to:

1. Add, subtract, multiply, and divide natural numbers, following the order of operations.
2. Add, subtract, multiply, and divide integers, following the order of operations.
3. Translate English into algebraic expressions and equations.
4. Add, subtract, multiply, and divide rational numbers, following the order of operations.
5. Solve simple equations involving integers, fractions, or decimal coefficients.
6. Solve selected word problems.
7. Solve and graph linear equations.
8. Solve and graph linear inequalities.
9. Add, subtract, multiply, and divide polynomials.
10. Factor selected polynomials.
11. Add, subtract, multiply, and divide rational expressions.
12. Solve equations with rational expressions in them.

Planned Sequence of Topics and/or Learning Activities:

The following is the minimum amount of course material to be covered by the instructor:

- Real Numbers and Variables
- Equations and Inequalities
- Applied Problems
- Exponents and Polynomials
- Factoring
- Rational Expressions and Equations
- Graphing

Assessment Methods for Providing Evidence for Course Competencies:

Informal assessment such as oral communication among students and between teacher and students. Formal assessment consists of open-ended questions on in class problems, homework problems, tests and quizzes.

Reference, Resource, and Learning Materials that must be used [if available]:

A calculator and a departmentally selected textbook are used.

Course-Level Curriculum Map:

Course Competencies and the curriculum expectations in this course:

1. Add, subtract, multiply, and divide natural numbers, following the order of operations.
Curriculum Expectations: Worked on at the exceptional, ADVANCED, foremost, mastery level
2. Add, subtract, multiply, and divide integers, following the order of operations.
Curriculum Expectations: Worked on at the exceptional, ADVANCED, foremost, mastery level
3. Translate English into algebraic expressions and equations.
Curriculum Expectations: Concept developed BETWEEN, at an Intermediate, moderate level
4. Add, subtract, multiply, and divide rational numbers, following the order of operations.
Curriculum Expectations: Concept developed BETWEEN, at an Intermediate, moderate level
5. Solve simple equations involving integers, fractions, or decimal coefficients.
Curriculum Expectations: Concept developed BETWEEN, at an Intermediate, moderate level
6. Solve selected word problems.
Curriculum Expectations: Worked on at the basic, elementary, CENTRAL, fundamental level
7. Solve and graph linear equations.
Curriculum Expectations: Concept developed BETWEEN, at an Intermediate, moderate level
8. Solve and graph linear inequalities.
Curriculum Expectations: Worked on at the basic, elementary, CENTRAL, fundamental level
9. Add, subtract, multiply, and divide polynomials.
Curriculum Expectations: Concept developed BETWEEN, at an Intermediate, moderate level
10. Factor selected polynomials.
Curriculum Expectations: Concept developed BETWEEN, at an Intermediate, moderate level
11. Add, subtract, multiply, and divide rational expressions.
Curriculum Expectations: Worked on at the basic, elementary, CENTRAL, fundamental level
12. Solve equations with rational expressions in them.
Curriculum Expectations: Worked on at the basic, elementary, CENTRAL, fundamental level

Assessment Methods by Course Competency:

Each Course Competency and the methods of assessment that may be used:

1. Add, subtract, multiply, and divide natural numbers, following the order of operations.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
2. Add, subtract, multiply, and divide integers, following the order of operations.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.

3. Translate English into algebraic expressions and equations.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
4. Add, subtract, multiply, and divide rational numbers, following the order of operations.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
5. Solve simple equations involving integers, fractions, or decimal coefficients.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
6. Solve selected word problems.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
7. Solve and graph linear equations.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
8. Solve and graph linear inequalities.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
9. Add, subtract, multiply, and divide polynomials.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
10. Factor selected polynomials.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
11. Add, subtract, multiply, and divide rational expressions.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.
12. Solve equations with rational expressions in them.
Methods of Assessment: Tests, Exams, and Quizzes; Instructor Observations; In-Class Feedback; and Regular Assignments.

(Other assessment methods may be applicable. Please contact the lead instructor for approval.)

Checklist of Other Items to be Included on the First Day Handout for this Course:

- HCC's Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition
- HCC's A Note on Harassment, Discrimination and Sexual Misconduct (Title IX statement)
- Academic Integrity statement
- A link to [HCC's Student Code of Conduct and Student Handbook](https://highlandcc.edu/pages/handbook) (https://highlandcc.edu/pages/handbook)