MAT099 | **Introductory Algebra**

Course Texts

No need to track down a textbook; this text is provided digitally as part of the course enrollment:

Messersmith, Sherri, et al. *Introductory Algebra with P.O.W.E.R. Learning*, 2nd edition. Mcgraw Hill, 2018.

Course Description

Introductory Algebra takes the learner through topics that teach the basics of algebra. Real-life scenarios students can relate to are used to teach difficult concepts and topics. After a pre-algebra review, this course focuses on the basics of algebra and includes math vocabulary and notation, operations with numbers, fractions, decimals, percentages, and quadratic equations. Students also learn to read and interpret graphs.

Learning Outcomes

After completing this course, students will be able to:

1. Communicate using the appropriate mathematical vocabulary and notation
2. Perform operations with real numbers, fractions, decimals, and percentages
3. Evaluate arithmetic and exponential expressions, algebraic expressions, and equations
4. Translate word problems into algebraic expressions and vice versa
5. Use the order of operations and the properties of real numbers to simplify algebraic expressions
6. Solve and graph linear equations and linear inequalities
7. Solve word problems involving formulas and linear equations
8. Graph lines in the coordinate plane and determine the slope and intercepts of a linear equation
9. Solve a system of linear equations by using the graphing method, substitution method, and the addition method
10. Perform operations including factoring techniques with polynomials.
11. Use various factoring techniques
12. Solve equations with rational expressions
13. Perform operations including solving equations with radicals and exponents
14. Solve quadratic equations
15. Define the Pythagorean theorem and apply it by solving quadratic equations
16. Evaluate functions and use function notation
17. Read and interpret graphs

Course Prerequisites

There are no prerequisites to take Introduction to Algebra.

Academic Integrity Statement

Academic integrity is the pursuit of scholarly activity in an honest, truthful and responsible manner. Violations of academic integrity include, but are not limited to, plagiarism, cheating, fabrication and academic misconduct. Failure to comply with the Academic Integrity Policy can result in a failure and/or zero on the attempted assignment/examination, a removal from the course, disqualification to enroll in future courses, and/or revocation of an academic transcript.

Course Completion Policy

In order for a course to be considered complete, **all required coursework must be attempted, submitted, and graded.** Required coursework consists of graded assignments. Any Academic Integrity Policy violations may prevent a course from being considered complete.

Assessment Types

StraighterLine courses may include any combination of the assessment types described below. Review the descriptions to learn about each type, then review the Course Evaluation Criteria to understand how your learning will be measured in this course.

Benchmarks
Benchmarks test your mastery of course concepts. You have 3 attempts, and your highest score counts.
Note: Cumulative Benchmarks (final exams) only allow 1 attempt.

Capstones
Capstones are project-based assessments that help you apply concepts to real-world scenarios. You have 2 attempts, and your highest score counts.

Checkpoints
Checkpoints are quick knowledge checks on important course concepts. All are open-book, and most have 1-3 attempts.

AI Use-Case Policies

StraighterLine Capstone assessments operate under one of three AI Use-Case Policies. These designations are selected intentionally to support learners in developing digital literacy, ethical reasoning, and authentic communication skills. Each model requires students to engage meaningfully with the course outcomes while adhering to academic standards.

Independent Work Requirement: Capstones with this designation must be completed independently without using AI tools. The goal is for learners to showcase their own understanding and skills without AI assistance. Students are expected to generate and submit original work developed solely through their own reasoning and effort.

AI-Assisted Planning Option: Capstones with this designation may allow AI tools to support brainstorming and assessment planning. If allowed, students will be asked to document any AI assistance by noting how it informed their work. Documentation must be included within the assignment or in a designated reflection field. Examples include describing how an AI tool helped organize an outline, generate ideas, or surface sources for further exploration.

AI-Integration Requirement: Capstones with this designation require AI tools as part of the learning process. Students will be asked to reflect upon their AI interactions and AI contributions to the assessment. Reflections must include which tools were used, how they were used, and what insights students gained from the process. This promotes transparency, ethical use, and metacognitive skill-building.

Course Evaluation Criteria

Your score provides a percentage score and letter grade for each course. A passing percentage is 70% or higher.

There are a total of 1000 points in the course:

Assessment	Points
Checkpoint 1: Pre-Algebra Review	5
Checkpoint 2: Real Numbers	5
Checkpoint 3: Operations with Real Numbers	5
Checkpoint 4: Properties of Real Numbers	5
Checkpoint 5: Solving Linear Equations	5
Checkpoint 6: Applications of Linear Equations	5
Benchmark 1: Checkpoints 1-6	105
Checkpoint 7: Rules of Exponents and Polynomials	5
Benchmark 2: Checkpoint 7	105
Benchmark 3: Checkpoints 1-7	210
Checkpoint 8: Factoring Polynomials	5
Checkpoint 9: Rational Expressions	5
Checkpoint 10: Roots and Radicals	5
Benchmark 4: Checkpoints 8-10	105
Checkpoint 11: Quadratic Equations	5
Checkpoint 12: Linear Equations in Two Variables	5
Checkpoint 13: Systems of Linear Equations	5
Checkpoint 14: Functions and Interpreting Graphs	5
Benchmark 5: Checkpoints 11-14	105
Benchmark 6: Checkpoints 1-14	300
Total	1000

Course Roadmap

This roadmap provides an overview of the checkpoints and lessons covered in this course.

Checkpoint 1: Pre-Algebra Review

- Textbook: Checkpoint 1 Reading Assignment: Chapter 1 Section 1.1
- Pre-algebra Review
- Practice Exercises

Checkpoint 2: Real Numbers

- Textbook: Checkpoint 2 Reading Assignment: Chapter 1 Section 1.2-1.4
- Real Numbers

Checkpoint 3: Operations with Real Numbers

- Textbook: Checkpoint 3 Reading Assignment: Chapter 1 Section 1.5-1.6
- Operations with Real Numbers
- Practice Exercises

Checkpoint 4: Properties of Real Numbers

- Textbook: Checkpoint 4 Reading Assignment: Chapter 1 Section 1.7-1.8
- Properties of Real Numbers
- Practice Exercises

Checkpoint 5: Solving Linear Equations

- Textbook: Checkpoint 5 Reading Assignment: Chapter 2 Section 2.1-2.2
- Solving Linear equations and Inequalities in One Variable
- Practice Exercises

Checkpoint 6: Applications of Linear Equations

- Textbook: Checkpoint 6 Reading Assignment: Chapter 2 Section 2.3-2.7
- Applications of Linear Equations and Linear Inequalities in One Variable
- Practice Exercises

Checkpoint 7: Rules of Exponents and Polynomials

- Textbook: Checkpoint 8 Reading Assignment: Chapter 5 Section 5.1-5.4
- Textbook: Checkpoint 8 Reading Assignment: Chapter 6 Section 6.1-6.4
- Polynomials
- Practice Exercises

Checkpoint 8: Factoring Polynomials

- Textbook: Checkpoint 9 Reading Assignment: Chapter 7 Section 7.1-7.7
- Factoring
- Practice Exercises

Checkpoint 9: Rational Expressions

- Textbook: Checkpoint 10 Reading Assignment Chapter 8 Section 8.1-8.7
- Rational Expressions
- Practice Exercises

Checkpoint 10: Roots and Radicals

- Textbook: Checkpoint 11 Reading Assignment: Chapter 9 Section 9.1-9.7
- Powers and Roots
- Practice Exercises

Checkpoint 11: Quadratic Equations

- Textbook: Checkpoint 12 Reading Assignment: Chapter 10 Section 10.1-10.5
- Quadratic Equations
- Practice Exercises

Checkpoint 12: Linear Equations in Two Variables

- Textbook: Checkpoint 7 Reading Assignment: Chapter 3 Section 3.1-3.5
- Linear Equations in Two Variables
- Practice Exercises

Checkpoint 13: Systems of Linear Equations

- Textbook: Checkpoint 13 Reading Assignment: Chapter 4 Section 4.1-4.4
- Systems of Linear Equations
- Practice Exercises

Checkpoint 14: Functions and Interpreting Graphs

- Textbook: Checkpoint 14 Reading Assignment: Chapter 3 Section 3.2-3.3
- Textbook: Checkpoint 14 Reading Assignment: Chapter 3 Section 3.6
- Functions and Interpreting Graphs
- Practice Exercises

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