

Integrated Mathematics II

Pre-Requisites: Integrated Mathematics I

Credits: 1.0

Estimated Completion Time: 2 segments / 32-36 weeks

Description

One day in 2580 B.C.E., a very serious architect stood in a dusty desert with a set of plans. His plans called for creating a structure 480 feet tall, with a square base and triangular sides, using stone blocks weighing two tons each. The Pharaoh wanted the job done right. The better this architect understood geometry, the better his chances were for staying alive. Algebra and geometry are everywhere, not just in pyramids. Engineers use them to build highways and bridges. Artists use them to create perspective in their paintings, and mapmakers help travelers find things using the points located on grids. Throughout this course, students travel a mathematical highway illuminated by spatial relationships, reasoning, connections, and problem solving.

Major Topics and Concepts

Module 01: Review of Algebra

- Algebra 1 Review
- Introduction to Functions
- Module One Quiz
- Graphing Linear Equations and Inequalities
- Writing the Equation of a Line
- Comparing Functions

Module 02: Rational, Complex, and Polynomials

- Rational Exponents
- Properties of Rational Exponents
- Solving Radical Equations
- Complex Numbers
- Operations of Complex Numbers

Module 03: Factoring and Quadratics

- Review of Polynomials
- Polynomial Operations
- Greatest Common Factors and Special Products
- Factoring by Grouping
- Sum and Difference of Cubes
- Graphing Quadratics
- Completing the Square
- Solving Quadratic Equations
- Solving Quadratic Equations with Complex Solutions
- Investigating Quadratics

Module 04: Systems of Equations and Inequalities

- Solving Systems of Equations Algebraically
- Solving Systems of Nonlinear Equations
- Graphing Systems of Linear Equations
- Graphing Systems of Nonlinear Equations
- Exponential Functions
- Logarithmic Functions

Module 05: Statistics

- Events and Outcomes in a Sample Space
- Independent Probability
- Conditional Probability
- Pythagoras, Trigonometry, and Quadrants

Module 06: Proofs of Theorems

- Line and Angle Proofs
- Triangle Proofs
- Parallelogram Proofs

Module 07: Dilations and Similarity

- Dilations
- Similar Polygons
- Similar Triangles

Module 08: Triangle Similarity Proofs

- Triangle Congruence and Similarity
- Using the Coordinates
- Coordinate Applications
- Formulas
- Applications of Volume

Module 09: Right Triangles and Trigonometry

- Solving Right Triangles
- Trigonometric Ratios
- Applying Trigonometric Ratios

Module 10: Circles

- Properties of a Circle
- Inscribed and Circumscribed Circles
- Applications of Circles

Grading Policy

Besides engaging students in challenging curriculum, FLVS Global guides students to reflect on their learning and to evaluate their progress through a variety of assessments. Assessments can be in the form of self-checks, practice lessons, multiple choice questions, writing assignments, projects, research papers, essays, labs, oral assessments, and discussions.