



STEPHEN F. AUSTIN STATE UNIVERSITY

Department of Mathematics and Statistics

MATH 0304 – Algebraic Foundations Course Syllabus

Course Description: MATH 0304 is a non-credit developmental mathematics course designed for students who are not TSI-complete in mathematics. This course focuses on building foundational algebraic and quantitative reasoning skills necessary for success in college-level mathematics courses such as **MATH 1314 (College Algebra)**, **MATH 1324 (Mathematics for Business and Social Sciences)**, or **MATH 1350 (Fundamentals of Mathematics I)** with a corequisite component.

Students will review and apply operations with real numbers, algebraic expressions, and equations; explore linear relationships and their graphs; and develop proficiency in problem solving, critical thinking, and mathematical communication. The course emphasizes conceptual understanding, procedural fluency, and strategies for independent learning and study.

This is a **non-credit, non-transferable course** that serves as a prerequisite or corequisite support for MATH 1332 or MATH 1342.

Credit hours: 3

Course Outline: Units may include—

1. Understanding and applying the **order of operations**, **sets of numbers**, and **absolute value**.
2. Performing arithmetic operations (addition, subtraction, multiplication, and division) on **integers**, **fractions**, and **decimals**.
3. Applying the **properties of real numbers** to simplify expressions and solve equations.
4. Solving **linear equations** and **inequalities** using addition and multiplication properties of equality.
5. Applying formulas for **percent**, **perimeter**, and **area** to solve contextual problems.
6. Using the **rectangular coordinate system** to graph ordered pairs and **linear equations**, including interpretation of **slope**, **intercepts**, and **slope-intercept form**.
7. Applying **exponent properties** and **scientific notation** to simplify and evaluate expressions.
8. Performing **operations on polynomials**, including addition, subtraction, multiplication, and factoring (GCF, trinomials, and differences of squares).
9. Demonstrating the ability to organize, communicate, and document mathematical reasoning clearly and effectively.

Student Learning Outcomes (SLO): Upon successful completion of this course, students will be able to:

1. Perform operations on integers, fractions, and decimals without a calculator.
2. Apply geometric formulas for perimeter and area.
3. Use order of operations to evaluate expressions.
4. Solve percent problems and applications.
5. Apply properties of real numbers to simplify expressions.
6. Simplify and evaluate variable expressions.
7. Solve linear equations, inequalities, and related applications.
8. Graph linear functions using the rectangular coordinate system.
9. Use exponent rules and perform operations on polynomials.
10. Factor polynomials, including trinomials and special products.
11. Communicate mathematical reasoning in clear, organized form.
12. Apply effective study and self-assessment strategies.

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

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