



STEPHEN F. AUSTIN STATE UNIVERSITY

Department of Mathematics and Statistics

MATH 0314 – College Algebra Corequisite Support Course Syllabus

Course Description: This course provides just-in-time academic support for students enrolled concurrently in **MATH 1314 College Algebra**. It is designed to strengthen algebraic reasoning, enhance problem-solving abilities, and deepen conceptual understanding essential for success in the college-level course. Course content is closely aligned with the College Algebra curriculum and includes targeted review and reinforcement of foundational skills related to linear, quadratic, rational, exponential, and logarithmic functions.

Instruction emphasizes the development of mathematical confidence, persistence, and effective study habits through active engagement and guided practice. Students participate in collaborative learning experiences and receive individualized support to address specific areas of need. By integrating concept review with real-time application, the course enables students to connect foundational knowledge to more advanced algebraic concepts and to approach mathematics with greater clarity and self-assurance.

A strong emphasis is placed on **mathematical communication—both oral and written—through structured problem discussions, explanation of reasoning, and presentation of solutions using appropriate mathematical notation and organization**. Students also cultivate **math-specific study skills**, including effective note-taking, error analysis, and time management strategies tailored to the demands of quantitative reasoning. **Graphing calculators are not permitted; students must show all work in an organized and clearly communicated manner.**

Credit hours: 3

Course Corequisites: MATH 1314

Course Outline: Units may include (aligned with MATH 1314 topics) –

1. **Review of Algebra Fundamentals:** Operations, factoring, rational expressions, and equations.
2. **Linear Functions:** Graphs, slope, intercepts, and applications.
3. **Quadratic Functions:** Vertex form, transformations, and solving methods.
4. **Polynomial and Rational Functions:** End behavior, zeros, and asymptotes.
5. **Exponential and Logarithmic Functions:** Properties, equations, and applications.
6. **Problem-Solving Strategies and Study Skills:** Mathematical communication, error analysis, and test preparation.

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

1. **Apply foundational algebraic skills** to solve equations, simplify expressions, and manipulate rational expressions while demonstrating clear and organized written work.
2. **Analyze and interpret linear functions** by graphing, calculating slope and intercepts, and explaining reasoning both orally and in writing.
3. **Solve quadratic functions** using multiple methods (factoring, vertex form, quadratic formula) and justify solution strategies with logical, step-by-step explanations.
4. **Evaluate polynomial and rational functions** by determining zeros, end behavior, and asymptotes, while communicating analytical reasoning in an organized and structured format.
5. **Solve exponential and logarithmic equations** and apply them to real-world problems, demonstrating the ability to interpret results and explain solution strategies clearly.
6. **Develop problem-solving strategies** by analyzing errors, connecting multiple representations, and applying reasoning to non-routine problems.
7. **Demonstrate effective mathematical communication and organization** in all written and oral work, including the use of proper notation and clear presentation of solutions.
8. **Apply math-specific study skills** such as note-taking, error analysis, test preparation, and time management to improve accuracy, persistence, and performance in College Algebra.

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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