South Central College

EAP 0070 English for Introductory Algebra

Common Course Outline

Course Information

Description This course provides specialized language and cultural support for multilingual students concurrently enrolled in any section of Math 0075. Students whose first language is not English are explicitly instructed in American English mathematical terms related to Introductory Algebra, including the cultural context and language used in algebraic expressions, functions, polynomials, exponents, solving and graphing linear equalities and inequalities, interpreting data in graphical form, factoring polynomials, simplifying rational expressions, and solving and simplifying radical and rational equations. Students are encouraged to activate and build on previous learning by comparing the way they were taught math in their other languages with the way they are taught in the U.S. (Co-requisites: Concurrent enrollment in Math 0075 and EAP 0080 or 0090, and/or a score of 108 or less on the Accuplacer ESL Reading Test.)

Total Credits 2

Total Hours 32

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2/32

Pre/Corequisites

Corequisite Concurrent enrollment in Math 0075 and EAP 0080 or 0090, and/or a score of 108 or less on the Accuplacer ESL Reading Test.)

Institutional Core Competencies

Civic Engagement and Social Responsibility - Students will be able to demonstrate the ability to engage in the social responsibilities expected of a community member.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Use guiding questions to make connections beyond the lesson to broader math applications in English.

Learning Objectives

Apply the four operations to solve real-life math problems.
Defend math applications and reasoning to others.
Apply conceptual understanding of decimals to real life situations.
Apply conceptual understanding of fractions to real life situations.
Apply conceptual understanding of ratios and proportions to real life situations.
Apply knowledge of the basics of algebra to solve real-life math problems.
Apply knowledge of algebraic language to solve real-life math problems.

2. Develop and connect background knowledge skills and conceptual understanding from studies in other languages to new knowledge.

Learning Objectives

Compare the descriptions of the operations of addition, subtraction, multiplication, and division between English and another language, using excerpts from textbooks and online materials.
Compare the ways of showing the relationship between numbers and variations, evaluating an expression, simplifying expressions, evaluating expressions with negative exponents, and simplifying radicals in expressions, between mathematics in the U.S. and another country.
Compare the ways of translating number, age, motion and work problems into equations, between the U.S. and another country's mathematics.

3. Preview the problem in English to determine problem-solving strategies and tolls and predict general solutions.

Learning Objectives

Use English to solve problems with whole numbers in English.
Solve one-step mathematical problems using the four operations with whole numbers.
Estimate to predict and check solutions that require exact answers and solve problems for which an estimate is an appropriate solution.
Determine whether a problem calls for replacing variables with given values, grouping like terms and numbers, evaluating expressions with negative exponents, or using properties of square roots to simplify radicals.
Describe how to organize the facts and unknowns of a word problem to help solve the problem.

4. Develop conceptual understanding of mathematical problems using visual representations, think-alouds, and collaboration in English.

Learning Objectives

Apply new vocabulary to mathematical tasks and discussions.
Translate expressions, equations, and inequalities from symbols to words and from words to symbols.
Isolate the facts and unknowns from a word problem into a graphic organizer.

5. Identify the component parts and usage of new English words to interpret their meanings.

Learning Objectives

Determine the meaning of unknown vocabulary using context clues, word forms, and parts of speech.
Analyze mathematical terms using Greek and Latin roots, prefixes, and affixes.

6. Use context clues to interpret new English words.

Learning Objectives

Use context clues to describe the meaning of key English vocabulary used in arithmetic and algebra.
Guess the meaning of new words using visual clues.
Practice using new words correctly in context while explaining the process by which one arrived at an answer.

7. Utilitze English and first language vocabulary-building resources.

Learning Objectives

Define key mathematical terms in English, noting the meaning in another language when possible.
Translate mathematical terms in English to their equivalencies in other languages of previous mathematical learning.
Use online bilingual dictionaries effectively to create a math vocabulary notebook for current and future use.

8. Prepare for math applications by identifying the problem type and the problem-solving strategies and tools in English.

Learning Objectives

Identify whether a problem is calling for ordering decimals, identification of place values, rounding of decimals, or comparison of decimals.
Organize information from a word problem into a chart and solve.
Solve number puzzles and age problems by translating words to symbols.
Solve motion, value, and work problems in English.
Rewrite formulas in English to isolate the variable you are solving for.

9. Organize the problem using visual, symbolic, and written representations common to American mathematics.

Learning Objectives

Identify and use the symbols used for decimal points, greater than, less than, and equals.
Identify and use the symbols of addition, subtraction, multiplication, and division.
Identify and use the symbol for fraction bar.
Identify and use the symbols for percent, whole, and unknown variable.
Identify and use the symbols for variable, expression, negative, negation symbol, grouping symbol, negative exponents, and square root.
Identify and use the symbols for rate, time, and distance.