CSKLS 372 Course Outline as of Summer 2019

CATALOG INFORMATION

Dept and Nbr: CSKLS 372　　　　Title: PRE-ALGEBRA
Full Title: Pre-Algebra
Last Reviewed: 1/25/2021

Units			Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.50		Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.50		Lab Scheduled	2.00	6	Lab Scheduled	35.00
			Contact DHR	0		Contact DHR	0
			Contact Total	5.00		Contact Total	87.50
			Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00　　　　Total Student Learning Hours: 192.50

Title 5 Category:　AA Degree Non-Applicable
Grading:　　　　　Grade or P/NP
Repeatability:　　00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly:　　　　CSKL 372

Catalog Description:
This course covers operations with signed numbers, rules of powers and square roots applied to real numbers, using simplified, evaluated and scientific notation; geometric formulas to solve perimeters, areas, and volumes of figures; and algebraic expressions and linear equations. Emphasis is placed on critical thinking and demonstrating strategies as well as finding solutions. Regularly scheduled computer-assisted lab assignments reinforce or supplement lecture topics.

Prerequisites/Corequisites:
Completion of CSKLS 371 or appropriate placement based on AB 705 mandates

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: This course covers operations with signed numbers, rules of powers and square roots applied to real numbers, using simplified, evaluated, and scientific notation; geometric formulas to solve perimeters, areas, and volumes of figures; and algebraic expressions and linear equations. Emphasis is placed on critical thinking and demonstrating strategies as well as finding

solutions. Regularly scheduled computer-assisted lab assignments reinforce or supplement lecture topics.   (Grade or P/NP)
Prerequisites/Corequisites: Completion of CSKLS 371 or appropriate placement based on AB 705 mandates
Recommended:
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
CSU GE:	**Transfer Area**		Effective:	Inactive:
IGETC:	**Transfer Area**		Effective:	Inactive:
CSU Transfer:		Effective:	Inactive:	
UC Transfer:		Effective:	Inactive:	

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Simplify and evaluate arithmetic and algebraic expressions by using mathematical algorithms.
2. Translate words and phrases into mathematical expressions and equations.
3. Apply critical thinking strategies and math concepts to set up and solve pre-algebra and geometry problems.
4. Demonstrate fluency with appropriate mathematical terminology and symbols.
5. Solve linear equations with one variable.
6. Use academic literacy skills to improve studying and learning.

Objectives:
Upon completion of the course, students will be able to:
1. Use advanced computation skills in addition, subtraction, multiplication, and division with real numbers.
2. Solve complex word problems involving multiple operations.
3. Solve pre-algebra problems including simple linear equations with real numbers.
4. Use formulas to solve problems with common geometric shapes (perimeter, circumference, area and volume).
5. Use a scientific calculator for multiple operations, including square roots and scientific notation.
6. Identify support services for math offered in College Skills labs,Tutorial Center, and instructor's student consultation hours.
7. Apply study and test-taking techniques to course material and other college courses.

Topics and Scope:

I. Advanced arithmetic skills development without a calculator
  A. The four basic operations (addition, subtraction, multiplication and division) of positive whole numbers, fractions and decimals
  B. Order of operations (grouping symbols, exponents, multiplication and division, addition and subtraction)
  C. Conversions and comparisons of fractions, decimals, percents
  D. Translating words and phrases to set up and solve math expressions with positive numbers

II. Rational numbers
  A. Introduction to the number line, integers, rationals, absolute value, and inequalities
  B. Advanced skill development of the four basic operations as applied to the rational numbers without a calculator
  C. Order of operations
  D. Translating words and phrases to set up and solve math expressions with rational numbers

III. Exponents
  A. Rules of exponents: zero exponent, product rule, quotient rule, negative exponents, power rule
  B. Use of scientific calculator
  C. Scientific notation
  D. Square roots
      1. Rational and irrational solutions
      2. Application of the Pythagorean Theorem
  E. Word problems involving exponents (exponential growth and decay)

IV. Geometry
  A. Application of formulas to solve perimeter and area problems
      1. Four basic shapes (rectangle, square, triangle, and circle)
      2. Trapezoid and parallelogram
      3. Composite figures made from these shapes
  B. Application of formulas to solve volume problems
      1. Prisms, cubes, cylinders, cones, pyramids, rectangular solids, spheres
      2. Composite figures made from these shapes
  C. Solving word problems involving perimeter, area, and volume

V. Algebra expressions and equations
  A. Introduction to algebraic vocabulary: variable, constant, term, coefficient, degree, expression, equation, polynomials
  B. Simplifying and evaluating algebraic expressions
  C. Solving linear equations
      1. Single-step equations (addition/subtraction or multiplication/division)
      2. Multi-step equations (addition/subtraction and multiplication/division)
      3. Equations with variables on both sides
      4. Equations with fractions, decimals, and percents

VI. Lab work

Assignment:

1. 25 - 35 homework assignments
2. 28-34 quizzes
3. 4 - 6 unit tests
4. Computer lab and/or online assignments (30 - 60 problems per week)
5. Comprehensive final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, lab assignments	Problem solving 20 - 40%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Lab quizzes, unit tests, final exam	Exams 50 - 70%

Other: Includes any assessment tools that do not logically fit into the above categories.

Lecture and lab participation	Other Category 0 - 10%

Representative Textbooks and Materials:
Prealgebra for College Students, 2nd edition, Matthew Greaney, Thomson Publishing, 2006 (Classic)
Instructor prepared materials