GAVILAN ☙ COLLEGE

5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: MATH 411   DIVISION: 10   ALSO LISTED AS:

TERM EFFECTIVE: Summer 2017   CURRICULUM APPROVAL DATE: 02/27/2017

SHORT TITLE: INTEGRATED PRE-ALGEBRA

LONG TITLE: Integrated Pre-Algebra

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
7	18	Lecture:	7	126
		Lab:	0	0
		Other:	0	0
		Total:	7	126

COURSE DESCRIPTION:

This course is a blend of standard Elements of Arithmetic and Pre-Algebra courses with the focus on operations with whole numbers, fractions, percentages, proportions, and signed numbers. Algebraic topics such as variables, expressions, and solving basic linear equations and applications are introduced. This is a pass/no pass course where pass is given for mastery of the above topics. The mastery level is set by the department. ADVISORY: MATH 414

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: C - Credit - Degree Non Applicable

GRADING MODES
        P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:
        02 - Lecture and/or discussion
        03 - Lecture/Laboratory
        04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:
1.   Perform basic operations with whole numbers, integers, fractions and decimals w/o aid of a calculator.

Measure: Exams, Homework , labwork
PLO:
ILO: 2,7
GE-LO: B3

2.   Implement the critical thinking strategies to solve the real life problems and analyze/evaluate the solution with respect to the context of the problem.
Measure: Exams, quizzes, group work. and homework.
PLO:
ILO: 2,7
GE-LO: B3

3.   Determine and implement an appropriate method of solution for real life problems
Measure: Exams, quizzes, group work. and homework.
PLO:
ILO: 2,4, 7
GE-LO: B3

4.   Simplify algebraic expressions and solve linear equations involving integers, fractions, and decimals.
Measure: Exams, quizzes, lab work. and homework.
PLO:
ILO: 2, 4, 7
GE-LO: B3

5.   Set up and solve applied problems involving proportion, ratio, and percents.
Measure: Exams, quizzes, group work. and homework.
PLO:
ILO: 2,4,7
GE-LO: B3

6.   Identify and analyze basic geometric shapes and be able to compute their perimeters, areas, and volumes.
Measure: Exams, quizzes, group work. and homework.
PLO:
ILO: 2,7
GE-LO: B3

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS
Curriculum Approval Date: 02/27/2017
6 Hours
Content: Basic operation with whole numbers
Student Performance Objectives (SPO): Students will be able to add, subtract, divide, and
multiply whole numbers
Out-of-Class Assignments: Homework assignment: practice handouts for practicing the operations with whole numbers.
6 Hours
Content: Operations with real numbers

/integers..

Student Performance Objectives (SPO): Students will be able apply all the operations to both positive and negative numbers

Out-of-Class Assignments: Homework assignment: extensive practice

with signed numbers.

10 Hours

Content: Order of operations and application problems

Student Performance Objectives (SPO): Students will be able to evaluate a numerical expression involving integers

and solve application problems without a calculator.

Out-of-Class Assignments: Homework assignment: extensive practice in evaluating expression involving multiple operations.

11 Hours

Content:

Introduce concept of variable. Simplifying algebraic expressions. Solving basic linear equations. Test #1 - Operations with real numbers and expressions/equations

Student Performance Objectives (SPO):

Students will be able to translate English statements into symbolic math expressions, simplify algebraic expressions, and solve basic linear equations w/o calculator. Students will be able solve basic

application problems using linear equations.

Out-of-Class Assignments: Classwork handout: translation from English into math symbols and vice versa + application problems. Homework Assignment:

Simplifying algebraic expressions and solving equations.

6 Hours

Content: Developing problem-solving strategies. Introducing application problems, investment problems, and application to geometry.

Student Performance Objectives (SPO):

Students will be able to identify key terms in word problems and key concepts in terms of input and output. Students will be able to solve basic investment and number problems, plus applications to geometry.

Out-of-Class Assignments: Classwork handout: classic word problems.

7 Hours

Content: Introduction to fractions. Simplifying fractions. Basic Principle of Fractions, improper fractions and mixed numbers.

Multiplying and Dividing Fractions.

Student Performance Objectives (SPO): Students will be able to simplify fractions, convert between mixed numbers and improper fractions. Students will multiply and

divide fractions.

Out-of-Class Assignments: Homework assignment: Simplifying, dividing and multiplying fractions. Classwork Handout: intense practice with conversion of improper fractions to mixed

numbers and vice versa + rules for divisibility of numbers.

10 Hours

Content: Lowest Common Denominators. Adding/subtracting fractions and mixed numbers. Order of operations

Student Performance

Objectives (SPO): Students will be able to find LCD. add and subtract fractions + apply the order of operations to the problems with multiple operations

Out-of-Class Assignments: Homework assignment:

adding/subtracting fractions and order of operations. Classwork Handout: intense practice in establishing LCD

3 Hours

Content: Applying the rules for positive and negative numbers to fractions.

Student Performance Objectives (SPO): Students will be able to add/subtract, multiply/divide positive and negative fractions and mixed numbers.

Out-of-Class Assignments: Classwork assignment: fraction group project. Homework assignment: Review of operations with Fractions worksheet.

3 Hours

Content: Solving basic word problems involving fractions.

Student Performance Objectives (SPO): Students will be able to solve real-life problems involving fractions.

Out-of-Class Assignments: Classwork handout: word problems using fractions in real-life applications.

10 Hours

Content: Simplifying complex fractions, simplifying algebraic expressions involving fractions, and solving basic linear equations containing fractions. Test #2- Fractions

Student Performance Objectives (SPO): Students will be able to simplify complex fractions and algebraic expressions with fractions and solve the equations and application problems involving fractions.

Out-of-Class Assignments: Homework assignment: complex fractions and equations involving fractions.

11

Hours

Content: Basic operations with decimals. Order of operations. Conversion between decimals and fractions. Equations with decimals. Test #3 - Decimals.

Student Performance Objectives (SPO):

Students will be able to add, subtract, divide, and multiply operations with decimals and convert between decimals and fractions + evaluate the expressions involving decimals and solve basic decimal equations.

Out-of-Class Assignments: Classwork group handout: operations with positive and negative decimals. Homework assignment: order of operations, algebraic expressions and equations involving decimals+ application problems.

7 Hours

Content: Ratios, Rates, Unit Rates, and Proportions. Application Problems with proportions.

Student Performance Objectives (SPO): Students will be able to

simplify a ratio, compute a rate, determine a proportionality and solve an application problem

Out-of-Class Assignments: Homework Assignment: Finding the Unit rate and solving proportions.

9 Hours

Content: Percentage. Relation between Fraction and Percent and Decimal and Percent. Solving basic percent Problems. Test #4 - Unit Rates + Proportions + Percentage

Student Performance Objectives

(SPO): Students will be able to convert percentage into decimal or fraction/ vice versa and solve applications problems such as sales tax, mark up and discounts.

Out-of-Class Assignments: Percentage-

Decimals-Fractions Group Project . Homework assignment: intense practice in conversion % - decimal - fraction + solving application problems

6 Hours

Content: Solving real-life percent problems using proportion.

Student Performance Objectives

(SPO): Students will be able to solve percent increase/decrease problems plus commission/sales rates problems.

Out-of-Class Assignments: Homework assignment on verbal problems using examples from business and consumer applications.

7 Hours

Content: Basic concepts from geometry - angles,

triangles. [perimeters and applications to geometry.

Student Performance Objectives (SPO): Students will be able to identify parallel lines, right angles, obtuse/acute angles and evaluate the

perimeters of basic shapes.

Out-of-Class Assignments: Classwork assignment: drawing angles and recognizing standard geometric shapes. Homework Assignment: solving application problems with

perimeters.

3 Hours

Content: Linear measurement. Measurement of volume and area.

Student Performance Objectives (SPO): Students will be able to convert between English and metric measurement system

and to compute an area and volume of basic geometric objects.

Out-of-Class Assignments: Assigned reading and problems for computing perimeters, areas and volumes.

6 Hours

Content: Review for the Final Exam Chapters 1-6.

Student Performance Objectives (SPO): Students will review chapter contents and prepare for the final exam

Out-of-Class Assignments: Handouts for all the topics above.

3 Hours

Content: Review for the Final Exam: word problems, investment, application to geometry, and percent problems.

Student Performance Objectives (SPO): Students will review word problems in preparation for the final exam

Out-of-Class Assignments: Handouts on word problems.

2 Hours

METHODS OF INSTRUCTION:

Lectures, group work

METHODS OF EVALUATION:

CATEGORY 1 - The types of writing assignments required:

Percent range of total grade: 0   % to   %

CATEGORY 2 - The problem-solving assignments required:

Percent range of total grade: 90 % to 100 %

Homework Problems

Quizzes

Exams

CATEGORY 3 - The types of skill demonstrations required:

Percent range of total grade: 0   % to   %

CATEGORY 4 - The types of objective examinations used in the course:

Percent range of total grade: 0 % to 10 %

Multiple Choice

True/False

Matching Items

Completion

REPRESENTATIVE TEXTBOOKS:

Recommended:

Alan Tussy, David Gustafson, Developmental Mathematics for College Students, Brooks/ Cole, 2011, or other appropriate college level text.

ISBN: 0781439044377

Reading level of text, Grade: 12th   Verified by: Ken Wagman

Other textbooks or materials to be purchased by the student: none

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: B

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: C

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours: 6

Minimum Hours: 6

Course Control Number: CCC000542362

Sports/Physical Education Course: N

Taxonomy of Program: 170100