GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: MATH 402 DIVISION: 10 ALSO LISTED AS:

TERM EFFECTIVE: Spring 2021 CURRICULUM APPROVAL DATE: 12/8/2020

SHORT TITLE: PRE-ALGEBRA

LONG TITLE: Pre-Algebra

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
3	18	Lecture:	3	54
		Lab:	2	36
		Other:	0	0
		Total:	5	90

COURSE DESCRIPTION:

This course covers operations with integers, fractions, decimals and associated applications, ratio, proportion, geometry, and measurements with the emphasis on critical thinking and applications. Elementary algebra topics such as variables, expressions, and solving equations 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. PREREQUISITE: Completion of Math 400 with a grade of 'C' or better OR completion of Math 400 with a grade of 'P' OR appropriate assessment test score.

PREREQUISITES:

Completion of MATH 400, as UG, with a grade of C or better.
OR
Completion of MATH 400, as UG, with a grade of P or better.
OR
Score of 13 on Algebra Readiness
OR
Score of 12 on Elementary Algebra
OR
Score of 13 on Algebra Readiness - Revised
OR
Score of 2300 on Accuplacer Math

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
04A - Laboratory - LEH 0.65
05 - Hybrid
71 - Dist. Ed Internet Simultaneous
72 - Dist. Ed Internet Delayed
73 - Dist. Ed Internet Delayed LAB
73A - Dist. Ed Internet LAB-LEH 0.65

STUDENT LEARNING OUTCOMES:

1. Perform basic operations with whole numbers, integers , fractions, and decimals without the aid of a calculator.

Measure of assessment: Quiz, Homework, exams, lab work.

Year assessed, or planned year of assessment: 2017

Semester: Spring

2. Analyze a variety of problems, decide on a correct method or strategy of solution, implement the strategy to solve the problems, and evaluate solution to determine if it is reasonable using estimation skills.

Measure of assessment: Quiz, Homework, exams, lab work.

Year assessed, or planned year of assessment: 2017

Semester: Spring

3. Simplify algebraic expressions and solve equations involving integers, fractions, and decimals without the aid of a calculator.

Measure of assessment: Quiz, Homework, exams, lab

work.

Year assessed, or planned year of assessment: 2017

Semester: Spring

4. Set up and solve applied problems involving proportion, ratio, unit conversion, and percents.

Measure of assessment: Quiz, Homework, exams, lab work.

Year assessed, or planned year of assessment: 2017

5. Understand basic geometric properties involving lines, angles, and other geometric figures and use these properties to solve problems. Compute perimeter, area, and volume of geometric figures.

Measure of assessment: Quiz, Homework, exams, lab work.

Year assessed, or planned year of assessment: 2017

Semester: Spring

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 12/8/2020

DE MODIFICATION ONLY

3 lec.
2 lab Hours
CONTENT: Review Order of operations, adding/subtracting positive/negative numbers.
Orientation to math lab and other tutorial sources of help on campus
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to evaluate a numerical expression involving whole numbers, add and subtract integers and solve application problems without a calculator.
3 lec,
2 lab Hours
CONTENT: Multiplying/dividing and order of ops with integers
Introduce concept of variables.
Math study skills, test taking strategies
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to add/subtract, multiply/divide integers, evaluate a numerical expression involving integers without a calculator and solve application problems. Students will also be able to simplify simple algebraic expressions.
3 lec,
2 lab Hours
CONTENT:
Simplifying algebraic expressions, solving equations
Exam #1 - Integers.
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify algebraic expressions and solve simple equations involving integers without a calculator.
3 lec,

2 lab Hours
CONTENT: Simplifying fractions, mixed numbers vs. improper fractions.
Multiplying and
dividing fractions.
Fraction Group Project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify fractions,
convert between mixed
numbers and improper fractions, and multiply/divide
fractions without a calculator. CONTENT: finding LCD, adding/subtracting
fractions, order of operations
Review of operations with fractions -
fraction worksheet
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to find the LCD of two or
more fractions, add/subtract fractions and
evaluate numerical expressions
involving fractions without the use of a calculator, and solve application
problems.
3 lec,
2 lab Hours
CONTENT: Simplifying complex fractions, simplifying expressions
involving
fractions and solving equations with fractions
Fraction project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify
complex
fractions and algebraic expressions involving fractions and solve simple
equations involving fractions without the use of a calculator, and solve
application problems..
3 lec,
2 lab
Hours
CONTENT: Review of adding/subtracting, multiplying/dividing decimals, order of
operations with decimals.
Decimal Project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT
PERFORMANCE OBJECTIVES: Student will be able to add/subtract,
multiply/divide and evaluate numerical expressions with decimals without a
calculator.

3 lec,
2 lab Hours
CONTENT: Converting between
fractions and decimals, equations with decimals,
Exam #2 - fractions and decimals
Review fractions and decimals
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES:
Student will be able to work with a combination
of fractions and decimals, and solve equations with fractions and/or decimals
without a calculator.
3 lec,
2 lab Hours
CONTENT: Ratios, Rates and
Proportion, applications of proportions including
similar and congruent triangles.
Proportion Project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student
will be able to simplify a ratio,
compute a rate, determine proportionality and solve a proportion and solve
applications of proportions, including similar triangles.
3 lec,
2 lab Hours
CONTENT:
Ratios, Rates and Proportion, applications of proportions including
similar and congruent triangles.
Proportion Project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE
OBJECTIVES: Student will be able to simplify a ratio,
compute a rate, determine proportionality and solve a proportion and solve
applications of proportions, including similar triangles.
3 lec,
2 lab
Hours
CONTENT: Review of Percentage/fraction/decimal, Solving percentage problems
Percentage/Fraction/Decimal project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE
OBJECTIVES: Student will be able to express a percentage as
a fraction and/or decimal and vice-versa, solve a basic percentage problem
using a variety of methods.

3 lec,
2 lab Hours
CONTENT:
Applications of percentages such as sales tax, mark up and discount
and percentage increase/decrease.
Percentage group project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT
PERFORMANCE OBJECTIVES: Student will be able to set up and solve a
application problem involving percentages.
3 lec,
2 lab Hours
CONTENT: Exam #3 - ratio, proportions and percentages, Introduction to
basic
geometry such as measurement of angles, lines, parallel/intersection lines,
Practice Test, Prepare for Exam
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE
OBJECTIVES: Student will be able to identify parallel
lines, right angles, acute/obtuse angles, and draw an angle with a given
measurement.
3 lec,
2 lab Hours
CONTENT: Linear measurement, Metric vs.
English, perimeter
Geometry project
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to compute perimeter of
basic geometric objects and
convert between English and metric measurement
systems.
3 lec,
2 lab Hours
CONTENT: Measurement of area, volume, weight and mass
Metric vs. English measurement activity
HOMEWORK: Assigned reading and
problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will be able to compute area and volume
of basic geometric figures and convert between English and metric measurement
systems

3 lec,
2
lab Hours
CONTENT: Exam #4 - geometry and measurement, Review for final exam
Practice final exam
HOMEWORK: Assigned reading and problems, lab assignment.
STUDENT PERFORMANCE OBJECTIVES: Student will
review semesters work and prepare
for the final exam.
2 Hours
final exam

METHODS OF INSTRUCTION:
Lecture, group work, and discussions.

OUT OF CLASS ASSIGNMENTS:
Required Outside Hours: 108
Assignment Description: Homework and lab assignments.

METHODS OF EVALUATION:
Writing assignments
Percent of total grade: 0.00 %
If this is a degree applicable course, but substantial writing assignments are not appropriate, indicate reason: Course is primarily computational; Course primarily involves skill demonstration or problem solving
Problem-solving assignments
Percent of total grade: 90.00 %
Percent range of total grade: 90 % to 100 % Homework Problems; Quizzes; Exams; Other: Projects, study skills assessment
Objective examinations
Percent of total grade: 5.00 %
Percent range of total grade: 5 % to 10 True/False; Matching Items; Completion

REPRESENTATIVE TEXTBOOKS:
Required Representative Textbooks
Elayn Martin-Gay. Prealgebra or other appropriate college level text.. Boston: Pearson,2015.
ISBN: 978-0-321-95504-3
Reading Level of Text, Grade: 12 Verified by: Ken Wagman

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:
Minimum Hours:
Course Control Number: CCC000306956
Sports/Physical Education Course: N
Taxonomy of Program: 170100