GAVILAN COLLEGE

5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: MATH 233   DIVISION: 10   ALSO LISTED AS: MATH 233B

TERM EFFECTIVE: Fall 2018   **Inactive Course**

SHORT TITLE: INTERMED ALGEBRA

LONG TITLE: Intermediate Algebra

Units	Number of Weeks		Contact Hours/Week		Total Contact Hours
5	18	Lecture:	5	Lecture:	90
		Lab:	0	Lab:	0
		Other:	0	Other:	0
		Total:	5	Total:	90

COURSE DESCRIPTION:

Review of basic concepts, linear equations and inequalities, graphs and functions, systems of linear equations, polynomials and polynomial functions, factoring, rational expressions and equations, roots, radicals, and complex numbers, solving quadratic equations, exponential and logarithmic functions, and problem solving strategies. Mathematics 233, 233A, and 233B have similar course content. This course may not be taken by students who have completed Mathematics 233B with a grade of 'C' or better. This course may be taken for Mathematics 233B credit (2.5) units by those students who have successfully completed Mathematics 233A with a grade of 'C' or better. PREREQUISITE: Mathematics 205 or Mathematics 205A and 205B or Mathematics 206 with a grade of 'C' or better. The instructor will be using and supporting TI-83 Plus graphing calculator in all classroom demonstrations.

PREREQUISITES:
        Completion of MATH 205, as UG, with a grade of C or better.
        OR
        (Completion of MATH 205A, as UG, with a grade of C or better.
        AND Completion of MATH 205B, as UG, with a grade of C or better.)
        OR
        Completion of MATH 206, as UG, with a grade of C or better.
        OR
        Completion of MATH 430, as UG, with a grade of C or better.
        OR
        Score of 17 on Elementary Algebra
        OR
        Score of 15 on Intermediate Algebra
        OR
        Score of 2500 on Accuplacer Math

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES
        L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:
        02 - Lecture and/or discussion

STUDENT LEARNING OUTCOMES:
1.   Analyze a variety of problems involving contemporary applications of linear, quadratic, exponential, logarithmic, and rational functions. Such applications include, but are not limited to bacterial growth, radioactive decay, earthquakes, compound and simple interest, and variation.

Measure: Quizzes, exams, projects, group work, and/or homework

ILO: 2, 7

GE-LO: B3

2.   Determine and implement an appropriate method of solution for these problems.

Measure: Quizzes, exams, projects, group work, and/or homework

ILO: 7, 2

GE-LO: B3

3.   Graph linear, quadratic logarithmic, and exponential functions, and utilize the graph in problem solving.

Measure: Quizzes, exams, projects, group work, and/or homework

ILO: 7, 2, 4

GE-LO: B3

4.   Solve moderately complex equations and inequalities, some of which they will set up.

Measure: Quizzes, exams, projects, group work, and/or homework

ILO: 2, 7, 4

GE-LO: B3

5.   Demonstrate proficiency with a scientific calculator.

Measure: Quizzes, exams, projects, group work, and/or homework

ILO: 2, 3

GE-LO: B3

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

Inactive Course: 03/26/2018

5 Hours

Content: Review/Readiness Test; sets and other basic concepts, properties of and operations with real numbers, order of operations, solving linear equations and formulas. Applications of linear equations (word problems), Extensive homework will be assigned for these topics and all succeeding ones.

Student Performance Objectives: Student will be able to evaluate numerical and algebraic expressions using Order of Operations, solve a wide variety of linear equations and solve word problems involving linear equations.

5 Hours

Content: Additional application problems, linear inequalities, absolute value equations, problem solving strategies involving linear equations and inequalities.

Student Performance Objectives: Student will be able to solve linear inequalities, graph the solution on the numberline and express the solution in interval notation, solve absolute value problems and their applications.

5 Hours

Content: Cartesian coordinate system, distance and midpoint formulas, graphing linear equations, slope.

Student Performance Objectives: Student will be able to plot points, find the distance between two points, given an equation graph the line and vice versa and identify slope and intercepts.

5 Hours

Content: Slope-intercept equation of a line, point-slope equation of a line, applications, relations and functions, and composition of functions.

Student Performance Objectives: Student will be able to: Find the equation of a line given a) slope and y-intercept, b) point and slope, c) two points and d) other types of information about the line; Solve application problems; Given two functions f and g, find f+g, f-g, fg, f/g as well as the composite functions both graphically and algebraically.

5 Hours

Content: Solving systems of linear equations in two and three variables, problem solving strategies involving linear functions and systems of equations.

Student Performance Objectives: Student will be able to solve 2x2 and 3x3 systems of equations using graphing (for 2x2 only), substitution and elimination, and solve application problems involving systems of equations, including distance, solution mixture and investment problems.

5 Hours

Content: Addition, subtraction, multiplication and division of polynomials. Factoring monomial out of a polynomial, factoring by grouping, and factoring a trinomial.

Student Performance Objectives: Student will be able to add, subtract, multiply, divide polynomials, and factor out the Greatest Common Factor,and factor a trinomial.

5 Hours

Content: Difference of squares, difference and sum of cubes, review of factoring, solving polynomial equations by factoring, problem solving strategies involving polynomial functions and equations. A brief introduction to the quadratic formula.

Student Performance Objectives: Student will be able to: Factor any polynomial, including difference of squares, and sum and difference of cubes; Identify when a polynomial cannot be factored, solve an equation by factoring and using quadratic formula, and solve application problems involving polynomials.

5 Hours

Content: Introduction to rational expressions, simplifying, multiplying and dividing rational expressions.

Student Performance Objectives: Student will be able to simplify, multiply and divide rational expressions.

5 Hours

Content: Adding and subtracting rational expressions, simplifying complex rational expressions.

Student Performance Objectives: Student will be able to add and subtract rational expressions and simplify complex rational expressions.

5 Hours

Content: Solving rational equations, applications, variation problems, problem solving strategies involving rational equations.

Student Performance Objectives: Student will be able to solve a rational equation and solve applications of rational equations, including variation problems.

5 Hours

Content: Introduction to roots and radicals, rational exponents, multiplying, dividing, and simplifying radical expressions.

Student Performance Objectives: Student will be able to express a radical expression with rational exponents and vice versa, simplify radical expressions by converting to exponential form and using properties of exponents, and multiply/divide rational expressions and simplify the result.

5 Hours

Content: Adding and subtracting radicals, solving radical equations, and complex numbers.

Student Performance Objectives: Student will be able to add and subtract radical expressions, solve radical equations and add/subtract, multiply and divide complex numbers.

5 Hours

Content: Composite and inverse functions, graphing exponential functions and logarithmic functions, properties of logs.

Student Performance Objectives: Student will be able to determine when a function has an inverse, find it and graph, including exponential and logarithmic functions; use properties of logs to simplify logarithmic expressions.

5 Hours

Content: Solving logarithmic and exponential functions, natural exponential and logarithmic functions, problem solving strategies involving logarithmic and exponential equations.

Student Performance Objectives: Student will be able to solve logarithmic and exponential functions and solve applications thereof, including finance, population growth and decay problems.

5 Hours

Content: Solving quadratic equations by completing the square and by quadratic formula, applications, graphing quadratic functions, standard form of quadratic functions, problem solving strategies involving radicals and quadratic functions and quadratic and rational inequalities. Review for final exam

Student Performance Objectives: Student will be able to solve a quadratic equation by completing the square and using the quadratic formula, solve applications of quadratic functions, put a quadratic function into standard form and identify the vertex and other salient properties of the graph, and solve quadratic and rational inequalities.

2 Hours
Final exam

METHODS OF INSTRUCTION:
Lecture, group work.

METHODS OF EVALUATION:
CATEGORY 1 - The types of writing assignments required:
Percent range of total grade: 0 % to 15 %

If this is a degree applicable course, but substantial writing assignments are not appropriate, indicate reason:
Course is primarily computational

CATEGORY 2 -The problem-solving assignments required:
Percent range of total grade: 75 % to 95 %
Homework Problems
Quizzes
Exams

CATEGORY 3 -The types of skill demonstrations required:
Percent range of total grade: 0 % to   0 %

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:

Required:
Angel, Allen, "Title: Intermediate Algebra for College Students, seventh edition", Pearson Prentice Hall, 2008, or other appropriate college level text.
ISBN: 0-13-238357-8
Reading level of text: 11th gradeVerified by: Ken Wagman
Other textbooks or materials to be purchased by the student: scientific calculator

ARTICULATION and CERTIFICATE INFORMATION

        Associate Degree:
                GAV B4, effective 201470
        CSU GE:
        IGETC:
        CSU TRANSFER:
                Not Transferable
        UC TRANSFER:
                Not Transferable

SUPPLEMENTAL DATA:
Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department:
CSU Crosswalk Course Number:

Prior to College Level: A
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: E
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000283032
Sports/Physical Education Course: N
Taxonomy of Program: 170100