GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: MATH 240 DIVISION: 10 ALSO LISTED AS:

TERM EFFECTIVE: Summer 2020 CURRICULUM APPROVAL DATE: 05/12/2020

SHORT TITLE: ALGEBRA II

LONG TITLE: Algebra II

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

COURSE DESCRIPTION:

This is a second course of algebra and is designed for STEM and other math based majors. It will cover solving systems of equations with matrices, graphs and functions, absolute value equations and inequalities, radical, quadratic, exponential and logarithmic expressions and functions, complex numbers, conic sections, and problem solving strategies. PREREQUISITE: Math 430 with a grade of C or better, or Math 205, Math 205B, or Math 233A with a grade of C or better, or assessment test recommendation.

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 233A, 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
OR
Score of 2600 on MM Placement Tool 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

05 - Hybrid

72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

1. Solve absolute value equations and inequalities.

Measure of assessment: Homework, quizzes, exams.

2. Analyze and solve radical, quadratic, exponential, and logarithmic equations, as well as systems of linear equations using matrices. Set up equations in all of the above to solve application problems, including investment, solution mixture, distance, population growth, and carbon dating.

Measure of assessment: Quizzes, exams, projects and/or homework

Year assessed, or planned year of assessment: 2017

Semester: Spring

3. Given a graph, equation or list, identify domain, range, points on the graph and whether a graph depicts a function.

Measure of assessment: Quizzes, exams, projects and/or homework

4. Graph quadratic, logarithmic, and exponential functions and be able to utilize the graphs in problem solving

Measure of assessment: Quizzes, exams, projects and/or homework

5. Simplify and perform operations with radicals expressions. Use properties of exponents and logarithms to simplify exponential and logarithmic expressions.

Measure of assessment: Quizzes, exams, projects and/or homework

Year assessed, or planned year of assessment: 2017

Semester: Spring

6. Demonstrate proficiency with a scientific calculator

Measure of assessment: Quizzes, group work

7. Identify, analyze and graph conic sections.

Measure of assessment: Quizzes, exams, projects and/or homework

8. Analyze and translate verbal Expressions into Algebraic. Use symbolic language to name algebraic structures.

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

Curriculum Approval Date: 05/12/2020

5 Hours

Content: Review of factoring and solving linear, quadratic and rational equations.

Student Performance Objectives (SPO): Students will be able to identify the type of factoring required and factor polynomials. Students will identify and solve linear, quadratic and rational equations.

Out-of-Class Assignments: Homework assignment

5 Hours

Content: Solving systems of equations in two and three variables using Gaussian Elimination.

Student Performance Objectives (SPO): Students will be able to express a system of equations in augmented matrix form, perform row operation to convert the system to an upper-triangular system and use back substitution to solve.

Out-of-Class Assignments: Homework assignment

3 Hours

Content: Absolute Value Equations and Inequalities

Student Performance Objectives (SPO): Students will be able to solve absolute value problems. Students will be able to solve absolute value problems and

express the solution algebraically, graphically on the number line, in interval notation and in set builder notation. Students will be able to set up and solve absolute value equations/inequalities

to solve an application problem.

Out-of-Class Assignments: Homework assignment, project

10 Hours

Content: Introductions to functions, domain, range. Algebra of functions. Inverse functions

Student Performance Objectives (SPO): Given an equation, list or graph, students will be able to determine whether it is a function or relation, find the domain, range and points on the graph. Students will

be able to find the sum, difference, product, quotient and composite of two functions. Given a function or the graph of the function, students will be able to determine whether the inverse function

exists and if so, to graph the inverse function.

Out-of-Class Assignments: Homework Assignment.

15 Hours

Content: Radical expressions and functions and rational exponents, complex numbers.

Student Performance Objectives (SPO): Students will be able to simplify, multiply, divide, add and subtract rational expressions and complex numbers. Students will be able to solve radical equations.

Students will express radical expressions in rational exponential form and be able to simplify, multiply and divide by applying properties of exponents.

Out-of-Class Assignments: Homework Assignment.

15 Hours

Content: Quadratic equations, functions and inequalities

Student Performance Objectives (SPO): Students will be able to solve a quadratic equation using the square root property, completing the square, the quadratic formula and factoring, graph and analyze quadratic functions, set up and solve applications involving quadratic functions, and solve equations in quadratic form. Students will be able to solve polynomial and rational inequalities, graph the solution on the number line and give the solution in interval notation.

Out-of-Class Assignments: Homework Assignment/project.

15 Hours

Content: Exponential and logarithmic functions

Student Performance Objectives (SPO): Students will be able to graph and analyze exponential and logarithmic functions. use properties of logarithms to simplify and evaluate logarithmic expressions, solve logarithmic and exponential equations, and set up and solve applications thereof, including investment, population, carbon dating.

Out-of-Class Assignments: Homework Assignment/ project.

15 Hours

Content: Conic Sections

Student Performance Objectives (SPO): Students will be able to identify by equation or graph a circle, ellipse, and hyperbola or parabola. Students will be able to graph all conic sections. Students will be able to solve non-linear systems of equations.

Out-of-Class Assignments: Homework Assignment.

5 Hours

Content: Review for the Final Exam.

Student Performance Objectives (SPO): Students will be able to review and re-learn the basic concepts.

Out-of-Class Assignments: Practice Final, Chapter Reviews

2 Hours

Final

METHODS OF INSTRUCTION:

Lecture, discussion, group work.

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours: 160

Assignment Description: 1. Regularly assigned homework that requires students to analyze and study pertinent text material, solved examples and lecture notes.

2. Regularly assigned homework that requires students to apply the principles and skills covered in class by solving related problems.

METHODS OF EVALUATION:

Problem-solving assignments

Percent of total grade: 20.00 %

Homework, quizzes, projects.

Objective examinations

Percent of total grade: 80.00 %

REPRESENTATIVE TEXTBOOKS:

Required Representative Textbooks

Angel, Runde. Intermediate Algebra for College Students. Pearson,2014.

ISBN: ISBN-10: 0321927354

Reading Level of Text, Grade: 12 Verified by: Jennifer Nari

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: 5
Minimum Hours: 5
Course Control Number: CCC000536436
Sports/Physical Education Course: N
Taxonomy of Program: 170100