



Course: MATH 9

Division: 10

Also Listed As:

Term Effective: 200930, INACTIVE COURSE

Short Title: COLLEGE ALG & TRIG

Full Title: College Algebra and Trigonometry

<u>Contact Hours/Week</u>	<u>Units</u>	<u>Number of Weeks</u>	<u>Total Contact Hours</u>
Lecture: 5	5	17.34	Lecture: 86.7
Lab: 0			Lab: 0
Other: 0			Other: 0
Total: 5			Total: 86.7

Credit Status: D - Credit - Degree Applicable

Grading Modes: L - Standard Letter Grade

Repeatability: Repeatability: N - Course may not be repeated

Schedule Types: 02 - Lecture and/or discussion

Course Description:

Math 9 is the first step in preparing students for the study of calculus by providing important skills in algebraic manipulation and interpretation at the college level. Topics will include a review of basic algebraic concepts; lines; polynomial and rational functions; exponential and logarithmic functions; trigonometric functions, identities, inverse functions and equations; applications of trigonometry; systems of equations and matrices; conic sections; sequences, series and combinatorics. Hand-held graphing calculators will be used extensively to highlight their strengths and their limitations as a problem-solving tool. Real world applications will be numerous. **PREREQUISITE:** Mathematics 233 with a grade of 'C' or better.
ADVISORY: Mathematics 209 (May be concurrent.)

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

GAV B4, effective 199870

CSU GE:

CSU B4, effective 199870

IGETC:

IGETC 2A, effective 199870

CSU TRANSFER:

Transferable CSU, effective 199870

UC TRANSFER:

Transferable UC, effective 199870

PREREQUISITES:

Completion of MATH 233, as UG, with a grade of C or better.

OR

Completion of MATH 3, as UG, with a grade of C or better.

OR

Score of 33 on Intermediate Algebra

OR

Score of 13 on Pre-Calculus

COREQUISITES:

STUDENT LEARNING OUTCOMES:

1. Goals expected of the student at the end of the course are mastery of the student performance objectives listed in the chronological description of content.

2. The primary objective of this course is to elevate the skill level of the student and provide him/her with college level skills in solving equations of various types (algebraic, exponential, logarithmic, trigonometric) and manipulating the types of complicated expressions typically found in the study of calculus.

TOPICS AND SCOPE:

Inactive Course: 12/08/2008

WEEK HOURS CONTENT:

1 4 Review of basic concepts of algebra.

Reading from textbook. Homework problems from text and instructor.

For all weeks the understanding and mastery of the weekly description of content constitute student performance objectives.

2 4 Continued review of basic concepts of algebra.

Reading from textbook. Homework problems from text and instructor. Assignment of group project #1.

3 4 Introduction to basic formulas (distance formula, midpoint formula) and the idea of a function.

Reading from textbook. Homework problems from text and instructor.

4 4 Introduction to polynomials and complex numbers, polynomial division, theorems about zeros of polynomials.

Reading from textbook. Homework problems from text and instructor.

5 4 Continued introduction to polynomials and complex numbers, polynomial division, theorems about zeros of polynomials.

Reading from textbook. Homework problems from text and instructor. Assignment of group project #2.

6 4 Introduction to rational functions and their graphs. discussion of polynomial and rational inequalities.

Reading from textbook. Homework problems from text and instructor. Assignment of group project #3.

7 4 Continued introduction to rational functions and their graphs, discussion of polynomial and rational inequalities.

Reading from textbook. Homework problems from text and instructor.

8 4 Introduction and definition of inverse relationships. Compare and contrast exponential and logarithmic relationships and their graphs.

Reading from textbook. Homework problems from text and instructor.

9 4 Introduction to the properties of logarithms.

Solving exponential and logarithmic equations. Basic applications of exponents and logarithms.

Reading from textbook. Homework problems from text and instructor.

10 4 Introduction to trigonometric relationships. Basic definitions of sine, cosine, and tangent and their use in solving right triangles.

Introduction to the use of radian measure. Analysis of the periodic nature of sine, cosine and tangent and their graphs.

Reading the textbook. Homework problems from text and instructor. Assignment of group project #5.

11 4 Introduction and development of the basic trigonometric identities and their use in solving trigonometric equations.

Reading from textbook. Homework problems from text and instructor.

12 4 Introduction to the Law of Sines and the Law of Cosines to solve general triangles. Introduction to the trigonometric form of complex numbers and DeMoivre's Theorem.

Reading from textbook. Homework problems from text and instructor.

13 4 Introduction to polar coordinates and graphs in polar form. Introduction to vectors.

Reading from textbook. Homework problems from text and instructor.

14 4 Introduction to systems of equations in two or more variables. Matrices and row operations.

Reading from textbook. Homework problems from text and instructor.

15 4 Introduction to partial fractions. Introduction to the inverse of a matrix and matrix equations.

Reading from textbook. Homework problems from text and instructor.

16 4 Introduction to the basic conic sections. Compare

and contrast the parabola, circle, ellipse, and hyperbola.

Reading from textbook. Homework problems from text and instructor.

17 4 Introduction to arithmetic and geometric sequences and series.

Reading from textbook. Homework problems from text and instructor. Assignment of group project #8.

18 2 Final Exam.

Included in content section.

METHODS OF INSTRUCTION:

Methods of Instruction will include standard lecture/discussion/ chalkboard work by instructor, and small group work assisted and directed by the instructor.

REPRESENTATIVE TEXTBOOKS:

Roland Larson & Robert Hostetler, ^uAlgebra and Trigonometry^s, Houghton Mifflin Company, 1997.

or equivalent college level text.

Reading level of text: 10th grade.

OTHER MATERIALS REQUIRED TO BE PURCHASED BY THE STUDENT:

Hand held graphing calculator optional

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: A

Noncredit Category: Y

Cooperative Education:

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department: MATH

CSU Crosswalk Course Number: 9

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000003523

Sports/Physical Education Course: N

Taxonomy of Program: 170100