

**Sierra College
Math 12
College Algebra
Fall Semester
2017**

Instructor:

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Course Identification:

**Math 12, College Algebra
Course Code #81631
V319, MWF 8:00-9:15
4 units**

Office Hours:

**MWF: 7:00-8:00 am,
MW: 12:30-1:30 pm,
Office hours will be held in the Math
Lab, V329**

Math Lab:

**The Math Lab is located in V329
This is free, walk in tutoring.
Hours: MWTh: 8-6
T: 8-8
F: 8-5
S: 8-1**

Materials:

**Text: College Algebra,
10th edition, by Sullivan ; Pearson/
Prentice Hall.**

Calculator: A scientific calculator is required. In addition, a graphing calculator is recommended. Either a graphing calculator or a computer algebra system will be used periodically in the classroom for demonstration purposes. The graphing utility device is an excellent tool for acquiring the understanding of many of the concepts of this course due to its ability to rapidly investigate both the numerical and graphical aspects of these concepts. However, on many exams and quizzes, a calculator will not be allowed. There will not be any opportunity to use cell phones on the

Prerequisites:

Completion of Math D or placement by matriculation assessment process.

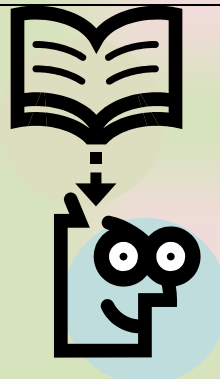
Withdraw Dates:

**September 4 without a W
October 30 with a W**

Holidays:

**September 4, Labor Day
November 10, Veterans' Day
November 24, Thanksgiving Break**

quizzes and exams. A scientific calc. is allowed on some exams/quizzes.

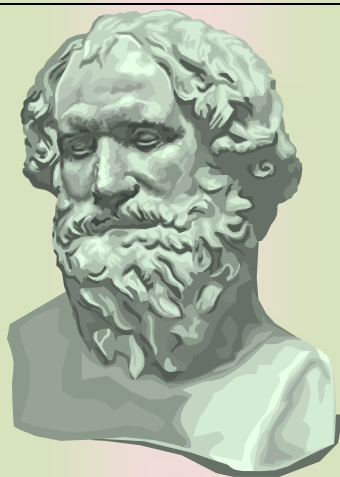


Workload:

The material is treated with a scope & intensity that requires the student to study independently outside of class. This course requires a minimum of two hours of work outside the classroom for every one hour in class.

Attendance:

Attendance is not incorporated in the final course grade. Nevertheless, a solid attendance record is necessary to succeed in a course that is both rigorous and fast paced.



Grading:

Quizzes: 100 pts
Exams: 400 pts
Final Exam: 150 pts

Quizzes:

There will be more than 10 quizzes, worth 10 points each. The top 10 scores will be used in the computation of your final course grade. Consequently, no make-up quizzes will be given.

Homework:

Homework will be assigned daily, but will not be collected. Instead, a quiz will be given each Friday (except those days on which we have an exam) covering the material from the previous homework.

Group Work:

Working with other students outside of class is strongly encouraged. The Math Lab is an ideal location for working with your peers.

Exams:

There will be four 100 point exams and a 150 point comprehensive final exam. The lowest of the four regular exam scores or the quiz total will be dropped

Honesty Policy:

Cheating is of course forbidden. College policy on cheating, as outlined in the student conduct code, will be strictly enforced.

Drop/Refunds:

in the computation of the final course grade. The exam dates are given below:

Exam I: September 15
Exam II: October 6
Exam III: October 27
Exam IV: November 17
Final Exam: December 8

A student must drop him/herself in order to be eligible for a refund. Instructor drops do not generate refunds.



Student Outcomes:

Through homework assignments, quizzes, exams, projects and classroom discussions, the student will:

1. simplify expressions and solve equations of the following types: linear, quadratic (including some with complex solutions), rational, radical, absolute value, exponential, and logarithmic;
2. interpret and construct graphs of quadratic, rational, exponential, logarithmic functions, and conic sections;
3. translate, model, and solve applied problems utilizing linear, quadratic, rational, radical exponential, logarithmic functions and matrix algebra;
4. logically present clear, complete, accurate, and sufficiently detailed solutions to communicate reasoning and demonstrate the method of solving problems;
5. apply techniques from linear algebra and combinatorics

Other Services:

The college tutor lab, in which one-on-one tutoring

Topical Outline:

- I. Basic Concepts of Algebra
 - A. Exponents and Radicals
 - B. Polynomials, Factoring, Special Products
 - C. Fractional Expressions
 - D. Linear and Quadratic Equations
 - E. Linear, Non-Linear and Absolute Value Inequalities
 - F. Problem Solving/Word Problems
 - G. Complex Numbers
- II. Functions and Graphs
 - A. Definition of Function and Evaluation of Fcts
 - B. Graphing of Functions
 1. Zeroes, or Roots, and Intercepts of Functions
 2. Asymptotes of Functions
 3. Shifting and Reflection of Functions
 4. Symmetry
 - C. Combination and Composition of Functions
 - D. Inverse Function
 - E. Conic Sections
- III. Logarithms, Exponential and Logarithmic Functions
 - A. Review of Exponents and Logarithms
 - B. Solving Equations with Exponentials and Logarithms
 - C. Graphing Exponential and Logarithmic Functions
 - D. Word Problems with Logarithmic and Exponential Equations
- IV. Systems of Equations and Matrices
 - A. Solving Systems of Equations
 1. Substitution
 2. Elimination
 - B. Introduction to Matrices
 1. Algebra of matrices
 2. Elementary row operations
 3. Inverse of a square matrix
 - C. Matrices as a Method of Solving a System of

arrangements can be made, is located in the LRC 402. The proctoring center is located in LRC 441. A student ID must accompany the student if services here are accessed. Fall hours are:

Misc:

Any papers torn from a spiral notebook with rough edges will be graded.

Equations

1. Elementary row operations
2. Inverse matrices
3. Cramer's Rule

V. Binomial Expansion and Combinatorics

A. Expand Binomial

1. Pascal's triangle
2. Combinations

VI. Sequences and Mathematical Induction

A. Arithmetic Sequences

1. Terms
2. Sums

B. Geometric Sequences

1. Terms
2. Sums (finite and infinite)

C. Introduction to Mathematical Induction

If You Want Your Work to Be Accepted and Graded, Then the Following Must Be Followed:

- Remove any fringe from paper torn out of spiral notebook.
- Do not use graph paper unless it is used solely for graphing.
- All work must be clear and organized.
- A full name must be included.
- Any take home work must be turned in at the very beginning of class on the next class meeting. No late materials will be accepted.
- All paper turned in must be on paper that is approximately 8½ X 11.

Harassment and Discrimination:

Sierra College is committed to providing a safe learning environment, free of harassment and discrimination as described in District policies found on our website. It is my goal that you feel you can share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings and I will seek to keep information you share private to the greatest extent possible; however, I am required to report information about incidents of gender based discrimination, violence and harassment to the College's Title IX Coordinator.