CHAMINADE UNIVERSITY
Syllabus

Name of Course

MA103 College Algebra

Instructor

Dr. David Lani   (phone: 538–3669)

Textbook

Algebra for College Students / Gustafson, R. & Frisk, P. — 5th edition

Supplies

a *scientific* calculator—with fraction capability—is required
11" x 8.5" lined paper; or, if tearing is needed, *neat* notebooks are best
#2 (or darker) pencils; no pens

Course Objectives

(1) To establish a firm foundation in the fundamentals of algebra;

(2) To prepare students for entry into MA110 Precalculus;

(3) To emphasize: manipulating algebraic expressions (polynomials, rational expressions; radical expressions); solving equations and inequalities; basic concepts of functions; exponential and logarithmic functions.

Course Requirements

Attendance

Attendance at each class is mandatory. A score of 100, 75, 50, or 0 is recorded for each class meeting: no more than 10 minutes missed = 100; no more than 30 minutes missed = 75; no more than 60 minutes missed = 50; otherwise = 0. The best 18 of 20 scores count towards the final course grade.

Homework

Assignments are due at the *beginning* of class; otherwise, they are considered late. Work that is no more than one day late is accepted but assessed a 25% deduction. Work that is more than one day late is not accepted; a score of 0 is recorded. Approximately ten assignments will be collected. The two lowest scores are discarded; the rest count towards the final course grade.

Problem solving is a major focus of this course and mathematics in general. Therefore, all work and/or explanations leading to solutions must be included, unless otherwise indicated. In general, answers alone are not sufficient to receive full credit.

Tests

All tests are closed–book, with no notes allowed. Some have "no calculator" parts; some have "calculator allowed" parts. No borrowing of calculators is allowed on tests for which a calculator is allowed/needed. The time limit for the final examination is two hours; each of the previous three tests has a time limit of one hour. Consult the course calendar for test dates and inform the instructor of any conflict as soon as possible. Alternate forms may be administered for any scheduled tests that are missed.

Grading

    Attendance — 10% of final grade
    Homework — 20% of final grade
    Three Tests — together, 40% of final grade
    Final Exam — 30% of final grade

        Letter Grades: 100 – 90 = A;   89 – 80 = B;   79 – 70 = C;
                            69 – 60 = D;   below 60 = F

Topics Covered

Basic Concepts (chapter 1)
    Brief review of the real number system, including arithmetic and properties; exponents; simple equations and applications.

Graphs and Functions (chapter 2)
    The rectangular coordinate system, graphs of linear equations; slopes of lines; writing equations of lines; introduction to functions.

Systems of equations (chapter 3)
    Solving systems of two equations in two variables by graphing, substitution, and elimination; solving three equations in three variables; applications.

Inequalities (chapter 4)
    Linear inequalities; absolute values; linear inequalities in two variables; systems of inequalities.

Polynomials and Polynomial Functions (chapter 5)
    Arithmetic of polynomials; complete factorization; solving equations by factoring; applications.

Rational Expressions (chapter 6)
    Arithmetic of rational expressions; solving equations with rational expressions; applications.

Rational Exponents and Radicals (chapter 7)
    Radical expressions and applications; radical equations; rational exponents; arithmetic of radical expressions.

Quadratic Functions and Inequalities (chapter 8)
    Solving quadratic equations by factoring; introduction to completing the square; the quadratic formula; applications; graphs of quadratic equations.

Exponential and Logarithmic Functions (chapter 10)
    Irrational exponents; graphs and applications of exponential functions; common logarithms; natural logarithms; graphs and applications of logarithmic functions; properties of logarithms.

Conic Sections and Quadratic Systems (chapter 12)
    Conic sections: circles, parabolas; ellipses; hyperbolas; solving simultaneous second-degree equations.

Student Exercises

Completion of all tests, homework assignments, and in-class exercises.