

MGMT 190 Occupational Work Experience / Management - Supervision

Units: 1.0 TO 4.0 **Hours:** 5.0 TO 20.0 Laboratory
Transferable: CSU

Occupational work experience for students who have a job related to their major. A training plan is developed cooperatively between the employer, college and student. (P/NP grading) 75 hours per semester paid work = 1 unit. 60 hours non-paid (volunteer) work per semester = 1 unit. May be taken for a maximum total of 16 units. Minimum 2.00 GPA. **REQUIRED:** Declared vocational major.

MARKETING**MKTG 100 Principles of Marketing**

Units: 3.0 **Hours:** 3.0 Lecture
Transferable: CSU

An introduction to the economic and social problems involved with moving goods and services from the producer to the consumer. This course covers topics such as marketing institutions, channels of distribution, pricing, and government relationships. This course has the option of a letter grade or pass/no pass. **ADVISORY:** Eligible for English 250 and English 260.

MKTG 190 Occupational Work Experience / Marketing

Units: 1.0 TO 4.0 **Hours:** 5.0 TO 20.0 Laboratory
Transferable: CSU

Occupational work experience for students who have a job related to their major. A training plan is developed cooperatively between the employer, college and student. (P/NP grading) 75 hours per semester paid work = 1 unit. 60 hours non-paid (volunteer) work per semester = 1 unit. May be taken for a maximum total of 16 units. Minimum 2.00 GPA. **REQUIRED:** Declared vocational major.

MATHEMATICS**MATH 1A Single - Variable Calculus and Analytic Geometry**

Units: 4.0 **Hours:** 4.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

Limits and continuity, analyzing the behavior and graphs of functions, derivatives, implicit differentiation, higher order derivatives, related rates and optimization word problems, Newton's Method, Fundamental Theorem of Calculus, and definite and indefinite integrals. (C-ID: MATH 210, MATH 900S: Math 1A + Math 1B) **PREREQUISITE:** Mathematics 8B with a grade of 'C' or better. (C-ID: MATH 900S: Math 1A + Math 1B)

MATH 1B Single - Variable Calculus and Analytic Geometry

Units: 4.0 **Hours:** 4.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

This course is a standard second semester Calculus course covering methods of integration, applications of the integral, differential equations, parametric and polar equations, and sequences and series. (C-ID: MATH 220, MATH 900S: Math 1A + Math 1B) **PREREQUISITE:** Mathematics 1A with a grade of 'C' or better.

MATH 1C Multivariable Calculus

Units: 4.0 **Hours:** 4.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

A standard third semester Calculus course covering functions of several variables, vectors, surfaces, vector-valued functions, partial derivatives, multiple and line integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem. **PREREQUISITE:** Mathematics 1B with a grade of 'C' or better.

MATH 2 Linear Algebra

Units: 3.0 **Hours:** 3.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

A standard one semester Linear Algebra course covering systems of linear equations, vectors and matrices, determinants, vector spaces, linear transformations, eigenvalues, and eigenvectors. Graphing calculators and computers will be used. (C-ID: MATH 250) **PREREQUISITE:** Mathematics 1C with a grade of 'C' or better.

MATH 2C Differential Equations

Units: 3.0 **Hours:** 3.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

An introductory course in differential equations that covers: first order differential equations including separable, linear, exact, homogeneous, bernoulli and Euler's Method; second order differential equations including homogeneous, nonhomogeneous, variation of parameters, method of undetermined coefficients and reduction of order; series solutions to differential equations; Laplace Transforms; linear systems; and if time, Fourmier Analysis; and applications thereof. (C-ID: MATH 240) **PREREQUISITE:** Mathematics 1C with a grade of 'C' or better.

MATH 5 Introduction to Statistics

Units: 3.0 **Hours:** 3.0 Lecture and 1.0 Laboratory
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

Descriptive analysis and presentation of either single-variable data or bivariate data, probability, probability distributions, normal probability distributions, sample variability, statistical inferences involving one and two populations, analysis of variance, linear correlation and regression analysis. Statistical computer software will be extensively integrated as a tool in the description and analysis of data. The instructor will be using and supporting a TI-83 Plus graphing calculator in all classroom demonstrations. **PREREQUISITE:** MATH 233, or MATH 240, or MATH 233A and MATH 233B, or MATH 242 with a grade of 'C' or better.

MATH 6 Calculus for Business / Social Science

Units: 3.0 **Hours:** 3.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

This course applies the fundamental principles and techniques of calculus to problems in business, economics, the life sciences and the social sciences. Topics will include limits, and differentiation and integration of linear, quadratic, polynomial, exponential and logarithmic functions. This course is not intended for students majoring in engineering, the physical sciences or math. Using a calculator is required. Graphing calculator is recommended. (C-ID: MATH 140) **PREREQUISITE:** Mathematics 235 or Mathematics 240 with a grade of 'C' or better.

MATH 7 Finite Mathematics

Units: 3.0 **Hours:** 3.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

Systems of linear equations and matrices, introduction to linear programming, finance, counting techniques and probability, properties of probability and applications of probability. **PREREQUISITE:** Mathematics 233 with a grade of 'C' or better.

MATH 8A First Half of Precalculus

Units: 4.0 **Hours:** 4.0 Lecture
Transferable: CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

Math 8A prepares the student for the study of calculus by providing important skills in algebraic manipulation, interpretation, and problem solving at the college level. Topics will include basic algebraic concepts, complex numbers, equations and inequalities of the first and second degree, functions, and graphs, linear and quadratic equations, polynomial functions, exponential and logarithmic functions, systems of equations, matrices and determinants, right triangle trigonometry, and the Law of Sines and Cosines. **PREREQUISITE:** Mathematics 233 with a grade of 'C' or better. The instructor will be using and supporting TI-83 Plus graphing calculator in all classroom demonstrations.

All courses listed here are part of Gavilan College's approved curriculum. All courses are not offered every semester. Check the Class Schedule for current offerings.

MATH 8B Second Half of Precalculus**Units:** 4.0 **Hours:** 4.0 Lecture**Transferable:** CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

Math 8B prepares students for the study of calculus by providing important skills in algebraic manipulation, interpretation, and problem solving at the college level. Topics will include trigonometric functions, identities, inverse trigonometric functions, and equations; applications of trigonometry, vectors, complex numbers, polar and parametric equations; conic sections; sequences, series, counting principles, permutations, mathematical induction; analytic geometry, and an introduction to limits. **PREREQUISITE:** Mathematics 8A with a grade of 'C' or better. **ADVISORY:** Math 208 Survey of Practical Geometry.

MATH 12 Mathematics for Elementary Teachers**Units:** 3.0 **Hours:** 3.0 Lecture**Transferable:** CSU, UC; CSU-GE:B4, GAV-GE:B4

This course is intended for students preparing for a career in elementary school teaching. Emphasis will be on the structure of the real number system, numeration systems, elementary number theory, and problem solving techniques. Technology will be integrated throughout the course. **PREREQUISITE:** High School Geometry and Math 233 (Intermediate Algebra), or, Math 208 (Plane Geometry) and Math 233 (Intermediate Algebra). All courses must be completed with a grade of 'C' or better.

MATH 14 Math for the Liberal Arts**Units:** 3.0 **Hours:** 3.0 Lecture**Transferable:** CSU, UC; CSU-GE:B4, IGETC:2A, GAV-GE:B4

Survey of selected topics from contemporary mathematics to introduce the student to mathematical thinking for the non-specialist. Topics include systems of numeration, algebraic modeling, linear programming, trigonometry, math of finance, probability and statistics, and an introduction to calculus. **PREREQUISITE:** Math 233 with a grade of 'C' or better.

MATH 205 Elementary Algebra**Units:** 5.0 **Hours:** 5.0 Lecture

This course is a standard beginning algebra course, including algebraic expressions, linear equations and inequalities in one variable, graphing, equations and inequalities in two variables, integer exponents, use of a scientific calculator, polynomials, rational expressions and equations, radicals and rational exponents, and quadratic equations. Mathematics 205, 205A and 205B, and 206 have similar course content. This course may not be taken by students who have completed Mathematics 205B or 206 with a grade of "C" or better. This course may be taken for Mathematics 205B credit (2.5 units) by those students who have successfully completed Mathematics 205A with a grade of "C" or better. **PREREQUISITE:** MATH 402 with a grade of 'Pass' or with a 'C' or better, or assessment test recommendation.

MATH 205A First Half of Elementary Algebra**Units:** 2.5 **Hours:** 4.0 Lecture

This course is the first half of the Elementary Algebra course. It will cover signed numbers, evaluation of expressions, ratios and proportions, solving linear equations, and applications. Graphing of lines, the slope of a line, graphing linear equations, solving systems of equations, basic rules of exponents, and operations on polynomials will be covered. **PREREQUISITE:** Math 402 with a grade of 'Pass' or with a 'C' or better, or assessment test recommendation. **ADVISORY:** Concurrent enrollment in Guidance 563A is advised.

MATH 205B Second Half of Elementary Algebra**Units:** 2.5 **Hours:** 4.0 Lecture

This course contains the material covered in the second half of the Elementary Algebra Course. It will cover factoring polynomials, solving quadratic equations by factoring, rational expressions, radicals, and solving quadratic equations. In addition, the course will review applications involving linear equations of one and two variables, finding slopes and graphing linear equations, solving systems of equations with two variables, and solving linear inequalities. Math 205, 205A and 205B, and 206 have similar course content. This course may not be taken by students who have completed Math 205 or 206 with a grade of 'C' or better. **PREREQUISITE:** Math 205A with a grade of 'C' or better. **ADVISORY:** Concurrent enrollment in Guidance 563B is advised.

MATH 208 Plane Geometry**Units:** 3.0 **Hours:** 3.0 Lecture

This course introduces the vocabulary and principles of Euclidean Geometry. Methods of proof including inductive and deductive reasoning will be developed. Concepts of congruence and similarity, angles, lines, polygons, and circles will be covered. Additional topics such as solid geometry, analytical geometry, transformations, and basic trigonometry may be included as time allows. **PREREQUISITE:** Math 430 or equivalent with a grade of "C" or better.

MATH 233 Intermediate Algebra**Units:** 5.0 **Hours:** 5.0 Lecture**Transferable:** GAV-GE:B4

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.

MATH 233A First Half of Intermediate Algebra**Units:** 2.5 **Hours:** 4.0 Lecture

The course will start with a review of basic concepts and then cover the following topics with an emphasis on applications and problem solving strategies: solving linear and absolute value equations; solving linear and compound inequalities; equations and graphs of lines; functions and function notation including composition of functions; solving systems of linear equations and inequalities; operations with polynomials; factoring polynomials; and solving polynomial equations. **PREREQUISITE:** Completion of Mathematics 205 or the equivalent with a grade of 'C' or better.

MATH 233B Second Half of Intermediate Algebra**Units:** 2.5 **Hours:** 4.0 Lecture**Transferable:** GAV-GE:B4

This course will start with a review factoring polynomials, and then cover the following topics with an emphasis on applications and problem solving strategies: solving polynomial equations by factoring; adding, subtracting, multiplying, dividing and simplifying rational expressions and solving rational equations; adding, subtracting, multiplying, dividing and simplifying roots, radicals and complex numbers and solving radical equations; working with composition of functions and inverse functions, working with exponential and logarithmic functions, equations and expressions; employing various methods of solving quadratic equations and inequalities; and graphing quadratic functions. **PREREQUISITE:** Completion of MATH 233A with a grade of 'C' or better.

MATH 235 Integrated Algebra**Units:** 10.0 **Hours:** 10.0 Lecture**Transferable:** GAV-GE:B4

This course is a blend of standard elementary and intermediate algebra courses with a focus on linear equations and inequalities, graphs and functions, systems of equations, polynomials and polynomial functions/ equations, factoring, rational expressions and equations, roots, radicals, and complex numbers, exponential and logarithmic functions, and problem solving strategies. **PREREQUISITE:** MATH 402 with a grade of "Pass" or assessment test recommendation.

MATH 240 Algebra II**Units:** 5.0 **Hours:** 5.0 Lecture**Transferable:** GAV-GE:B4

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.

MATH 242 Algebra II for Statistics**Units:** 5.0 **Hours:** 5.0 Lecture**Transferable:** GAV-GE:B4

Math 242 is for students whose educational plan includes ONLY Math 5 (Freshman-level Statistics). If your major is math, science, engineering, computer science, business, etc., and/or your educational plan includes any college-level math class other than Math 5, or you are unsure about your major, you should take Math 240. Math 240 and Math 242 are not equivalent. Math 242 prepares students for Freshman-level Statistics (Math 5) by covering core concepts from Algebra II and statistics that are needed to understand the basics of college level statistics. Topics include functions, inequalities, radicals, exponential and logarithmic functions, exploratory analysis of categorical, quantitative, single variable and bivariate data, and probability. **PREREQUISITE:** Math 430 with a C or better, or Math 205 with a C or better, or Math 205A and Math 205B with a C or better, or by placement recommendation.

MATH 400 Elements of Arithmetic**Units:** 3.0 **Hours:** 3.0 Lecture and 1.0 Laboratory

This course covers essential arithmetic operations, whole numbers, integers, fractions, decimals, ratio, proportion, percent, applications of arithmetic, and critical thinking, as well as math-specific study skills. This is a pass/no pass course, with pass being given for mastery of the content. Units earned in this course do not count toward the associate degree and/or other certain certificate requirements.

MATH 402 Pre-Algebra**Units:** 3.0 **Hours:** 3.0 Lecture and 2.0 Laboratory

This course covers operations with integers, fractions, decimals and associated applications, ratio, proportion, geometry, and measurements with the emphasis on critical thinking and applications. Elementary algebra topics such as variables, expressions, and solving equations are introduced. This is a pass/no pass course where pass is given for mastery of the above topics. The mastery level is set by the department. **PREREQUISITE:** Completion of Math 400 with a grade of 'C' or better OR completion of Math 400 with a grade of 'P' OR appropriate assessment test score.

MATH 411 Integrated Pre-Algebra**Units:** 6.0 **Hours:** 6.0 Lecture and 1.0 Laboratory

This course is a blend of standard Elements of Arithmetic and Pre-Algebra courses with the focus on operations with whole numbers, fractions, percentages, proportions, and signed numbers. Algebraic topics such as variables, expressions, and solving basic linear equations and applications are introduced. This is a pass/no pass course where pass is given for mastery of the above topics. The mastery level is set by the department. **ADVISORY:** MATH 414

MATH 413 Math Boot Camp**Units:** 1.0 TO 2.0 **Hours:** 1.0 TO 2.0 Lecture

A remedial mathematics course designed for those students who need to learn, or re-learn, the fundamental concepts of math. The primary focus is on operations with whole numbers, fractions, decimals, percentage and real life problems. This is a pass/no pass course. Units earned in this course do not count toward the associate degree and/or certain certificate requirements. This class is an intense preparation for Math 402, Math 430 or Math 411.

MATH 414 Math Boot Camp 1**Units:** 1.0 TO 3.0 **Hours:** 1.0 TO 3.0 Lecture

A remedial mathematics course designed for those students who need to learn, re-learn, or refresh the fundamental concepts of math. The primary emphasis is on whole numbers, fractions, decimals, signed numbers, linear equations, and algebraic structures. This course is a pass/no pass course. Units earned in this course do not count toward the associate degree and/or certain certificate requirements.

MATH 415 Math Boot Camp 2**Units:** 1.0 TO 3.0 **Hours:** 1.0 TO 3.0 Lecture

A remedial mathematics course designed for those students who need to learn, or re-learn the fundamental concepts of math. The primary emphasis is on algebraic expressions, linear/quadratic equations and applications, polynomials, graphing, and functions. This is a pass/no pass course. Units earned in this course do not count toward the associate degree and/or certain certificate requirements.

MATH 430 Algebra I**Units:** 5.0 **Hours:** 5.0 Lecture

This is the first course of algebra. It will cover simplifying algebraic expressions, linear equations and inequalities, linear functions and their graphs, systems of equations, polynomials, factoring, rational expressions, and applications of all of the above. **PREREQUISITE:** Math 402 with a grade of "Pass", or Math 411 or Math 205A with a grade of C or better, or assessment test recommendation.

Medical Terminology: see Business Office Technology

MUSIC**MUS 1A Music History and Literature****Units:** 3.0 **Hours:** 3.0 Lecture**Transferable:** CSU, UC; CSU-GE:C1, IGETC:3A, GAV-GE:C1

A survey of the development of music in western civilization including representative composers from the Medieval to the present. Music 1A will study the music and styles from the Medieval to the Romantic period. **ADVISORY:** Eligible for English 250 and English 260.

MUS 1B Music History and Literature**Units:** 3.0 **Hours:** 3.0 Lecture**Transferable:** CSU, UC; CSU-GE:C1, IGETC:3A, GAV-GE:C1

A survey of the development of music in western civilization including representative composers from the Medieval period to the present. Music 1B will study the music and styles from late Romanticism to the present. **ADVISORY:** Eligible for English 250 and English 260.

MUS 2 History of Jazz and Rock**Units:** 3.0 **Hours:** 3.0 Lecture**Transferable:** CSU; CSU-GE:C1, IGETC:3A, GAV-GE:C1, F

This course covers the introduction and history of jazz and rock music from traditional, ragtime, boogie-woogie, swing, bebop, and cool, to various contemporary jazz, rock and fusion art forms. It includes a study of the forces that have shaped the art from European, African, Latin, and African-American influences. The class explores the contributions and conflicts of African-American influences throughout the history and development of this American music.

MUS 3A Harmony / Theory / Musicianship I**Units:** 4.0 **Hours:** 3.0 Lecture and 3.0 Laboratory**Transferable:** CSU, UC; CSU-GE:C1, GAV-GE:C1

Fundamentals of music, beginning harmony. (C-ID: MUS 120) **ADVISORY:** Must be taken in sequence.

MUS 3B Harmony / Theory / Musicianship II**Units:** 4.0 **Hours:** 3.0 Lecture and 3.0 Laboratory**Transferable:** CSU, UC; GAV-GE:C1

Fundamentals of music, intermediate harmony, and musicianship. **ADVISORY:** Must be taken in sequence.

MUS 3C Harmony / Theory / Musicianship III**Units:** 4.0 **Hours:** 3.0 Lecture and 3.0 Laboratory**Transferable:** CSU, UC; GAV-GE:C1

Continuation of Music 3AB. Chromatic harmony, analysis and composition. (C-ID: MUS 140) **ADVISORY:** Music 3B

MUS 3D Harmony / Theory / Musicianship IV**Units:** 4.0 **Hours:** 3.0 Lecture and 3.0 Laboratory**Transferable:** CSU, UC; GAV-GE:C1

Continuation of Music 3C. Analysis and composition. (C-ID: MUS 150) **ADVISORY:** Music 3C