LT 197 Topics in Library Technology (.5-3)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Note: May be taken 4 times
Transfer acceptability: CSU
Selected topics in Library Technology. Refer to the Class Schedule for topics covered.

Mathematics (MATH)

Contact the Mathematics Department for further information.
(760) 744-1150. ext. 2535
Office: E-11

Associate in Arts Degrees -

AA Degree requirements are listed in Section 6 (green pages).
• Mathematics

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

Any student wishing to earn an A.A. Degree must meet competence requirements at the MATH 60 level. Methods by which a student can demonstrate competence are listed under "Competence Requirements" in front of this catalog. Students wishing to enroll in MATH 50, 50A, 56, 60, 110, 115, 120, 125, and 135 must participate in the mathematics placement process or meet the prerequisite listed in the catalog. The mathematics placement test may be taken two times within a two year period, through the Palomar College Counseling Center. The assessment and placement process determines eligibility for enrollment in these courses. Students interested in determining their readiness to enroll in MATH 140 may additionally request to take the College Algebra Asset Test. Arrangements for this test can be made in the Counseling Center.

PROGRAM OF STUDY

Mathematics

Provides the background to satisfy upper division course work in mathematics and for entry-level positions that require a knowledge of mathematics such as Technical Assistant and Mathematical Technician. The student is advised to check with the school to which he or she wishes to transfer for additional courses which may be required.

A.A. DEGREE MAJOR

Program Requirements		Units
MATH 140	Calculus with Analytic Geometry, First Course	5
MATH 141	Calculus with Analytic Geometry, Second Course	4
MATH 205	Calculus with Analytic Geometry, Third Course	4
MATH 120 or	Elementary Statistics	
MATH 200 or	Introduction to Linear Algebra	
MATH 206	Calculus with Differential Equations	3,4
MATH/		
CSCI 146 or	FORTRAN 90 for Mathematics and Science	3
CSCI 110 or	Programming for Computer Sciences	4
CSCI 220	C Programming	4
TOTAL UNITS		**19 - 21**

Recommended Electives: PHYS 230, 231, 232; CHEM 110, 115; MATH 245

COURSE OFFERINGS

Courses numbered under 50 are non-degree courses.
Courses numbered under 100 are not intended for transfer credit.

MATH 10 Basic Arithmetic (3)
3 hours lecture
Basic arithmetic computational skills, with an emphasis on the whole numbers, fractions, decimals, and an introduction to the concepts of area and perimeter. Designed for students who are lacking fundamental arithmetic skills.

MATH 12 Supplemental Instruction for Basic Arithmetic (1)
1 hour lecture
Note: Credit/No Credit grading only; may be taken 2 times
Supplemental instruction for students enrolled in MATH 10 – Basic Arithmetic. Designed for students who need additional review of basic arithmetic topics.

MATH 15 Prealgebra (3)
3 hours lecture
Note: May be taught in Spanish
The basic arithmetic operations, integers, fractions, decimals, percents, ratio and proportion, basic geometric con¬cepts, problem-solving techniques, and an introduction to algebraic thinking.

MATH 17 Supplemental Instruction for Prealgebra (1)
1 hour lecture
Note: Credit/No Credit grading only; may be taken 2 times
Supplemental instruction for students enrolled in MATH 15 - Prealgebra. Designed for students who need additional review of prealgebra topics.

MATH 42 Supplemental Instruction for Beginning Algebra (1)
1 hour lecture
Note: Credit/No Credit grading only; may be taken 2 times
Supplemental instruction for students enrolled in MATH 50 - Beginning Algebra. Designed for students who need additional review of beginning algebra topics.

MATH 42A Supplemental Instruction for Beginning Algebra Part I (1)
1 hour lecture
Note: Credit/No Credit grading only; May be taken 2 times
Supplemental instruction for students enrolled in MATH 50A - Beginning Algebra. Designed for students who need additional review of beginning algebra topics.

MATH 42B Supplemental Instruction for Beginning Algebra Part II (1)
1 hour lecture
Note: Credit/No Credit grading only; May be taken 2 times
Supplemental instruction for students enrolled in MATH 50B - Beginning Algebra. Designed for students who need additional review of beginning algebra topics.

MATH 47 Mathematics Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Note: May be taken 4 times
Topics in Mathematics. See class schedule for specific topic covered. Course title will designate subject covered.

MATH 50 Beginning Algebra (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 15 or eligibility determined through the math placement process
Note: May be taught in Spanish
Elementary algebra which emphasizes mathematical reasoning, problem solving, and real-world applications using numerical, algebraic, and graphic models. Topics include problem-solving techniques, algebraic expressions, polynomials, linear equations, linear inequalities, linear and nonlinear graphs, systems of linear equations in two variables, integer exponents, proportions, and radicals.

MATH 50A Beginning Algebra Part I (2)
2 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 15 or eligibility determined through the math placement process
Note: Not open to students with credit in MATH 50
First part of Math 50 with emphasis on mathematical reasoning, problem solving, and real-world applications using numerical, algebraic, and graphical models. Topics include problem-solving techniques, algebraic expressions, polynomials, linear equations, linear inequalities, linear and nonlinear graphs, and natural number exponents.

MATH 50B Beginning Algebra Part II (2)
2 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 50A
Note: Not open to students with credit in MATH 50
Second part of Math 50 with continued emphasis on mathematical reasoning, problem solving, and real-world applications, using numerical, algebraic, and graphical models. Topics include problem-solving techniques, algebraic expressions, polynomials, linear equations, linear inequalities, linear and nonlinear graphs, systems of linear equations in two variables, integer exponents, proportions, and radicals.

MATH 55 Geometry (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in either MATH 50 or MATH 50B or eligibility determined through the math placement process
Fundamentals of plane geometry and selected topics from solid geometry developed by both inductive and deductive processes. Especially recommended for prospective teachers and/or students who will be taking Trigonometry.

MATH 56 Beginning/Intermediate Algebra (6)
6 hours lecture-2 hours laboratory
Prerequisite: Eligibility determined through the math placement process
Note: Not open to students with credit in MATH 60
A review of elementary algebra and in-depth coverage of intermediate algebra intended for the student who has previous experience with algebra. Meets requirement for the A.A. degree. Meets prerequisite requirement for mathematics courses number 100-120, and 135.

MATH 60 Intermediate Algebra (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in either MATH 50 or MATH 50B or eligibility determined through the math placement process
Graphic, numeric, analytic and applied perspectives on topics including linear, quadratic, exponential and logarithmic functions, exponents and radicals, linear and nonlinear systems of equations and inequalities.

MATH 97 Mathematics Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Prerequisite: A minimum grade of 'C' in either MATH 50 or MATH 50B, or eligibility determined through the Math Placement process
Note: May be taken 4 times
Topics in Mathematics. See Class Schedule for specific topic offered. Course title will designate subject covered.

MATH 100 Exploring Mathematics (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 56 or MATH 60 or eligibility determined through the math placement process
Note: May not be used to clear high school deficiency for students transferring to UC systems Fall 1994 or later
Transfer acceptability: CSU; UC – MATH 100, 105 and 106 combined: maximum credit, one course
Selected topics from logic, modern algebra, number theory, and geometry. Designed to give the student an introduction to the structure of mathematics and its applications. Recommended for liberal arts students.

MATH 105 Concepts of Elementary Mathematics I (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 56 or MATH 60 or eligibility determined through the math placement process
Transfer acceptability: CSU; UC – MATH 100, 105 and 106 combined: maximum credit, one course; CAN MATH 4
Selected topics from the real number system including properties and operations with integers and rational numbers as fractions and decimals. Additional topics include problem solving, numeration systems, number theory, and topics in logic and set theory. Recommended for prospective teachers.

MATH 105L Concepts of Elementary Mathematics I Laboratory (1)
2 hours lecture/laboratory
Prerequisite: Completion of, or concurrent enrollment in MATH 105
Transfer acceptability: CSU
This is a lab to accompany Math 105. The course focuses on children's mathematical thinking regarding topics in the Math 105 curriculum including, but not limited to, place value, arithmetic operations with whole numbers, fractions, and problem-solving strategies. Students view and analyze vidoeclips of children being interviewed regarding their mathematical thinking, and students also interview children at the first and fourth/fifth grade levels, evaluating the strategies used and analyzing and reflecting upon the mathematical thinking involved. Recommended for prospective elementary and middle school teachers.

MATH 106 Concepts of Elementary Mathematics II (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 105
Transfer acceptability: CSU; UC – MATH 100, 105 and 106 combined: maximum credit, one course
An extension of Mathematics 105, including selected topics from two-and-three-dimensional geometry, motion geometry, and measurement. Recommended for prospective elementary and junior high school teachers, parents, and liberal arts students.

MATH 110 College Algebra (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 56 or MATH 60 or eligibility determined through the math placement process
Transfer acceptability: CSU; UC – MATH 110 and 135 combined: maximum credit, 4 units; CAN MATH 10
Study of the behavior and characteristics of functions from graphic, numeric, analytic and applied perspectives, including general polynomial functions, rational functions, exponential and logarithmic functions, and sequences. Systems of equations in several variables with an emphasis in matrix solutions.

MATH 115 Trigonometry (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 56 or MATH 60 or eligibility determined through the math placement process
Transfer acceptability: CSU; CAN MATH 8
The trigonometric functions and their applications including emphasis on the analytical aspects, identities, and trigonometric equations.

MATH 120 Elementary Statistics (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 56 or MATH 60 or eligibility determined through the math placement process
Transfer acceptability: CSU; UC – MATH 120, BIOL 215, and PSYC/SOC 205, combined: maximum credit, one course; CAN STAT 2
Selected topics include tabular and graphical representation of data, counting principles, permutations, combinations, discrete and continuous probability distributions, sampling distributions, the Central Limit Theorem, an introduction to inferential statistics, and simple linear regression analysis. Applications from the fields of business, economics, life sciences, social sciences, and the physical sciences.

MATH 130 Calculus for the Social Sciences (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 110 or eligibility determined through the math placement process
Note: Not open to students with credit in MATH 140
Transfer acceptability: CSU; UC – MATH 130 and 140 combined: maximum credit, one course; CAN MATH 30
Functions and their graphs including exponential and logarithmic functions, single variable calculus, limits, differentiation, integration and their applications, multivariable calculus, with application to business, social sciences and behavioral science.

MATH 135 Precalculus Mathematics (5)
5 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 115 or eligibility determined through the math placement process
Transfer acceptability: CSU; UC – MATH 110 and 135 combined: maximum credit, 4 units; CAN MATH 16

Designed for students who intend to take calculus. Emphasizes study of the behavior and characteristics of functions from graphic, numerical, analytic, and applied perspectives. Includes trigonometric functions, general polynomial functions, rational functions, exponential functions, logarithmic functions, absolute value functions, functions with rational exponents, and sequences. Selected topics from analytic geometry and linear systems are also presented.

MATH 140 Calculus With Analytic Geometry, First Course (5)
5 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 135, or MATH 110 and MATH 115, or eligibility determined through the math placement process
Transfer acceptability: CSU; UC – MATH 130 and 140 combined: maximum credit, one course; CAN MATH 18; MATH 140+141=CAN MATH SEQ B; MATH 140+141+205=CAN MATH SEQ C
An introduction to analytic geometry, differentiation and integration of algebraic and transcendental functions of a single variable, and applications of differentiation.

MATH 141 Calculus With Analytic Geometry, Second Course (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 140
Transfer acceptability: CSU; UC; CAN MATH 20; MATH 140+141= CAN MATH SEQ B; MATH 140+141+205=CAN MATH SEQ C
Continuation of MATH 140. Topics include definite integrals and their applications; methods of integration (including the use of modern computational technology as appropriate); indeterminate forms; improper integrals; sequences; infinite series; Taylor series; conic sections; polar coordinate; and parametric equations from analytic, graphic, and numeric perspectives.

MATH 146 Fortran-90 for Mathematics and Science (3)
2 hours lecture-3 hours laboratory
Prerequisite: A minimum grade of 'C' in MATH 135 or MATH 110 and MATH 115, or a passing grade on the appropriate placement test
Note: Cross listed as CSCI 146
Transfer acceptability: CSU; UC
Programming in FORTRAN 90 to solve typical problems in mathematics, computer science, physical sciences, and engineering. Programming is done on a PC.

MATH 197 Mathematics Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Prerequisite: A minimum grade of 'C' in either MATH 56 or MATH 60, or eligibility determined through the math placement process
Note: May be taken 4 times
Transfer acceptability: CSU; UC – Credit determined by UC upon review of course syllabus
Topics in Mathematics. See Class Schedule for specific topic offered. Course title will designate subject covered.

MATH 200 Introduction to Linear Algebra (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 141
Transfer acceptability: CSU; UC; CAN MATH 26
Matrices, determinants, vectors, linear dependence and independence, basis and change of basis, linear transformations, and eigen values.

MATH 205 Calculus With Analytic Geometry, Third Course (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 141
Transfer acceptability: CSU; UC; CAN MATH 22; MATH 140+141+ 205=CAN MATH SEQ C
Vectors in the plane and space, three-dimensional coordinate system and graphing, vector-valued functions and differential geometry, partial differentiation, multiple integration, and vector calculus.

MATH 206 Calculus With Differential Equations (4)
4 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 205
Transfer acceptability: CSU; UC; CAN MATH 24
A first course in ordinary differential equations from analytic, geometric, numeric and applied perspectives (including the use of modern computational technology as appropriate). Topics include exact, separable, and linear equations; initial value and boundary-value problems; systems of first-order equations; reduction of order; undetermined coefficients; variation of parameters; series solutions; and Laplace transforms.

MATH 245 Discrete Mathematics (3)
3 hours lecture
Prerequisite: A minimum grade of 'C' in MATH 130 or MATH 140, or a passing score on the appropriate placement test
Transfer acceptability: CSU; UC
The study of prepositional and predicate logic, number theory and methods of proof, elements of set theory, relations and functions, the Pigeonhole Principle, sequences, infinite sets, basic counting techniques, permutations, combinations, and applications directed to the field of computer science.

Medical Assisting (MA)

Contact the Life Sciences Department for further information.
(760) 744-1150. ext. 2275
Office: NS-207A

Associate in Arts Degrees -

AA Degree requirements are listed in Section 6 (green pages).
- Administrative Medical Assisting
- Clinical Medical Assisting

Certificates of Achievement -

Certificate of Achievement requirements are listed in Section 6 (green pages).
- Administrative Medical Assisting
- Clinical Medical Assisting

PROGRAMS OF STUDY

Administrative Medical Assisting

Provides specific skills for entry level positions as an administrative assistant in a physician's office or a medi¬cal clinic.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
MA 50	Introduction to Medical Assisting	3
MA 55	Medical Terminology and Anatomy	3
MA 56	Medical Terminology and Anatomy	3
MA 60	Medical Insurance	3
BUS 105	Bookkeeping Fundamentals	3
BUS 125	Business English	3
OIS 101*	Beginning Keyboarding	0,3
OIS 102*	Intermediate Keyboarding	0,3
OIS 115	Filing and Records Management	1
OIS 205	Office Procedures	3
OIS 231.1	Medical Machine Transcription I	1
OIS 231.2	Medical Machine Transcription II	1
CE 100**	Cooperative Education	2
TOTAL UNITS		**26 - 32**

* May be exempt by typing proficiency exam.
** Cooperative Education must be related to this major.

Clinical Medical Assisting

Provides specific skills for entry level positions as a clinical assistant in a physician's office or a medical clinic.