

**LS 295 Directed Study in Legal Studies (1, 2, 3)**  
 3, 6, or 9 hours of laboratory  
**Prerequisite:** Approval of project or research by department chairperson/ director  
**Transfer acceptability:** CSU  
 Independent study for students who have demonstrated skills and/or proficiencies in legal Studies subjects and have the initiative to work independently on projects or research outside the context of regularly scheduled classes. Students will work under the personal supervision of an instructor.

## Library Technology (LT)

Contact the Library Technology Department for further information.  
 (760) 744-1150, ext. 2666  
 Office: LL-213-B

### Associate in Arts Degrees -

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

### Certificates of Achievement -

Certificate of Achievement requirements are listed in Section 6 (green pages).  
 • Library Technology

## PROGRAM OF STUDY

### Library Technology

Provides training for students desiring employment as library technical assistants and retraining for those reentering the labor market.

## A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
LT 100	Introduction to Libraries/Info Services	3
LT 110	Library Skills/Technical Services	3
LT 115	Library Operational Skills/Public Services	3
LT 120	Info Sources/Services/Reference	3
LT 130	Library Media and Technology	3
LT 140	Library Services Child/Young Adults	3
CSIT 105	Computer Concepts and Applications	
	or	
CSIT 120	Computer Applications	3
<b>Electives Group I (Select 3 – 4 units)</b>		
BUS 125	Business English	3
BUS 205	Business Writing	3
ENG 100	English Composition	4
<b>Electives Group II (Select 3 units)</b>		
CE 100	Cooperative Education	1, 2, 3
CE 150	Cooperative Education Internship	2, 3
LT 197	Topics in Library Technology	.5-3
<b>TOTAL UNITS</b>		<b>27 – 28</b>

## COURSE OFFERINGS

**LT 100 Introduction to Libraries and Information Services (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 This course is an introduction to the philosophy of library service; history and types of libraries; organization and operation of libraries and history of information. The role of the library/media technician; duties of the library/media technician in public services, reference, and technical services will also be introduced. Topics covered include the basic skills necessary for successful library employment including job search, application procedures, and the relationship of the LMTA to the Librarian, the library staff, and the community served.

**LT 110 Library Operational Skills/Technical Services (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 This course is an introduction to the principles and practices of technical services including cataloging and acquisitions.

**LT 115 Library Operational Skills/Public Services (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 This course will prepare the student to provide public service in the circulation area of the library. Students will be introduced to principles and practices of material shelving, interlibrary loan services, circulation of materials, fines, patron records, supervision, handling cash, maintaining statistics, and building security and emergency procedures.

**LT 120 Information Sources and Services/Reference (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 This course prepares the student to provide assistance in reference services. Students will be introduced to principles and practices of reference interview, reference materials, database searching, online catalogs, World Wide Web searching and evaluation, and bibliographic instruction.

**LT 130 Library Media and Technology (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 Prepares the student to use instructional media in the classroom and library/media center, with emphasis on the role and utilization of computers and other technology in education. Topics covered include the utilization of videotapes, graphics, and other projected and non-projected media, operation of appropriate equipment, and the production of transparencies, graphics and displays.

**LT 140 Library Services for Children and Young Adults (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 Practical use of children's and young adults' materials for readers' advisory, research, and reference service in school library/media centers and public library youth services' departments. Current trends, concerns, and methodology for youth programming and literature activities will be covered.

**LT 154 Information for Life Long Learning (3)**  
 3 hours lecture  
**Transfer acceptability:** CSU  
 This class will prepare students to locate, evaluate, and use information resources through the study of learning styles, goal setting, study skills, health and wellness, and human behavior. Students will work independently and in groups leading to an integrated understanding of themselves and the value of information.

**LT 197 Topics in Library Technology (.5-3)**  
*Units awarded in topics courses are dependent upon the number of lecture hours required of the student. 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

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, 135 and 140 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 MATH 200 or MATH 206	Elementary Statistics Introduction to Linear Algebra Calculus with Differential Equations	3,4
MATH/ CSCI 146 or CSCI 110 or CSCI 220	FORTRAN 90 for Mathematics and Science Programming for Computer Sciences C Programming	3 4 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

Non-degree Applicable

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:** Pass/No Pass grading only; may be taken 2 times

Non-degree Applicable

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

Non-degree Applicable

The basic arithmetic operations, integers, fractions, decimals, percents, ratio and proportion, basic geometric concepts, problem-solving techniques, and an introduction to algebraic thinking.

#### MATH 17 Supplemental Instruction for Prealgebra (1)

1 hour lecture

**Note:** Pass/No Pass grading only; may be taken 2 times

Non-degree Applicable

Supplemental instruction for students enrolled in MATH 15 - Prealgebra. Designed for students who need additional review of prealgebra topics.

#### MATH 42A Supplemental Instruction for Beginning Algebra Part I (1)

1 hour lecture

**Note:** Pass/No Pass grading only; May be taken 2 times

Non-degree Applicable

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:** Pass/No Pass grading only; May be taken 2 times

Non-degree Applicable

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 and/or laboratory may be scheduled by the department. Refer to Class Schedule.

**Note:** May be taken 4 times

Non-degree Applicable

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:** Selected classes may occasionally 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 and/or 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  
 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 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, one course.  
 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  
 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  
 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  
 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, one course.  
 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  
 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  
 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 and/or 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

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

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

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 propositional 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, graphs and trees, and applications directed to the field of computer science.

## Medical Assisting

See Office Information Systems (OIS)

Medical Assisting Clinical not offered at Palomar College

## Microbiology (MICR)

Contact the Life Sciences Department for further information.

(760) 744-1150, ext. 2275

Office: NS-207A

### COURSE OFFERINGS

**MICR 110 Microbiology and Foods (3)**

2 hours lecture - 3 hours laboratory

**Note:** Cross listed as FCS 110

**Transfer acceptability:** CSU

Introduction to the principles of microbiology with an emphasis on foodborne pathogens. Students will explore biological factors and controls relating to reproduction of microorganisms and the effects on public health. This course does not meet microbiology requirement for pre-health students.

**MICR 197 Microbiology Topics (.5 - 4)**

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture and/or laboratory may be scheduled by the department. Refer to Class Schedule.

**Note:** May be taken 4 times

**Transfer acceptability:** CSU

Topics in Microbiology. See Class Schedule for specific topic offered. Course title will designate subject covered.

**MICR 200 Fundamentals of Microbiology (4)**

2 hours lecture - 7 hours laboratory

**Prerequisite:** A minimum grade of 'C' in BIOL 102; or BIOL 200 and CHEM 104 or CHEM 100; or BIOL 100 and CHEM 104 or CHEM 100; or BIOL 105 and CHEM 104 or CHEM 100; or BIOL 101, BIOL 101L and CHEM 104 or CHEM 100

**Transfer acceptability:** CSU; UC

Fundamentals of microbiology including medical aspects of microbiology.

## Multicultural Studies (MCS)

See also Africana Studies, American Indian Studies, American Studies, Chicano Studies, Judaic Studies

Contact the Multicultural Studies Department for further information.

(760) 744-1150, ext. 2206

Office: MD-354

### COURSE OFFERINGS

**MCS 100 Introduction to Multicultural Studies (3)**

3 hours lecture

**Transfer acceptability:** CSU; UC

Social, cultural and political awareness of diverse national and international systems of thought and multicultural groups as revealed through their social institutions and cultural traditions emanating from family, community and nation - state.

**MCS 110 Diverse Cultures in America Today (3)**

3 hours lecture

**Note:** Cross listed as AMS 110

**Transfer acceptability:** CSU; UC

An investigation of prevalent cultural trends in four groups of diverse ethnic and cultural backgrounds in America -- African Americans, Latinos, Chinese, and people of Jewish heritage -- since World War II. Emphasis will be placed on the literary, musical, and artistic expressions of their heritage, social conditions, struggle to become part of the main culture, and response to prejudice, racial, and religious discrimination. Selections dealing with social conditions will include such diverse issues as family life, intergenerational conflicts, and religious traditions.

**MCS 120 The Middle East: From Ancient Cultures to Modern Influences (3)**

3 hours lecture

**Transfer acceptability:** CSU; UC

Explores the development of Middle Eastern cultures and traditions beginning with Mesopotamia and Egypt becoming the cradles of Western civilization to the present. Emphasis on the cultural milieu in which the three monotheistic religions, Judaism, Christianity and Islam, were born. The focus will be on cultural traditions as opposed to religious aspects. The influences of Greek, Roman, and Eastern civilizations in the region, including literary, philosophical, musical, and artistic creations by Middle Easterners in the past century. Discussions will also focus on the current cultural conflicts between religious traditions and cultural groups.