Liberal Arts with an Area of Emphasis in Mathematics and Sciences

Academic and Career Pathway: Math and Sciences

Associate in Arts Degree
Liberal Arts with an Area of Emphasis in Mathematics and Sciences

The science courses in this category examine the physical universe, its life forms, and its natural phenomena. These courses assist the student in developing an appreciation of the scientific method and encourage an understanding of the relationships between science and other human activities. The mathematics courses encourage the understanding of mathematical concepts through the development of quantitative reasoning skills. This area of emphasis provides students with lower-division preparation for a variety of majors within the scientific disciplines, including astronomy, biology, chemistry, and physics, as well as preparation for mathematics majors. Additionally, students may prepare for nursing, kinesiology, public health, and other health science majors. Many of the courses will assist students in prerequisite preparation for graduate programs within the health sciences. A point system using multi-criteria approved by the California Community Colleges Chancellor's Office is used to accept students into the RN program.

To earn this associate degree, students must fulfill the following requirements:

▸ Complete a minimum of 60 degree-applicable units of credit (including major and general education courses).
▸ Complete all courses required in the major with a "C" or "P" or better.
▸ Complete a general education pattern of courses (see Associate Degrees).
▸ Obtain a minimum GPA of 2.0.
▸ Complete a minimum of 12 units in residence at MiraCosta College.

Program Student Learning Outcome Statement

▸ Upon completion of this program, the student will be able to develop communication, critical thinking, and intellectual skills that effectively prepare him/her for lifelong learning and for advanced study in a wide range of majors at the university level.

Select a minimum of 18 units from the following courses. At least one course must be a mathematics course. Courses outside of the mathematics discipline that are approved for the quantitative reasoning requirement on Plans B and C may be used in lieu of a course with the MATH prefix.

ANTH 101	Biological Anthropology	3
or ANTH 101H	Biological Anthropology (Honors)	
ANTH 101L	Biological Anthropology Laboratory	1
or ANTH 101LH	Biological Anthropology Lab (Honors)	
ANTH 105	Evolution of Human Behavior	3
or ANTH 105H	Evolution of Human Behavior (Honors)	
ANTH 190	Primate Behavior and Ecology	3
or ANTH 190H	Primate Behavior and Ecology (Honors)	
ASTR 101	Descriptive Astronomy	3
ASTR 101L	Descriptive Astronomy Laboratory	1
ASTR 120	Life in the Universe	3
ASTR 201	Introductory Astronomy	3
BIO 102	Introductory Biology: Ecology and Environmental Biology	4
BIO 103	Introductory Biology: Animal Diversity	3
BIO 104	Introductory Biology: Botany (Plant Life)	4
BIO 105	Introductory Biology: Biotechnology in Society	3
BIO 106	Introductory Biology: Infectious Diseases–A Global Concern	3
BIO 107	Introductory Biology: Marine Biology	4
BIO 108	Introductory Biology: Ocean Ecology and Sustainability	3
BIO 108L	Introductory Biology: Ocean Ecology and Sustainability Lab	1
BIO 109	Introductory Biology: The Fundamentals of Life on Earth	4
BIO 110	Introductory Biology: Preparation for Pre-Health Professions (Lecture/Lab)	4
or BIO 111 & 111L	Introductory Biology: Preparation for Pre-Health Professions (Lecture) and Introductory Biology: Preparation for Pre-Health Professions (Lab)	
BIO 202	Foundations of Biology: Evolution, Biodiversity, and Organismal Biology	4
BIO 204	Foundations of Biology: Biochemistry, Cell Biology, Genetics, and Molecular Biology	4
or BIO 204H	Foundations of Biology: Biochemistry, Cell Biology, Genetics, and Molecular Biology (Honors)	
BIO 210	Human Anatomy	4
or BIO 210H	Human Anatomy (Honors)	
BIO 220	Human Physiology	4
BIO 230	Introduction to Microbiology	5
BTEC 108	Biomanufacturing: From Gene to Product	3
or BTEC 108H	Biomanufacturing: From Gene to Product (Honors)	
BTEC 180	Biostatistics	4
or BTEC 180H	Biostatistics (Honors)	
BUS 147	Personal Finance	3
BUS 204	Business Statistics	3
or BUS 204H	Business Statistics (Honors)	
CHEM 103	Chemistry and Society: For Non-Science Majors	3
CHEM 103L	Chemistry and Society: For Non-Science Majors (Lab)	1

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CHEM 112	Introductory General, Organic, and Biological Chemistry: For Allied Health Majors	5
CHEM 115	Introductory General Chemistry: For Allied Health Majors	4
or CHEM 115H	Introductory General Chemistry: For Allied Health Majors (Honors)	
CHEM 116	Introductory Organic and Biological Chemistry: For Allied Health Majors	4
CHEM 140	Preparation for General Chemistry: For Science Majors	4
CHEM 150	General Chemistry I: For Science Majors	5
or CHEM 150H	General Chemistry I: For Science Majors (Honors)	
CHEM 151	General Chemistry II: For Science Majors	5
or CHEM 151H	General Chemistry II: For Science Majors (Honors)	
CHEM 210	Organic Chemistry I: For Science Majors	5
or CHEM 210H	Organic Chemistry I: For Science Majors (Honors)	
CHEM 211	Organic Chemistry II: For Science Majors	5
or CHEM 211H	Organic Chemistry II: For Science Majors (Honors)	
CSIT 123	Introduction to Data Analytics	3
EART 106	Earth and Space Science	3
or EART 106H	Earth and Space Science (Honors)	
GEOG 101	Physical Geography	3
GEOG 101L	Physical Geography Laboratory	1
GEOL 101	Physical Geology	3
or GEOL 101H	Physical Geology (Honors)	
GEOL 101L	Physical Geology Laboratory	1
HORT 115	Soil Science	3
HORT 116	Plant Science	4
MATH 102	Math Fundamentals: Mathematics for Life	4
MATH 103	Statistics	4-5
or MATH 103S	Statistics with Integrated Support	
MATH 105	Concepts and Structures of Elementary Mathematics I	3
MATH 106	Concepts and Structures of Elementary Mathematics II	3
MATH 112	Algebraic Concepts for Problem Solving	3
MATH 115	Calculus with Applications	5
MATH 126	Pre-Calculus I: College Algebra	4
or MATH 126S	Pre-Calculus I: College Algebra with Integrated Support	
MATH 131	Pre-Calculus II: Trigonometry and Analytic Geometry	4
or MATH 131H	Pre-Calculus II: Trigonometry and Analytic Geometry (Honors)	
MATH 150	Calculus and Analytic Geometry I	5
or MATH 150H	Calculus and Analytic Geometry I (Honors)	
MATH 155	Calculus and Analytic Geometry II	4
or MATH 155H	Calculus and Analytic Geometry II (Honors)	
MATH 226	Discrete Mathematics	4
or MATH 226H	Discrete Mathematics (Honors)	
MATH 260	Calculus and Analytic Geometry III	4
or MATH 260H	Calculus and Analytic Geometry III (Honors)	
MATH 265	Differential Equations	4
or MATH 265H	Differential Equations (Honors)	
MATH 270	Linear Algebra	4
or MATH 270H	Linear Algebra (Honors)	
NUTR 100	Nutrition Today	3
or NUTR 100H	Nutrition Today (Honors)	
NUTR 120	Principles of Food Science with Lab	3
OCEA 101	Introduction to Oceanography	3
or OCEA 101H	Introduction to Oceanography (Honors)	
OCEA 101L	Introductory Oceanography Laboratory	1
PHSN 106	Introduction to Physical Science: Physics and Chemistry	3
PHSN 108	Introduction to Climate Change	3
or PHSN 108H	Introduction to Climate Change (Honors)	
PHYS 111	Introductory Physics I	4
or PHYS 111H	Introductory Physics I (Honors)	
PHYS 112	Introductory Physics II	4
or PHYS 112H	Introductory Physics II (Honors)	
PHYS 151	Principles of Physics I	4
or PHYS 151H	Principles of Physics I (Honors)	
PHYS 152	Principles of Physics II	4
or PHYS 152H	Principles of Physics II (Honors)	
PHYS 253	Principles of Physics III	4
or PHYS 253H	Principles of Physics III (Honors)	
PHYS 280	Introduction to Electronics	3
PSYC 104	Statistics for Behavioral Science	4
or PSYC 104H	Statistics for Behavioral Science (Honors)	
PSYC 260	Physiological Psychology	3
SOC 125	Introduction to Statistics in Sociology	4