LIBERAL ARTS & SCIENCES: EMPHASIS IN MATHEMATICS, PHYSICAL AND NATURAL SCIENCES

PROGRAM OVERVIEW

This area of emphasis offers a broad and interdisciplinary foundation in the sciences necessary for continued training at the upper division (or advanced) level for many bachelor's degree programs in the natural sciences including biology, chemistry, geology, mathematics, physics, and many others. It is a starting point for students who are preparing for careers in business, industry, medicine, health sciences, education, and government, where scientific and technical skills are in great demand.

PLEASE NOTE: The courses that universities and colleges require for transfer vary. When selecting courses for transfer purposes, students should consult with Counseling Services to determine the particular transfer requirements of specific transfer institutions.

REQUIREMENTS for the AA DEGREE

To qualify for this degree, you must meet these requirements:

- Minimum of 60 degree applicable units
- Minimum 2.0 GPA
- Complete general education requirements with one of the following GE patterns
    - LACCD GE pattern
    - CSU GE
    - IGETC pattern
- Complete a minimum of 18 units from area of emphasis coursework
- Courses must be completed with a grade of "C" or better

PROGRAM LEARNING OUTCOMES (PLO's)

Upon completion of the Degree program, students are able to:

- Apply scientific principles, theories, and/or models to explain or predict the behavior of natural physical phenomena.
- Apply scientific knowledge and reasoning to evaluate the human interaction with the natural world and identify major issues impacting society.

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Associate in Arts Degree
Major Units: 18

COURSE REQUIREMENTS

Complete 18 units with a minimum of **3 units from each of the following categories** listed below:

LIST A: LIFE SCIENCES:

ANATOMY 001	Human Anatomy	4
ANTHRO 101	Physical Anthropology	3
BIOLOGY 003	Introduction to Biology	4
BIOLOGY 005	Introduction to Human Biology	4
BIOLOGY 006	General Biology I w/Lab	5
BIOLOGY 007	General Biology II w/Lab	5
MICRO 001	Introductory Microbiology w/ Lab	5
MICRO 020	General Microbiology w/Lab	4
PHYSIOL 001	Introduction to Human Physiology	4
PSYCH 002	Biological Psychology	3

LIST B: PHYSICAL SCIENCES:

ASTRON 001	Elementary Astronomy	3
ASTRON 005	Fundamentals of Astronomy Lab.	1
CHEM 051	Fundamentals of Chemistry	5
CHEM 070	Introductory Organic and Biochemistry	4
CHEM 101	General Chemistry I	5
CHEM 102	General Chemistry II	5
CHEM 211	Organic Chemistry for Science Majors I	5
CHEM 212	Organic Chemistry for Science Majors II	5
CHEM 221	Biochemistry for Science Majors	5
EARTH 001	Earth Science	3
ELECTRN 002	Introduction to Electronics	3
ENG GEN 151	Materials of Engineering	3
ENG GEN 220	Electrical Circuits I	4
ENG GEN 231	Dynamics	3
ENV SCI 001	The Human Environment: Physical Processes	3
GEOG 001	Physical Geography	3
GEOLOGY 001	Physical Geology	3
GEOLOGY 006	Physical Geology Lab	1
PHYSICS 006	General Physics I	4
PHYSICS 007	General Physics II	4
PHYSICS 011	Introductory to Physics w/Lab	4
PHYSICS 012	Physics Fundamentals	3
PHYSICS 014	Physics Fundamentals Laboratory	1
PHYSICS 101	Physics for Engineers and Scientists I	5
PHYSICS 102	Physics for Engineers and Scientists II	5
PHYSICS 103	Physics for Engineers and Scientists III	5

LIST C: MATHEMATICS:

MATH 215	Principles of Mathematics I	3
MATH 227	Statistics	4
MATH 227S	Statistics with Support	4
MATH 230	Mathematics for Liberal Arts Students	3
MATH 235	Finite Mathematics	5
MATH 236	Calculus for Business & Social Sciences	5
MATH 241	Trigonometry with Vectors	4
MATH 241S	Trigonometry with Vectors with Support	4
MATH 245	College Algebra	3
MATH 260	Precalculus	5
MATH 260S	Precalculus with Support	5
MATH 265	Calculus with Analytic Geometry I	5
MATH 266	Calculus with Analytic Geometry II	5
MATH 267	Calculus with Analytic Geometry III	5
MATH 270	Linear Algebra	3
MATH 272	Methods of Discrete Mathematics	5
MATH 275	Ordinary Differential Equations	3

Total major units **18 min.**

General Education Requirements

Choose any general education pattern below:

- LACCD GE pattern 21 units
- CSU GE Breadth 39 units
- IGETC 37 units

Degree applicable elective units to meet the 60 unit requirement

Total Degree units **60**

Which GE Pattern you choose to follow is based on your transfer plans. Speak with a counselor to find out more about which GE pattern to follow.