GENERAL STUDIES AS - SCIENCE AND QUANTITATIVE REASONING

To meet the General Studies degree requirements, a student must complete the following:

I. **AA/AS General Education Requirements (see Degree Requirements section of the catalog).**
II. **Choose a minimum of 18 units. Minimum 3 units from Science and 3 units from Analytical Thinking and Quantitative Reasoning.**

The remaining units can be taken from either category.

This emphasis is intended to involve inquiry into the physical universe and its life forms with consideration of facts and principles which form the foundations of living and non-living systems. Students will explore scientific methodologies as investigative tools, the acquisition and use of evidence, and the past and present influences of science on world civilizations. Understanding and analysis of basic mathematical and quantitative reasoning including analytical thinking concepts will be explored.

The Program-level Student Learning Outcomes (PSLOs) below are outcomes that students will achieve after completing specific degree / certificate requirements in this program. Students will:

1. Solve problems using fundamentals of mathematics, natural and/or computer science.
2. Utilize mathematical skills to analyze data and/or solve problems.
3. Analyze basic concepts of physical and biological science to evaluate scientific information and solve scientific problems.

Note: All courses must be completed with a letter grade of "C" or higher or "Pass."

Code	Title	Units
Science		
ANTH-130	Introduction to Biological Anthropology	
ANTH-131	Biological Anthropology Laboratory	
ASTR-110	Descriptive Astronomy	
ASTR-112	General Astronomy Laboratory	
ASTR-120	Exploration of the Solar System	
BIO-105	Marine Biology	
BIO-110	Environmental Biology	
BIO-112	Contemporary Issues in Environmental Resources	
BIO-114	Heredity, Evolution and Society	
BIO-118	Introduction to Human Biology	
BIO-120	Principles of Biology	
BIO-140	Human Anatomy	
BIO-141	Human Physiology	
BIO-141L	Laboratory in Human Physiology	
BIO-144	Anatomy and Physiology I	
BIO-145	Anatomy and Physiology II	
BIO-150	Field Study of the Natural History of the Greater San Diego Region	
BIO-152	Paramedical Microbiology	
BIO-230	Principles of Cellular, Molecular and Evolutionary Biology	
BIO-240	Principles of Ecology, Evolution and Organismal Biology	
CHEM-102	Introduction to General, Organic and Biological Chemistry	
CHEM-110	Environmental Chemistry	
CHEM-113	Forensic Chemistry	
CHEM-115	Fundamentals of Chemistry	
CHEM-116	Introductory Organic and Biochemistry	
CHEM-117	Introductory Biochemistry	
CHEM-120	Preparation for General Chemistry	
CHEM-141	General Chemistry I	
CHEM-142	General Chemistry II	
CHEM-231	Organic Chemistry I	
CHEM-232	Organic Chemistry II	
CHEM-241	Organic Chemistry I Lecture	
CHEM-241L	Organic Chemistry I Laboratory	
CHEM-242	Organic Chemistry II Lecture	
CHEM-242L	Organic Chemistry II Laboratory	
GEOG-120	Physical Geography: Earth Systems	
GEOG-121	Physical Geography: Earth Systems Laboratory	
GEOG-140	Meteorology: Weather and Climate	
GEOG-150	Field Study of the Natural History of the Greater San Diego Region	
GEOL-104	Earth Science	
GEOL-110	Planet Earth	
GEOL-111	Planet Earth Laboratory	
GEOL-121	Earth History	
GEOL-150	Field Study of the Natural History of the Greater San Diego Region	
GEOL-210	Geology of California	
GEOL-220	Geology of the National Parks	
GEOL-230	Natural Disasters	
OCEA-112	Introduction to Oceanography	
OCEA-113	Oceanography Laboratory	
OCEA-150	Field Study of the Natural History of the Greater San Diego Region	
PSC-100	Physical Science for Elementary Education	
PSC-110	Introduction to the Physical Sciences	
PSC-111	Introduction to Physical Sciences Laboratory	
PHYC-110	Introductory Physics	
PHYC-130	Fundamentals of Physics	
PHYC-131	Fundamentals of Physics	
PHYC-201	Mechanics and Waves	
PHYC-202	Electricity, Magnetism, and Heat	
PHYC-203	Light, Optics, and Modern Physics	
SCI-110	Introduction to Scientific Thought	
Analytical Thinking and Quantitative Reasoning		
ANTH-215	Statistics for the Behavioral Sciences	

BIO-215	Statistics for Life Sciences
CSIS-119	Introduction to Computer Programming
CSIS-165	Assembly Language and Machine Architecture
CSIS-240	Discrete Structures
CSIS-250	Introduction to Python Programming
CSIS-251	Intermediate Python Programming and Fundamental Data Structures
CSIS-255	Introduction to Programmable Logic Controllers
CSIS-293	Introduction to Java Programming
CSIS-294	Intermediate Java Programming and Fundamental Data Structures
CSIS-296	Introduction to C++ Programming
CSIS-297	Intermediate C++ Programming
ECON-215	Statistics for Business and Economics
GEOG-104	Introduction to Geographic Information Science
MATH-120	Quantitative Reasoning
MATH-125	Structure and Concepts of Elementary Mathematics I
MATH-126	Structure and Concepts of Elementary Mathematics II
MATH-160	Elementary Statistics
MATH-170	Analytic Trigonometry
MATH-175	College Algebra
MATH-176	Precalculus: Functions and Graphs
MATH-178	Calculus for Business, Social and Behavioral Sciences
MATH-180	Analytic Geometry and Calculus I
MATH-245	Discrete Mathematics
MATH-280	Analytic Geometry and Calculus II
MATH-281	Multivariable Calculus
MATH-284	Linear Algebra
MATH-285	Differential Equations
PHIL-125	Critical Thinking and Philosophical Composition
PHIL-130	Logic
PSC-120	Fundamentals of Scientific Computing (MATLAB)
PSY-215	Statistics for the Behavioral Sciences
SOC-215	Statistics for the Behavioral Sciences