GENERAL STUDIES: SCIENCE AND MATHEMATICS

The Associate Degree in General Studies with an Area of Emphasis provides an opportunity for students to design a program of study meaningful and appropriate to their own needs and academic interests. The degree includes general education and a focused area of study. Students may choose to earn this degree for preparation for employment or for personal development.

Requirements

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

I. **AS or AA General Education Requirements** (see Degree Requirements and Transfer Information section)
   and

II. **Choose a minimum of 18 units**
   Students must complete a minimum of three units in Science and three units in Mathematics (limitation of one statistics course). The remaining twelve units may be taken from any category.

The Associate in Science in General Studies with an Emphasis in Science and Mathematics will be awarded to students upon completion of general education degree requirements and 18 units in this area. These courses emphasize the study of mathematical and quantitative reasoning skills and apply the facts and principles that form the foundations of living and non-living systems. Students will recognize and utilize the methodologies of science as investigative tools, as well as the limitations of science. Students will use mathematical skills to solve numerical problems encountered in daily life, and more advanced skills for applications in the physical and life sciences.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Solve problems using fundamentals of mathematics, engineering, natural and/or computer science.
- Utilize mathematical skills to analyze data and/or solve problems.
- Use the scientific method of inquiry and techniques to answer questions about physical and biological processes.
- Analyze basic concepts of physical and biological science to evaluate scientific information and solve scientific problems.

Code	Title	Units
Science		
ANTH-130	Introduction to Biological Anthropology	3
ASTR-110	Descriptive Astronomy	3
ASTR-112	General Astronomy Laboratory	1
BIO-112	Contemporary Issues in Environmental Resources	3
BIO-115	Biology of Alcohol and Other Drugs	3
BIO-122	The Secret Life of Plants	4
BIO-130	General Biology I	3
BIO-131	General Biology I Laboratory	1
BIO-133	Ethnoecology	3
BIO-134	Ethnobotany	3
BIO-135	Ethnobotany/Ethnoecology Lab	1
BIO-140	Human Anatomy	4
BIO-141	Human Physiology	3
BIO-141L	Laboratory in Human Physiology	1
BIO-152	Paramedical Microbiology	5
BIO-230	Principles of Cellular, Molecular and Evolutionary Biology	4
BIO-240	Principles of Ecology, Evolution and Organismal Biology	5
BIO-251	Human Dissection	1
CHEM-102	Introduction to General, Organic and Biological Chemistry	5
CHEM-115	Fundamentals of Chemistry	4
CHEM-120	Preparation for General Chemistry	4
CHEM-141	General Chemistry I	5
CHEM-142	General Chemistry II	5
CHEM-231	Organic Chemistry I	5
CHEM-232	Organic Chemistry II	5
ET-110	Introduction to Electricity and Electronics	4
GEOG-120	Physical Geography: Earth Systems	3
GEOG-121	Physical Geography: Earth Systems Laboratory	1
GEOL-104	Earth Science	3
GEOL-105	Physical Geology: Earth Systems Laboratory	1
GEOL-110	Planet Earth	3
GEOL-111	Planet Earth Laboratory	1
KUMEY-133	Ethnoecology	3
KUMEY-134	Ethnobotany	3
KUMEY-135	Ethnobotany/Ethnoecology Lab	1
OCEA-112	Introduction to Oceanography	3
OCEA-113	Oceanography Laboratory	1
PHYC-110	Introductory Physics	4
PHYC-130	Fundamentals of Physics	4
PHYC-131	Fundamentals of Physics	4
PHYC-201	Mechanics and Waves	5
PHYC-202	Electricity, Magnetism, and Heat	5
PHYC-203	Light, Optics, and Modern Physics	5
Mathematics		
BIO-215	Statistics for Life Sciences	3
MATH-160	Elementary Statistics	4
MATH-170	Analytic Trigonometry	3
MATH-175	College Algebra	4
MATH-176	PreCalculus: Functions and Graphs	6
MATH-178	Calculus for Business, Social and Behavioral Sciences	4
MATH-180	Analytic Geometry and Calculus I	5
MATH-245	Discrete Mathematics	3
MATH-280	Analytic Geometry and Calculus II	4

MATH-281	Multivariable Calculus	4
MATH-284	Linear Algebra	3
MATH-285	Differential Equations	3
PSY-215	Statistics for the Behavioral Sciences	4

CADD and Engineering

CADD-115	Engineering Graphics	3
CADD-120	Introduction to Computer-Aided Drafting and Design	3
CADD-125	Solid Modeling Design	3
CADD-129	Engineering Solid Modeling	3
CADD-131	Architectural Computer-Aided Drafting and Design	3
ENGR-100	Introduction to Engineering and Design	4
ENGR-119	Basic Engineering CAD	3
ENGR-120	Engineering Computer Applications	3
ENGR-125	Solid Modeling Design	3
ENGR-129	Engineering Solid Modeling	3
ENGR-200	Engineering Mechanics-Statics	3
ENGR-210	Electric Circuits	4
ENGR-218	Plane Surveying	4
ENGR-220	Engineering Mechanics-Dynamics	3
ENGR-270	Digital Design	4

Computer Science

CS-119	Program Design and Development	3
CS-119L	Program Design and Development Lab	1
CS-165	Assembly Language and Machine Architecture	4
CS-181	Introduction to C++ Programming	4
CS-182	Introduction to Java Programming	4
CS-240	Discrete Structures	3
CS-281	Intermediate C++ Programming and Fundamental Data Structures	4
CS-282	Intermediate Java Programming and Fundamental Data Structures	4