

LIBERAL ARTS: SCIENTIFIC INQUIRY AND QUANTITATIVE REASONING - ASSOCIATE IN ARTS

The Associate in Arts in Liberal Arts: Scientific Inquiry and Quantitative Reasoning degree emphasizes the natural, physical, and life science areas of study which examine the physical universe, its life forms and its natural phenomenon. This degree emphasizes the development of college-level mathematical and quantitative reasoning skills, evidence based reasoning and logical deduction. Students will be able to demonstrate an understanding of the methodologies of science as investigative tools. Students will also examine the influence that the acquisition of scientific knowledge has on the development of the world's civilizations.

This degree may prepare students for a narrow or interdisciplinary focus in the Scientific and Mathematic areas of study to pursue similar majors at four-year institutions.

Courses approved within the general education standards in the areas of Scientific Inquiry and Quantitative Reasoning may be used to fulfill major preparation requirements. Students should consult with a Counselor in planning for fulfillment of these degree requirements.

A grade of "C" or better is required for each course in the major or area of emphasis. A "P" (Pass) grade is an acceptable grade for courses in the major or area of emphasis if the course is taken on a Pass/No Pass basis.

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

- Apply scientific concepts, theories, and reasoning and quantitative understanding, methods and proficiency to assess, evaluate, and solve real-world problems.
- Demonstrate knowledge and application of evidence based reasoning, logical deduction, mathematical reasoning, and empirical methods of measurement.
- Utilize laboratory techniques and protocols for the purpose of observation and experimentation.
- Investigate and generate scientific explanation of theoretical principles, natural phenomena, empirical research findings and quantitative data analysis.

Major Requirements

Course	Title	Credits
Complete 18 units from courses listed below:		18
ANTH 062	Introduction to Physical Anthropology	3
ASTRO 010	Introduction to Astronomy	3
ASTRO 010L	Introductory Astronomy Lab	1
BIOL 004A	General Principles and Cell Biology	5
BIOL 004B	Biodiversity and Organismal Biology	5
BIOL 020	Human Biology	4
or BIOL 020H	Honors Human Biology	
BIOL 021	General Biology	4
BIOL 061	Human Heredity	3

BIOL 062	Plants and Human Welfare	3
BIOL 063	Ecology	3
BIOL 064	Marine Biology	4
BIOL 071	Human Anatomy	5
BIOL 072	Human Physiology	5
BIOL 074	General Microbiology	5
BUS 060	Fundamentals of Business Statistics	3
CHEM 001A	General Chemistry	5
or CHEM 001AH	Honors General Chemistry	
CHEM 001B	General Chemistry	5
CHEM 010	Everyday Chemistry	4
CHEM 012A	Organic Chemistry	5
CHEM 012B	Organic Chemistry	5
CHEM 015	Fundamentals of Chemistry	4
or CHEM 015H	Honors Fundamentals of Chemistry	
CHEM 032A	Intro to General, Organic, & Biological Chemistry	4
CHEM 032B	Intro to General, Organic, & Biological Chemistry	4
CHEM 061	Introduction to Fermentation Chemistry	3
CHEM 065	Quantitative Analysis	4
CIS 107	Technest 2: Data Science	3
ENVIR 010	Environmental Science	4
GEOG 010	Introduction to Physical Geography	3
GEOL 010	Physical Geology	3
GEOL 010L	Physical Geology Laboratory	1
GEOL 015	Earth Science	3
GEOL 015L	Earth Science Laboratory	1
MATH 020	College Algebra	3
MATH 021	Precalculus Algebra	4
MATH 022	Trigonometry	3
MATH 025	Precalculus Algebra and Trigonometry	6
MATH 052	Mathematics for Elementary Education	3
MATH 054	Mathematics for Technical Fields	3
MATH 061	Finite Mathematics	3
MATH 062	Calculus for Business and the Social Sciences	3
MATH 070	Discrete Mathematics	4
MATH 071	Calculus I With Analytic Geometry	5
or MATH 071H	Honors Calculus I With Analytic Geometry	
MATH 072	Calculus II with Analytic Geometry	5
MATH 073	Multivariable Calculus	5
MATH 078	Differential Equations	4
MATH 079	Linear Algebra	3
MATH 080	Discrete Structures for Computer Science	4
STAT C1000	Introduction to Statistics	3
METEO 010	Weather and Climate	3
OCEAN 010	Descriptive Oceanography	3
PHYS 002A	Algebra/Trigonometry-Based Physics I	4
PHYS 002B	Algebra/Trigonometry-Based Physics II	4
PHYS 004A	General Physics	5
PHYS 004B	General Physics	5
PHYS 004C	General Physics	5

PSYCH 031	Biological Psychology	3
Total Units		18

AA Degree Requirements

Course	Title	Credits
Major Requirements		18
General Education Requirements		34
Degree Applicable Electives		8
	Complete two courses for the U.S. History, Constitution, and American Ideals Requirement (US-1, US-2, and US-3)	
Total Units		60