

NATURAL SCIENCES – ASSOCIATE IN SCIENCE DEGREE

Top Code: 4902.00

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 degree programs in the natural sciences including biology, chemistry, environmental science, geology, mathematics, plant science, physics, and many others. It is a starting point for students who are preparing for careers in health sciences, medicine, business, agriculture, 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.

Program Outcomes

1. Successfully apply the scientific method to solve problems.
2. Collect and analyze data related to the natural world.
3. Complete preparation for advanced study in one focal discipline within the Natural Sciences Division.

Requirements for the area of Emphasis

Courses must be completed with a grade of C or better. All courses must be numbered 001–099. Students must complete 18 units with at least 3 units in three of the following six categories listed below:

Code	Title	Units
Biological Sciences		
ANTH 001 or ANTH 001H	PHYSICAL ANTHROPOLOGY HONORS PHYSICAL ANTHROPOLOGY	3
ANTH 001L	LABORATORY IN PHYSICAL ANTHROPOLOGY	1
ANAT 025	HUMAN ANATOMY	4
BIOL 002	ANIMAL BIOLOGY	4
BIOL 003	HUMAN BIOLOGY	4
BIOL 004	BOTANY/PLANT DIVERSITY AND ECOLOGY	4
BIOL 005A	TOPICS IN APPLIED BOTANY/URBAN TREE IDENTIFICATION & BIOLOGY	1
BIOL 005B	TOPICS IN APPLIED BOTANY: PLANT BIOLOGY IN DEMONSTRATION GARDENS	1
BIOL 005C	TOPICS IN APPLIED BIOLOGY - MEDICINAL PLANTS	1
BIOL 010A	CELLULAR BIOLOGY, GENETICS AND EVOLUTION	5
BIOL 010B	THE DIVERSITY OF LIFE ON EARTH: STRUCTURE, FUNCTION AND ECOLOGY	4
BIOL 010C	GENETICS	3
BIOL 011 or BIOL 011H	GENERAL BIOLOGY HONORS GENERAL BIOLOGY	4
BIOL 014	FIELD BIOLOGY	4
BIOL 016	MARINE BIOLOGY	4
BIOL 025	FIELD STUDIES	1

BIOL 026	BIOLOGY FIELD STUDIES	2
BIOL 028	INTRODUCTION TO BIOINFORMATICS	3
BIOL 038	CELL AND MOLECULAR BIOLOGY	4
BIOL 039	MODERN HUMAN GENETICS	4
MICR 002	MICROBIOLOGY	4
NUTR 011	HUMAN NUTRITION	3
PYSO 001	HUMAN PHYSIOLOGY	4
PSYC 002	INTRODUCTORY BIOLOGICAL PSYCHOLOGY	3
Chemistry		
CHEM 001A	GENERAL CHEMISTRY AND CHEMICAL ANALYSIS I	5
CHEM 001B	GENERAL CHEMISTRY AND CHEMICAL ANALYSIS	5
CHEM 002A	CHEMISTRY - GENERAL, ORGANIC AND BIOCHEMISTRY I	4
CHEM 002B	CHEMISTRY-GENERAL, ORGANIC AND BIOCHEMISTRY II	4
CHEM 008A	ORGANIC CHEMISTRY I	5
CHEM 008B	ORGANIC CHEMISTRY II	5
CHEM 022	INTRODUCTORY CHEMISTRY	4
Environmental Sciences		
ENVS 001	INTRODUCTION TO ENVIRONMENTAL SCIENCE	4
ENVS 002	HUMAN IMPACT ON THE ENVIRONMENT	3
ENVS 003	CHEMISTRY AND THE ENVIRONMENT	4
ENVS 010	ENVIRONMENTAL HORTICULTURE	3
ENVS 011	SOIL SCIENCE	3
ENVS 012	PLANT MATERIALS AND USAGE I	3
ENVS 030	ENVIRONMENTAL FIELD INVESTIGATIONS	2
ENVS 040	ENVIRONMENTAL FIELD LABORATORY	1
Geosciences		
GEOG 001	PHYSICAL GEOGRAPHY	3
GEOG 001L	PHYSICAL GEOGRAPHY LABORATORY	1
GEOG 004	WEATHER AND CLIMATE	3
GEOG 011	INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS	3
GEOG 012	MAP INTERPRETATION AND SPATIAL ANALYSIS	3
GEOG 113	DATA ACQUISITION AND MANAGEMENT	3
GEOL 001	PHYSICAL GEOLOGY	4
GEOL 001F	PHYSICAL GEOLOGY FIELD STUDIES	1
GEOL 002	HISTORICAL GEOLOGY	4
GEOL 002F	HISTORICAL GEOLOGY FIELD STUDIES	1
GEOL 003	EARTH AND SPACE SCIENCE	4
GEOL 003F	EARTH AND SPACE SCIENCE FIELD LABORATORY	1
GEOL 004	GEOLOGY OF CALIFORNIA	3
GEOL 006	MINERALOGY	4
GEOL 012	PHYSICAL OCEANOGRAPHY	3
GEOL 012F	PHYSICAL OCEANOGRAPHY FIELD STUDIES	1
GEOL 012L	PHYSICAL OCEANOGRAPHY LABORATORY	1
GEOL 022	THE AGE OF DINOSAURS	3
GEOL 023	NATURAL DISASTERS	3
GEOL 030A	CHANNEL ISLANDS - COASTAL CALIFORNIA	2
GEOL 030C	COAST RANGES - SAN ANDREAS FAULT	2
GEOL 030D	SIERRA NEVADA	2
GEOL 030E	OWENS VALLEY - DEATH VALLEY	2

GEOL 030F	GEOLOGICAL FIELD INVESTIGATION-ROCKY MOUNTAINS	2
GEOL 030G	KLAMATH MOUNTAINS - NORTHERN CALIFORNIA	2
GEOL 030H	INTERNATIONAL STUDY AREAS	2
GEOL 030I	PROBLEMS IN STRUCTURAL GEOLOGY	2
GEOL 030J	COLORADO PLATEAU	2
GEOL 030K	PROBLEMS IN REGIONAL STRATIGRAPHY	2
GEOL 030L	APPLICATIONS OF GLOBAL POSITIONAL SYSTEM	2
GEOL 030M	GEOLOGICAL FIELD INVESTIGATION - PACIFIC RIM /PACIFIC ISLAND	2
GEOL 040	GEOLOGICAL FIELD LABORATORY	1
Mathematics & Statistics		
MATH 003	COLLEGE ALGEBRA FOR STEM	5
MATH 005A	SINGLE VARIABLE CALCULUS I	5
	or MATH 005A#HONORS SINGLE VARIABLE CALCULUS I	
MATH 005B	SINGLE VARIABLE CALCULUS II	5
	or MATH 005B#HONORS SINGLE VARIABLE CALCULUS II	
MATH 005C	MULTIVARIABLE CALCULUS	5
	or MATH 005C#HONORS MULTIVARIABLE CALCULUS	
MATH 008	PRECALCULUS TRIGONOMETRY	4
MATH 009	PRECALCULUS MATHEMATICS	5
MATH 010	LINEAR ALGEBRA AND APPLICATIONS	5
MATH 022	DISCRETE MATHEMATICS	4
MATH 055	DIFFERENTIAL EQUATIONS	4
STAT 050	ELEMENTARY STATISTICS	4
STAT 050H	HONORS ELEMENTARY STATISTICS	4
Physics & Physical Sciences		
ASTR 001	ELEMENTARY ASTRONOMY	4
ASTR 012	DESCRIPTIVE INTRODUCTION TO ASTRONOMY	3
PHSC 003	PHYSICAL SCIENCES	3
PHSC 003L	LABORATORY FOR PHYSICAL SCIENCE	1
PHYS 001A	PHYSICS FOR SCIENTISTS AND ENGINEERS I: MECHANICS	5
PHYS 001B	GENERAL PHYSICS	5
PHYS 001C	GENERAL PHYSICS	5
PHYS 001D	GENERAL PHYSICS	5
PHYS 002A	GENERAL PHYSICS	4
PHYS 002B	GENERAL PHYSICS	4
PHYS 010	DESCRIPTIVE INTRODUCTION TO PHYSICS	3
PHYS 010L	DESCRIPTIVE PHYSICS IN THE LABORATORY	1
PHYS 031A	CALCULUS-BASED COLLEGE PHYSICS I	5
PHYS 031B	CALCULUS-BASED COLLEGE PHYSICS II	5

Visit the Program Mapper (<https://pasadena-city.programmapper.ws/academics/programs/0ec6df98-9f92-550a-dd1b-7175f60b46e5/>) for a suggested sequence of courses.

General Education Requirements for the Associate in Science Degree

- General Information (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/>)
- PCC Local Gen Ed (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#pcclocaltext>)

- CSU Breadth (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#csubreadthtext>)
- IGETC (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#igetctext>)

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