

GENERAL STUDIES PATTERN I: NATURAL SCIENCE 2023-2024, ASSOCIATE IN ARTS

The Associate in Arts in General Studies Pattern I with an emphasis in **Natural Sciences** degree will help students explore and critically examine the physical universe, its life forms, and its natural phenomena that affect many aspects of life. The students will also: learn the roles of hypothesis, measurements, and analysis in the development of scientific theories; be able to formulate an empirical hypothesis, carry out an experiment, critically analyze the data, and arrive at critical, well-thought solutions to a problem by employing proven scientific methodologies, both quantitative and empirical; learn to write scientific laboratory reports and provide an effective oral presentation of scientific research findings.

In addition, graduates of this program will understand the relationship between human activities and sciences and be able to apply natural sciences to improve their surroundings through introductory or integrative courses in anatomy, animal science, anthropology, astronomy, biology, chemistry, EATM, environmental studies, geography, geology, physiology, physics, and psychology.

Course ID	Title	Units/ Hours
ANAT M01	Human Anatomy	4
ANPH M01	Human Anatomy and Physiology	6
ANSC/EATM M17	Animal Diversity	3.5
ANTH M01	Biological Anthropology	3
or ANTH M01H	Honors: Biological Anthropology	
ANTH M01L	Biological Anthropology Lab	1
AST M01	An Introduction to Astronomy	3
AST M01L	An Introduction to Astronomy Laboratory	1
BIOL M01	Introduction to Biology	4
BIOL M02A	General Biology I	5
or BIOL M02AH	Honors: General Biology I	
BIOL M02B	General Biology II	5
BIOL M02C	Genetics and Molecular Biology	5
BIOL M03	Marine Life and Its Environment	4
BIOL M05	Field Biology: A Natural History of California	4
BIOL M16	Human Biology	3
BIOL M16L	Human Biology Lab	1
BIOL M17	Heredity, Evolution and Society	3
BIOL M18	Human Biology for Pre-Allied	3
BOT M01	Introduction to Botany	5
BOT M06	Plants and Society	4
CHEM M01A	General Chemistry I	5
or CHEM M01AH	Honors: General Chemistry I	
CHEM M01B	General Chemistry II	5
CHEM M07A	Organic Chemistry I	5
CHEM M07B	Organic Chemistry II	5

CHEM M11	Foundations of General, Organic, and Biochemistry	5
CHEM M12	Introductory Chemistry I	4
CHEM M13	Introductory Chemistry II	5
ENSC M01	Environmental Science	3
ENSC M01L	Environmental Science Lab	1
ENSC M02	Environment and Human Interactions	4
ENSC M03	Energy Resources and Conservation	3
GEOG M01	Physical Geography	3
GEOG M01L	Physical Geography Lab	1
GEOG M05	Introduction to Weather and Climate	3
GEOL M02	Physical Geology	3
or GEOL M02H	Honors: Physical Geology	
GEOL M02H	Honors: Physical Geology	3
GEOL M02L	Physical Geology Lab	1
GEOL M03	Earth History	3
GEOL M03L	Earth History Lab	1
GEOL M05	The World Ocean	3
GEOL M05L	The World Ocean Lab	1
GEOL M61	Natural Disasters	3
GEOL M121	Earth Science with Lab	4
MICR M01	General Microbiology	5
PHSO M01	Human Physiology	4
or PHSO M01H	Honors: Human Physiology	
PHSC M01	Principles of Physical Science	3
PHSC M01L	Principles of Physical Science Laboratory	1
PHYS M01	Descriptive Physics	3
PHYS M01L	Descriptive Physics Laboratory	1
PHYS M10A	General Physics I	4
PHYS M10AL	General Physics I Lab	1
PHYS M10B	General Physics II	4
PHYS M10BL	General Physics II Laboratory	1
PHYS M20A	Mechanics of Solids and Fluids	4
PHYS M20AL	Mechanics of Solids and Fluids Laboratory	1
PHYS M20B	Thermodynamics, Electricity, and Magnetism	4
PHYS M20BL	Thermodynamics, Electricity, and Magnetism Laboratory	1
PHYS M20C	Wave Motion, Optics, and Modern Physics	4
PHYS M20CL	Wave Motion, Optics, and Modern Physics Laboratory	1
PSY M02	Introduction to Behavioral Neuroscience	3
or PSY M02H	Honors: Introduction to Behavioral Neuroscience	
ZOO M01	Introduction to Zoology	5

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

- 1. Communication Competency
 - a. Attend to and clearly express ideas in written, spoken, numerical, and artistic forms.
 - b. Communicate effectively and logically.
- 2. Information Competency
 - a. Evaluate multiple sources of information to apply it critically and appropriately
 - b. Gather, evaluate, analyze, and synthesize information.

- 3. Quantitative Competence
 - a. Implement quantitative and qualitative models to make predictions, draw conclusions, and make decisions that are logical and feasible.
 - b. Collect, organize, analyze, and process research data in a clear, synthesized format.
- 4. Analytic Inquiry Skills
 - a. Distinguish the modes of inquiry and critique used in the natural, social, and behavioral sciences and the humanities.
 - b. Explain the connections among the various disciplines.
- 5. Ethical Reasoning
 - a. Apply ethical principles to personal, academic, professional and/or community issues.
 - b. Work ethically and effectively with others
- 6. Ability to Engage Diverse Perspectives
 - a. Recognize the multitude of diversities in the physical and human environments and how these diversities impact the individual and society.
 - b. Recognize the diversity of human experience, the role of the natural environment, and the relationship between the two.
 - c. Describe and appreciate the role of culture and the arts in society and in one's personal life.
- 7. Ability to Create
 - a. Act purposefully in combining awareness, critical thinking, and communication skills with personal responsibility in order to originate, innovate, or build upon ideas
- 8. Growth Orientation
 - a. Apply the skills necessary for successful living in an ever-changing and global environment.
 - b. Identify and adopt the concepts of personal health and fitness to enhance the quality of life.