

# GENERAL STUDIES PATTERNS II/III - NATURAL SCIENCES OR MATHEMATICS EMPHASIS, ASSOCIATE IN ARTS

Courses that fulfill the Natural Sciences or Mathematics area of emphasis will examine the physical universe, its life forms and the measurement of natural phenomena. The courses are designed to develop students' appreciation and understanding of the scientific method, along with mathematical evaluation, and to encourage an understanding of the relationships between science/mathematics and other human activities. This emphasis enables the student to take courses that will satisfy lower division major preparation requirements for areas including, but not limited to, Allied Health, Biology, Chemistry, Environmental Science, Geological Sciences, Geography, Health Sciences, Mathematics, Nursing, Physics, and related disciplines.

**Pattern II:** This pattern is intended for students who are planning to transfer to a four-year university in high-unit majors or where completion of CSU GE-Breadth or IGETC is not appropriate or advisable. (See [www.assist.org](http://www.assist.org) or a Ventura College counselor for guidance.) Independent or out-of-state universities may also fall in this category.

**Pattern III:** This pattern is intended for students who are planning to transfer to a California public four-year university (UC or CSU) and plan to use the CSU GE-Breadth or IGETC to fulfill their lower division general education.

Course ID	Title	Units/Hours
<b>Select at least 18 units from the following courses:</b>		
AG V04	Introduction to Soil Science	3
AG V06	Introduction to Plant Science (with Laboratory)	3
AG V22	Introduction to Plant Pathology: Insects and Diseases of Plants	3
AG V30	Plant Propagation and Production	3
AG V42	Plant Identification and Culture: Spring Specimens	3
AG V43	Plant Identification and Culture: Fall Specimens	3
AG V61	Introduction to Animal Science	3
AG V66	Anatomy and Physiology of Animals	4
ANAT V01	Human Anatomy	4
ANPH V01	Introduction to Human Anatomy and Physiology	5
ANTH V01	Biological Anthropology	3
ANTH V01L	Biological Anthropology Laboratory	1
ANTH V35	Introduction to Forensic Science	3
ANTH V35L	Introduction to Forensic Science Laboratory	1
ANTH V36	Forensic Anthropology	3
AST V01	Elementary Astronomy	3
AST V01L	Elementary Astronomy Laboratory	1
BIOL V01	Principles of Biology	3

BIOL V01L	Principles of Biology Laboratory	1
BIOL V03	Evolution, Ecology, and Organismal Biology	5
BIOL V04	Cell and Molecular Biology	5
BIOL V10	Introduction to Environmental Issues	3
BIOL V12	Human Biology	3
BIOL V14	Field Biology	4
BIOL V18	Human Heredity	3
BIOL V29	Marine Biology	3
BIOL V29L	Marine Biology Laboratory	1
CHEM V01A	General Chemistry I	3
CHEM V01AL	General Chemistry I Laboratory	2
CHEM V01B	General Chemistry II	3
CHEM V01BL	General Chemistry II Laboratory	2
CHEM V12A	General Organic Chemistry I	3
CHEM V12AL	General Organic Chemistry I Laboratory	2
CHEM V12B	General Organic Chemistry II	3
CHEM V12BL	General Organic Chemistry II Laboratory	2
CHEM V20	Elementary Chemistry	4
CHEM V20L	Elementary Chemistry Laboratory	1
CHEM V21	Introduction to Organic and Biochemistry	3
CHEM V21L	Introduction to Organic and Biochemistry Laboratory	2
CHEM V30	Chemistry for Health Sciences	4
CHEM V30L	Chemistry for Health Sciences Laboratory	1
CJ V35	Introduction to Forensic Science	3
CJ V35L	Introduction to Forensic Science Laboratory	1
CJ V36	Forensic Anthropology	3
CS V11	Programming Fundamentals	3
CS V17	Discrete Structures	3
CS V30	Beginning C++	3
CS V40	Beginning Java	3
ESRM V01	Introduction to Environmental Issues	3
ESRM V02	Introduction to Environmental Science	3
ESRM V14	Conservation of Natural Resources	3
GEOG V01	Elements of Physical Geography	3
GEOG V01L	Elements of Physical Geography Laboratory	1
GEOG V05	Introduction to Weather and Climate	3
GEOL V02	Physical Geology	3
GEOL V02L	Physical Geology Laboratory	1
GEOL V03	Historical Geology	3
GEOL V03L	Historical Geology Laboratory	1
GEOL V09	Earth Science with Laboratory	4
GEOL V11	Introduction to Oceanography	3
MATH V04	College Algebra	4
MATH V05	Plane Trigonometry	3
MATH V20	Precalculus Mathematics	5
MATH V21A	Calculus with Analytic Geometry I	5
MATH V21B	Calculus with Analytic Geometry II	5
MATH V21C	Multivariable Calculus	5
MATH V22	Introduction to Linear Algebra	3
MATH V23	Introduction to Differential Equations	3

MATH V38	Mathematics for Elementary School Teachers	3
MATH V40	Exploration of Mathematical Ideas	3
MATH V44	Elementary Statistics	4
MATH V46	Applied Calculus	4
MATH V52	Discrete Structures	3
MICR V01	General Microbiology	4
PHSC V01	Concepts in Physical Science	4
PHSO V01	Human Physiology	4
PHYS V01	Elementary Physics	5
PHYS V02A & V02AL	General Physics I: Algebra/Trigonometry-Based and General Physics I Laboratory: Algebra/Trigonometry-Based	4+1
PHYS V02B & V02BL	General Physics II: Algebra/Trigonometry-Based and General Physics II Laboratory: Algebra/Trigonometry-Based	4+1
PHYS V03A & V03AL	General Physics I: Calculus-Based and General Physics I Laboratory: Calculus-Based	4+1
PHYS V03B & V03BL	General Physics II: Calculus-Based and General Physics II Laboratory: Calculus-Based	4+1
PHYS V04 & V04L	Mechanics for Scientists and Engineers and Mechanics Laboratory for Scientists and Engineers	4+1
PHYS V05 & V05L	Electricity and Magnetism for Scientists and Engineers and Electricity and Magnetism Laboratory for Scientists and Engineers	4+1
PHYS V06 & V06L	Optics, Heat, and Modern Physics: For Scientists and Engineers and Optics, Heat, and Modern Physics Laboratory for Scientists and Engineers	4+1
PSY V03	Introduction to Biological Psychology	3
PSY V04	Introductory Statistics for the Social and Behavioral Sciences	4
<b>Required Major Total:</b>		<b>18</b>
<b>GE Pattern:</b>		<b>37-39</b>
<b>Double Counting:</b>		<b>(0-10)</b>
<b>Electives:</b>		<b>3-15</b>
<b>Total Units:</b>		<b>60</b>