SCIENCE CONCENTRATION

The discipline of science is based on laws governing the world around us. Knowledge in this area is generated by development of concepts in matter, motion, and energy in living systems and Earth and space while emphasizing evidence to support claims for its knowledge. This concentration expands on ideas of the branches of science with engagement in the practices to build proficiency and further develop appreciation of the strengths and limitations of science in the real world.

This concentration is aligned to a supplemental authorization in Science that can be added to your future credential. See a concentration advisor for more information.

Students must take at least one 4-unit course at the 300-400 level in the concentration; three courses in the same discipline are recommended.

Chemistry Requirement
Select from the following: 4
CHEM 110 World of Chemistry
CHEM 124 General Chemistry for Physical Science and Engineering I
CHEM 127 General Chemistry for Agriculture and Life Science I

Physics Requirement
Select from the following: 4
PHYS 111 Contemporary Physics for Nonscientists
PHYS 121 College Physics I
PHYS 141 General Physics I
PSC 320 Energy, Society and the Environment

Approved Concentration Electives 1
Select from the following: 12
ASTR 102 Introduction to Stars and Galaxies
ASTR 324 Longitude, Navigation, and Timekeeping
BIO 114 Plant Diversity and Ecology
BIO 231 Human Anatomy and Physiology I
BIO 232 Human Anatomy and Physiology II
BIO 302 Human Genetics
BIO 305 Biology of Cancer
BIO/CHEM 308 Genetic Engineering Technology
BOT 121 General Botany
BOT 311 Plants, People and Civilization
BOT 326 Plant Ecology
CHEM 125 General Chemistry for Physical Science and Engineering II
CHEM 126 General Chemistry for Physical Science and Engineering III
CHEM 128 General Chemistry for Agriculture and Life Science II
CHEM 129 General Chemistry for Agriculture and Life Science III
CHEM 312 Organic Chemistry: Fundamentals and Applications
CHEM 314 Biochemistry: Fundamentals and Applications
CHEM 349 Chemical and Biological Warfare
CHEM 377 Chemistry of Drugs and Poisons
ERSC 223 Rocks and Minerals
GEOL 102 Introduction to Geology
GEOL 203 The Geologic Record: Fossils and the History of Life
GEOL 206 Geologic Excursions
GEOL 305 Seismology and Earth Structure
LS 305 Project Based Learning in STEM Education 2
MCRO 221 Microbiology
MCRO 342 Public Health Microbiology
MCRO 421 Food Microbiology
MSCI 111 Survey of Marine Biology
MSCI 330 Technologies for Ocean Discovery
MSCI 440 Communicating Ocean Sciences to Informal Audiences
NR 306 Natural Resource Ecology and Habitat Management
PHYS 122 College Physics II
PHYS 123 College Physics III
PHYS 142 General Physics II
PHYS 143 General Physics III
PHYS 330 Teaching Physics
PSC 201 Physical Oceanography
SCM 302/ENGR 322/HNRS 302 The Learn By Doing Lab Teaching Practicum 2
SCM 360 Selected Environmental Issues of California’s Central Coast
SCM 368 Theory and Practice of STEM Tutoring 3

Total units 20

1 Courses in BIO/BOT/MCR/MSCI may count towards a minor in Biology. Please consult a minor advisor for more information.
2 A maximum of 4 units total from LS 305 and SCM 302/ENGR 322/HNRS 302 may be used in the concentration.
3 This course may not count towards an Introductory Subject Matter Authorization in Science.