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:
- 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:
- 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
Select from the following:
- 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 Seismonology and Earth Structure
- LS 305 Project Based Learning in STEM Education
- 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
- SCM 360 Selected Environmental Issues of California’s Central Coast
- SCM 368 Theory and Practice of STEM Tutoring

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.