Natural Sciences Minor

CSUF offers a Minor in Natural Sciences that should be considered by all prospective elementary teachers as well as potential middle school science teachers.

By completing the minor, future teachers:
- Gain additional preparation in science content areas;
- Learn about important and current concepts and issues in science; and
- Prepare for teaching earth, life, and physical science in middle schools.

The minor readily combines with any major when the student carefully selects the appropriate lower division general education classes. Assuming efficient lower division GE science selections, the minor may require only 9-12 units of additional coursework.

Students interested in a career in teaching middle school science (Elementary Education and/or the Foundational Level General Science Credential) are strongly advised to take GEOL 410 and BIOL 453 as well as at least one course from all four science areas, including chemistry, geology, physics, and biology.

Natural Sciences Minor Requirements

### Lower Division Courses

**Take at least 3 units from each group for a total of 9-11 units**

**Must have an * course from Life Science and a second one from either Physical Sciences or Earth/Astronomical Sciences.**

#### Life Science
3 Units Minimum  
Biology 101, 101L*, 102 or equivalent

#### Earth/Astronomical Sciences
3 Units Minimum  
Geology 101, 101L*, 102*, or equivalent.  
Physics 120

#### Physical Sciences
3 Units Minimum  
Chemistry 100, 100L*, 105, 111, 115 or 120A*, 120B*, Physics/Chem 102*  
Physics 101, 101L*, 115, 211*, 212*

#### Upper Division Courses

12 Units Total: At least 2 units from three course groups: Teacher Education Core, Biology, Chemistry, Geology, and Physics. Natural Sciences Minor advisor must approve course election.

- **Teacher Education Core Courses**  
  Group 1  
  Biology 453, Geology 410

- **Biological Science Courses**  
  Group 2  
  Biology 300, 305, 306, 310, 311, 318, 319, 330, 352, 360, 409, 453

- **Chemistry/Biochemistry Courses**  
  Chemistry 303 A, B, C, 311, and 313 A, B, C

- **Geological Sciences Courses**  
  Geology 310T, 410, 420

- **Physics Courses**  
  Physics 301

*Speak to an advisor or visit [www.assist.org](http://www.assist.org) to review courses that may transfer/articulate with Cal State Fullerton courses.*
Using the Natural Sciences Minor as a Stepping Stone to Teaching Middle School Science

There are two credential pathways to middle school science teaching:
- Candidates may earn a Multiple Subject Credential and add the Foundational Level General Science Credential by passing #118 and #119 CSET Subtests AND successful completion of EDSC 542S Advanced Methods of Teaching Middle School Science (offered each summer)
- Candidates earn a Single Subject Credential in Foundational Level General Science by completing the single subject credential program.

The Minor in Natural Sciences helps prepare candidates in content areas of CSET subtests:
- #118 Subtest I General Science: Astronomy; Dynamic Processes of the Earth; Earth Resources; Waves; Forces and Motion; Electricity and Magnetism
- #119 Subtest II General Science: Ecology; Genetics and Evolution; Molecular Biology and Biochemistry; Cell and Organismal Biology; Heat Transfer and Thermodynamics; Structure/Properties of Matter

Important Steps
1. Make an appointment! Either visit the College of Natural Sciences and Mathematics: Science Education program (MH-161) OR email the Natural Sciences Minor Advisor Dr. Megan Tommerup mtommerup@fullerton.edu
2. Attend an Overview for the Multiple Subject or Single Subject. The Overview schedule is found at ed.fullerton.edu/adtep/Overviews.htm
3. If planning to pursue a Multiple Subject Credential, explore funding opportunities by viewing Add a Single Subject Credential at ed.fullerton.edu/trp
4. If planning to pursue a Single Subject Credential, visit the Science Education Program for more information ed.fullerton.edu/SecEd/Credential_Prog

Why Choose Cal State Fullerton for your Credential Program?

PROGRAM QUALITY
- Program completers are in high demand by Orange County schools as well as those in surrounding counties.
- Programs are accredited by the National Council on Teacher Education (NCATE), the most prestigious accrediting body in the nation, and also by the California Commission on Teacher Credentialing (CCTC).

RELEVANT CURRICULUM AND FIELDWORK
- Field based program allows students to apply theory to practice in classroom settings. Cohorts of students study and work together under the direction and supervision of a team of university and K-12 faculty.
- Intern program allows qualified candidates to earn their credential while employed as public school classroom teachers.

FACULTY AND LOCAL PARTNERSHIPS
- Education faculty are involved in our neighboring schools, collaborating with teachers to improve policy and practice. They have published numerous articles; obtained millions of dollars in annually funded grants; and are recognized regionally, nationally, and internationally.

Center for Careers in Teaching www.fullerton.edu/cct/

Natural Sciences Minor Advisor
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