

Physics Education*

1. Lower-Division Requirements (73-74 units):

- a. PHYS 040A, PHYS 040B, PHYS 040C, PHYS 040D, PHYS 040E
- b. MATH 008B or MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046
- c. CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC
- d. EDUC 003, EDUC 004
- e. LING 020 or LING 021

2. Upper-Division Requirements (75 units):

- a. PHYS 130A, PHYS 130B, PHYS 134, PHYS 135A, PHYS 135B, PHYS 136, PHYS 156A, PHYS 156B
- b. PHYS 139L, PHYS 142L (3 units)
- c. Two electives from the following list (8 units): PHYS 111, PHYS 145A, PHYS 145B, PHYS 145C, PHYS 150A, PHYS 150B, PHYS 151, PHYS 163, PHYS 164, PHYS 165, PHYS 166, PHYS 168, PHYS 177
- d. EDUC 100B, EDUC 109, EDUC 110, EDUC 116, EDUC 139, EDUC 174, EDUC 177A

3. Upper-Division Recommendations (4 units):

EDUC 104/MATH 104

** Based on preliminary degree option proposals. Please refer to the UCR General Catalog for specific requirements for each degree option. For more specific and up-to-date major related advising, please consult with academic/faculty advisors offering the degree. See an SMI advisor about EDUC-related courses.*



What is CaTEACH-SMI?

CaTEACH-SMI is a UC systemwide initiative to recruit highly qualified science and mathematics majors to prepare for careers in science and mathematics teaching careers. The program resulted from a compact between the Governor of California

and the University of California President.

What are the benefits in getting involved with CaTEACH-SMI?

- Getting involved is FREE and VOLUNTARY
- Receive personalized advising to develop a career pathway. With a customized plan you can:
 - ⇒ Find competitive salaries in school districts of YOUR choice
 - ⇒ Negotiate a starting salary (typically unavailable for NON-STEM teachers)
 - ⇒ Become an emerging leader in your school district, school site, and community
 - ⇒ Develop your professional profile without delaying graduation
 - ⇒ Increase marketability of your University of California degree
 - ⇒ Access financial support opportunities (e.g. reimbursement, stipends, scholarships) in pursuit of teaching
 - ⇒ Access teaching related materials and resources
 - ⇒ Getting involved with pre-teaching professional development seminars and events

California Teach-Science/Mathematics Initiative (CaTEACH-SMI)



STEM Degree Options: Emphasizing in Teaching and Education

**CaTEACH-SMI
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INTRODUCTION

With the economy increasingly reliant on science, technology, engineering, and mathematics (STEM) and the anticipated large scale retirement of qualified teachers, pre-teaching preparation is essential to promote teacher-student success in and outside the classrooms.

In collaboration with STEM faculty members, several degree options with emphasis in science/ mathematics education were developed. These featured degree options include: **geoscience education (BA)**, **mathematics for secondary school teachers (B.S.)**, and **physics education (B.S.)**. Each of these degree options provide a framework for guiding students interested in pursuing a career in secondary education. The degree options enable students to prepare for entrance into a teaching credential program, with a possibility of intern teaching. Because these degree options include core upper- and lower-division major courses, participating students gain comprehensive subject content knowledge, which facilitates effective lesson development for the classroom.

In addition, participating students are able to develop early teaching foundation, which includes early pedagogical training through field work and foundation education courses.

Mathematics for Secondary School Teachers*

- Lower-Division Mathematics Requirements (24 units):
MATH 009A, MATH 009B, MATH 009C,
MATH 010A, MATH 010B, MATH 046
- Upper-Division Mathematics Requirements (36 units):
 - MATH 131, MATH 133, MATH 140, MATH 144, MATH 153
 - Four courses from:
MATH 132, MATH 136, MATH 137, MATH 138A, MATH 145A, MATH 145B, MATH 149A, MATH 149B, MATH 149C, MATH 151A, MATH 151B, MATH 151C, MATH 171, MATH 172
- Additional Mathematics & Related Discipline Requirements (12 units):
 - CS 010
 - CS 011/MATH 011
 - STAT 155
- Natural Sciences (16-20 units):
 - BIOL 002 or BIOL 003 or BIOL 005A and BIOL 005LA
 - CHEM 001A and CHEM 001LA or CHEM 01HA and CHEM 1HLA, CHEM 001C and CHEM 001LC
 - PHYS 002A or PHYS 040A
 - CHEM 001B and CHEM 01LB or CHEM 01HB and CHEM 1HLB or PHYS 002B or PHYS 40B or an additional laboratory Biological science course
- Social Sciences (16 units):
 - One course in ECON or POSC
 - One course in ANTH
 - One course in PSYC
 - One course in SOC
- Mathematics Education and Education Requirements (18 or 19 units):
EDUC 104/MATH 104, EDUC 003 or EDUC 004 or EDUC 100B or equivalent, EDUC 109, EDUC 110, EDUC 139
- Recommended Courses:
LING 020 or LING 021, EDUC 116, EDUC 174, EDUC 17A

Geoscience Education*

- Lower-Division Geoscience Requirements (20 units):
GEO 001, GEO 002, GEO 003/BIOL 010, GEO 004, GEO 010
- Upper-Division Geoscience Requirements (26-30 units):
 - GEO 115, GEO 122
 - Four courses from:
GEO 100, GEO 101, GEO 116, GEO 118, GEO 123, GEO 124, GEO 132, GEO 136, GEO 137, GEO 140, GEO 147, GEO 151, GEO 152/BIOL 152, GEO 157, GEO 160, GEO 168, GEO 169
- Mathematics Requirements (12 units):
MATH 009A, MATH 009B, MATH 009C
- Natural Sciences Requirements (28-31 units):
 - BIOL 002, or BIOL 005A and BIOL 005LA
 - CHEM 001A and CHEM 001LA, CHEM 001B and CHEM 001LB, CHEM 001C and CHEM 001LC
 - PHYS 002A and PHYS 002B and PHYS 002C, or PHYS 040A and PHYS 040B and PHYS 040C
- Humanities Requirements (to count towards College requirements of 20 units for the B.A.)
LING 020 or LING 021
- Education Requirements (41 units):
EDUC 003, EDUC 004, EDUC 100B or equivalent, EDUC 104/MATH 104, EDUC 109, EDUC 110, EDUC 116, EDUC 139, EDUC 174, EDUC 177A

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