

Cal Teach Program Summary

UC San Diego

<p>Key feature(s) that distinguishes Cal Teach from (your) other teacher preparation programs</p>	<ol style="list-style-type: none"> 1. Strong emphasis on the development of pedagogical content knowledge. UCSD's new math and science education minors bridge the gap between the math and science content students are learning in their STEM majors and their education courses and field work. For example, students spend time solving math and science problems, exploring multiple solution approaches, and discussing the implications for teaching and learning. 2. Genuine partnership between the math/science departments and our education program. The new minors were developed through this partnership, and math/science faculty share the teaching with education studies faculty. New LPSOEs (Academic Senate Faculty who focus on teaching) have been hired in the sciences, mathematics and education studies to develop the Cal Teach courses and share the teaching.
<p>Structure of the undergraduate portion of your Cal Teach program</p>	<p>Math Education Minor or Science Education Minor, 34 quarter units</p> <ol style="list-style-type: none"> 1) Teaching Math/Science: The Challenge (optional, 1 unit, pre-CaT1) 2) Intro. To Teaching Math/Science & Practicum (2+2 units, CaT1) 3) Foundations of Teaching and Learning Math/Science I&II (4+4 units) 4) Math & Science Teaching/Learning & Practicum, A (4+2 units, CaT2) 5) Language, Culture and Education (4 units) 6) Teaching and Learning & Practicum, B&C (4+2+4+2 units, CaT3&4) <p>Students may begin the minors with an optional short seminar (#1) that introduces the types of difficulties students have in learning math and science, and the ways effective teaching can make math and science intrinsically stimulating for all students. The first required courses in the minors, (#2), help undergraduates reflect on their own and younger students' understandings of math and science, as they explore recent research on learning, solve math and science problems, and interact with secondary school students and teachers. The upper division courses build on the lower division courses in the minors with a deeper exploration of the research on math and science learning, the nature of science and math, math and science problem solving, innovative math and science curricula (#3), and a more extensive field experience (#4). The minor is rounded out with a course that explores the mutual influence of language, culture and education (#5) and the most intensive of the undergraduate field experiences (#6).</p>
<p>Alternative pathways to the credential at</p>	<ol style="list-style-type: none"> 1) General education minor Does not include courses specific to math or science teaching and learning, but includes #5 and #6 above, as well as a selection of additional

your campus	<p>education courses.</p> <p>2) Majors—Mathematics Secondary Education, Chemical Education, General Physics/Secondary Education</p> <p>Students in these majors have the option of taking the new Cal Teach courses, or they take a course sequence similar to the general education minor.</p> <p>Traditionally, only the Math Secondary Education Major has attracted large numbers of students. For science students who are contemplating multiple career options, a regular science major combined with a science education minor offers more flexibility (in terms of going on to graduate school) than the science education majors.</p>
Type/format of your credential program(s)	<p>UCSD has an intern credential program.</p> <p>When students complete their bachelor’s degree (with one of the Minors, or Math/Science Education Majors), they will have completed an average of 140 hours of fieldwork. They are eligible to become intern teachers who teach in local schools and are paid while they complete their credential.</p> <p>The Education Studies Program at UCSD offers a combined credential and Master of Education degree for those seeking the California Preliminary Single Subject Credential in Biology, Chemistry, Geosciences, Mathematics, and Physics for secondary school teachers. The M.Ed./Single Subject Credential Professional Course of Study consists of required Professional Preparation and additional Master of Education coursework, plus a yearlong paid Internship. Seminars offered in the evening throughout the academic year address classroom management, theories of teaching and learning, educating special-needs students, and advanced teaching practices.</p> <p>Taking one of the Education Minors or Majors reduces UCSD’s Master’s/Teaching Credential Program from two years to one year plus a summer (15 months).</p>
Student numbers and demographics	<p>Approximately 400 students have taken at least one UCSD Cal Teach course. Total cumulative enrollments are 800.</p> <p>Our undergraduate profile is available at: http://studentresearch.ucsd.edu/sriweb/UCSDCollegeProfile.pdf . We do not have separate demographic data on Cal Teach students.</p>
Other important elements of your program.	<p>The research-based theoretical framework, DNR, guides the design and implementation of Cal Teach. Its three leading principles, Duality, Necessity, and Repeated-reasoning form a system for addressing students’ intellectual needs and curricular needs (Harel, 2008).</p>
Website	<p>http://physicalsciences.ucsd.edu/academic/science_math.ed/</p>