UNIVERSITY OF CALIFORNIA, SANTA CRUZ
Education Department
(831) 459-3249 http://education.ucsc.edu

# Science, Technology, Engineering, and Mathematics (STEM) MINOR IN EDUCATION 2009-2010

(Please note that course schedules are subject to change)

The STEM Minor in Education is an undergraduate course of study that explores theories of cognition, learning, pedagogy, and issues of cultural and linguistic diversity in education in the context of science and mathematics education. The STEM Education Minor is designed to support students who are planning to become secondary math or science teachers. The minor provides opportunities to examine basic questions, theories, practices, and research in the field of education in the context of a series of K-12 internships offered through UCSC's Cal Teach program. Students interested in the minor should apply for a Cal Teach internship as early as possible (see http://calteach.ucsc.edu).

Please note that the STEM Minor in Education does not provide a California Teaching Credential. If you are interested in learning more about the UCSC Masters in Education Teacher Credentialing program, please visit the Education Department website (**http://education.ucsc.edu**) or visit the Cal Teach office (Thimann 365).

## STEPS FOR DECLARING A STEM MINOR IN EDUCATION

Download Study Plan-Major/Minor Declaration form and follow the detailed instructions provided online, at **http://advising.ucsc.edu/student/declaration/index.html**

To declare the STEM Education Minor, students will complete the general education and college requirements on the declaration and submit to college for signature approval. Students will then take the study plan to their proposed major for declaration. The Undergraduate Advisor will confirm approval with signatures. Students then come to the Education department's open advising hours, with the completed Study Plan. Our current open advising hours will be posted at the beginning of each quarter on the department's website, at **http://education.ucsc.edu/about_us/**

After reviewing your *Proposed Study Plan*, the Education Undergraduate Advisor will approve, sign, and distribute copies of the completed form to you, your college and to your major department.

## STEM - MINOR IN EDUCATION *SAMPLE* COURSE SEQUENCE:

| Year | Fall | Winter | Spring |
|---|---|---|---|
| **Freshman** | | EDUC 60 | or: EDUC 60 |
| **Sophomore** | EDUC 50 (A, B or C) (2 units) | | |
| **Junior** | EDUC 100 (A, B or C) (2 units) | EDUC 185 (B or C) & EDUC 185L (3 units) | Upper Division Education Elective |
| **Senior** | Upper Division Education Diversity Course | | Upper Division Education Elective |

**STEM-MINOR IN EDUCATION: A total of 8 Education courses (32 units) are <u>required</u> for the minor**

| **I. Five Required "Introduction" Courses (2-5 units)** | | |
|---|---|---|
| **Course Number** | **Course Title and Description** | **Quarter Offered** |
| EDUC 50 (A, B or C) | **<u>Cal Teach 1 (CaT1):</u>** Introductory seminar exploring secondary students, teaching, and schools in the context of science and/or mathematics instruction. Students must concurrently participate in a secondary school internship. (2 units) | Fall 2009 Winter 2010 |
| EDUC 60 | **<u>Introduction to Education: Learning, Schooling, and Society:</u>** This survey course explores the foundations of learning and teaching, the social and political forces within the school systems in the US, and the educational policies and practices in culturally and linguistically diverse communities. (5 units) | Fall 2009 Winter 2010 Spring 2010 |
| EDUC 100 (A, B or C) | **<u>Cal Teach 2 (CaT2):</u>** Examine students, schools, and science and/or mathematics instruction with emphasis on developing an instructional project aligned with state-mandated content standards. Students must concurrently participate in a K-12 school internship. (2 units) | Fall 2009 Spring 2010 |
| EDUC 185B (Mathematics)<br><br>**OR**<br><br>EDUC 185C* (Science) | **<u>Introduction to Teaching Mathematics</u>**: Provides an introduction to principles and practices for teaching mathematics in secondary classrooms; examines theoretical and practical approaches to teaching mathematics; provides and introduction to national and state standards and an overview of mathematics curricula and current issues in mathematics teaching. (5 units) *Taken as a pre-requisite or co-requisite for EDUC 185L.*<br><br>**<u>Introduction to Teaching Science:</u>** Introduction to the principles and practices for teaching science in secondary classrooms. Course examines theoretical and practical *approaches* to teaching science, provides an introduction to national and state standards and an overview of science curricula and current issues in science teaching. (5 units) *Taken as a pre-requisite or co-requisite for EDUC 185L.* | Winter 2010<br>*185C will *not* be offered in Winter 2010 |
| EDUC 185L | **<u>Cal Teach 3 (CaT3):</u> <u>Introduction to Teaching</u>**: Supplements theoretical and practical introduction to the teaching of science or mathematics with subject-pedagogical approaches. Concurrent participation in an advanced Cal Teach internship provides context to apply theory and practical techniques. (3 units)<br>*Pre-requisites: EDUC 50B/C and 100B/C; Pre-requisite or co-requisite: EDUC 185B/C.* | Winter 2010 |
| **II. Upper Division Diversity Courses – Choose three (3) five-unit course from the list below. One (1) must be a diversity course (indicated by an asterisk).** | | |
| EDUC 170* | **<u>E. Asian Schooling & Immigrations</u>:** Historical and contemporary study of education in East, Southeast, and south Asia | Fall 2009 |
| EDUC 181* | **<u>Race, Class, and Culture in Education:</u>** Examines the schooling experience and educational attainment of racial/ethnic minority students in the U.S. Focuses primarily on the domestic minorities. Addresses issues of variability between and within the minority groups and the role of cultural, structural, and psychological factors in the educational attainment of these students. | Fall 2009 |
| EDUC 135* | **<u>Gender & Education:</u>** Examines the role gender plays in shaping attitudes towards educational access, opportunities and expectations. | Winter 2010 |
| EDUC 173 | **<u>Seminar in Critical Pedagogy:</u>** Focuses on involvement in classroom practice pertaining to student & faculty diversity and looks at factors that encourage or impede academic success | Winter 2010 |
| EDUC 177* | **<u>Teaching Culturally and Linguistically Diverse Students Math and Science:</u>** Examines equity issues in the learning and teaching of math and science in culturally and linguistically diverse school settings. | Winter 2010 |
| EDUC 104 | **<u>Ethical Issues & Teaching:</u>** This course emphasizes a philosophical exploration of the moral complexities of teaching. We will read theoretical investigations of these complexities, and we will examine case studies that pose difficult moral questions and illuminate the dilemmas of everyday life in classrooms. The course will be grounded in a dialogical approach to learning | Spring 2010 |
| EDUC 128* | **<u>Immigrants and Education:</u>** Research and theory on the education of immigrant students: Topics include: Americanization movement America's changing demography, identity maintenance and change, homes-school relations, etc. | Spring 2010 |
| EDUC 141* | **<u>Bilingualism and Schooling:</u>** Introduces issues related to the schooling of students who speak languages other than or in addition to English. | Spring 2010 |
| EDUC 171 | **<u>S. & S.E. Asian Schooling & Immigration:</u>** Historical and contemporary study of education in India, Vietnam, Cambodia, Laos and the Philippines, and the adaptation to schooling in the U.S. of immigrant families. Effects of language acquisition, religion and cultural practices, family patterns, socioeconomic status, career aspirations, and parental expectations. Enrollment limited to juniors and seniors. | Spring 2010 |