

Science and Mathematics Education

Graduate School of Education (<http://www-gse.berkeley.edu>)

Group Office: 4533 Tolman Hall, (510) 642-4207

Overview

The Group in Science and Mathematics Education offers a graduate program designed to allow students to combine advanced training in one of the natural sciences, computer science/engineering, or mathematics with the pursuit of central interests in the area of education. Students enrolled in the program will be expected to attain in their chosen scientific discipline a degree of competence comparable to that of a departmental PhD candidate in that discipline. Their thesis research will consist of a project dealing with the development of improved educational approaches research on new instructional models or basic research on learning or cognition in mathematics and science. Upon satisfactory completion of their studies and thesis work, students will obtain the degree of PhD in science and mathematics education.

Admission Requirements

To enter the program, students must have an excellent academic record with a bachelor's or, preferably, a master's degree in a natural science, mathematics, or engineering/computer science. Experience teaching, developing instructional materials, or doing educational or psychological research in these areas will also be favorably considered. Knowledge of psychology, cognitive science, education, or statistics is helpful but not required.

More detailed information about the program and its requirements can be obtained from the group office.

SCMATHE 210 Practicum in Science and Math Education Research and Development 1 - 4 Units

Department: Science and Mathematics Education

Course level: Graduate

Terms course may be offered: Fall and spring

Grading: Letter grade.

Hours and format: 2 hours of meeting per week.

Prerequisites: Consent of instructor.

Practical experience on an educational research or development project on campus or elsewhere for 8-12 hours per week. Class meetings augment research experience with discussions of readings and interaction with guest speakers.

One unit of credit for each four hours of student effort per week. Course may be repeated for credit. Course may be repeated for credit when topic changes.

SCMATHE 220C Instructional Design in Science and Mathematics Education 3 Units

Department: Science and Mathematics Education

Course level: Graduate

Term course may be offered: Spring

Grading: Letter grade.

Hours and format: 3 hours of lecture/discussion per week.

Prerequisites: 220B or consent of the instructor.

Survey of literature on design of instruction in science and mathematics, including development of computer-based instruction. Includes consideration of evaluation methods and development of instruction modules for topics in science and mathematics.

SCMATHE 292 Research Seminar and Colloquium 1 Unit

Department: Science and Mathematics Education

Course level: Graduate

Terms course may be offered: Fall and spring

Grading: Offered for satisfactory/unsatisfactory grade only.

Hours and format: 2 hours of lecture/discussion per week.

Prerequisites: Consent of instructor.

Discussion of current education research carried on by students, faculty, and guest speakers. A written analysis of several presentations required. Course may be repeated for credit. Course may be repeated for credit when topic changes.

SCMATHE 294 Formulation of Educational Research 1 - 3 Units

Department: Science and Mathematics Education

Course level: Graduate

Terms course may be offered: Fall and spring

Grading: Letter grade.

Hours and format: Individual conferences with instructor.

Prerequisites: Consent of instructor.

Development of thesis proposal under supervision of faculty member.

One unit of credit for each four hours of student effort per week. Course may be repeated for credit. Course may be repeated for credit when topic changes.

SCMATHE 295 Research 1 - 12 Units

Department: Science and Mathematics Education

Course level: Graduate

Terms course may be offered: Fall and spring

Grading: Letter grade.

Hours and format: Individual conferences.

Prerequisites: Consent of instructor.

Independent research activities under supervision of a faculty member.

One unit of credit for each four hours of student effort per week. Course may be repeated for credit. Course may be repeated for credit when topic changes.

SCMATHE 299 Individual Reading and Study 1 - 5 Units

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