

2011-13 Cal Poly Catalog

[College of Science and Mathematics](#)

SCM—COLLEGE OF SCIENCE AND MATHEMATICS

SCM 100 Orientation to the College of Science and Mathematics (2) (CR/NC)

Application of learning strategies, problem-solving methodologies, academic planning and career selection for students in the science and mathematics disciplines. Concurrent enrollment in specific orientation or content course is desirable. Credit/No Credit grading only. 1 lecture, 1 activity.

SCM 101 Introduction to the Health Professions (1) (CR/NC)

Preparation for a health professions career and examination of various health professions. Emphasis on planning and developing an individual pre-health plan, including academic course selection, obtaining appropriate experiences/activities, and review of the elements of a strong application. Intended for freshmen and sophomores. Credit/No Credit grading only. 1 lecture.

SCM 150 Supplemental Instruction Discussion (1) (CR/NC)

Facilitated study and discussion of theory, concepts, and applications of content material from selected courses. Credit/No Credit grading only. Total credit limited to 8 units. 1 laboratory. Prerequisite: Concurrent enrollment in the designated section of the associated course.

SCM 201 Orientation to Biotechnology (1) (CR/NC)

Introduction to the diversity of fields in biotechnology. Applications in agriculture, nutrition, medicine and environmental problems. Credit/No Credit grading only. 1 activity. Prerequisite: Completion of a course with a BIO, BOT or MCRO prefix and a course with a CHEM prefix.

SCM 270 Selected Topics (1-4)

Directed group study of selected topics. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures. Prerequisite: Open to undergraduate students and consent of instructor.

SCM 300 Early Field Experience, Science/Mathematics (4) (CR/NC)

Historical, philosophical, and social foundations of public science and mathematics education. Public school curriculum and professional education dispositions. Structured observation and participation in K-12 public schools with attention to instructional practices for diverse learners. Credit/No Credit grading only. 2 lectures, 2 activities. Prerequisite: Sophomore standing. For Math majors or Science and Engineering majors only.

SCM 302 The Learn By Doing Lab Teaching Practicum (2) (CR/NC)

Early teaching experience in an informal science/technology/engineering/mathematics (STEM) teaching and learning environment. Principles of inquiry-driven STEM education, lesson design, implementation and assessment. Intended for undergraduates exploring STEM teaching as a career. Total credit limited to 4 units. Credit/No Credit grading only. 1 seminar, 1 laboratory. Prerequisite: Completion of GE Area B and consent of instructor. *Crosslisted as ENGR 322/SCM 302/HNRS 302. Change effective Summer 2012.*

SCM 320 Technology in London (4) GE Area F

Impact of one or two technologies in modern London. How they developed from the scientific/industrial revolution, as seen through London museums and industries. How solutions to modern problems are dependent on available technology. Specific technology chosen by instructor. 2 lectures, 2 activities. Prerequisite: Junior standing and completion of GE Area B. Concurrent enrollment in London Study Program. Fulfills GE Area F.

SCM 325 Genetic Engineering Technology (4) GE Area F

Introduction to the methodology and techniques used in genetic engineering. Applications in agriculture, nutrition, medicine and environmental problems. Potential benefits and problems, including the underlying ethical questions. Not open to students with credit in CHEM 373. 4 lectures. Prerequisite: Completion of GE Area B2 and B3, including a chemistry course. Recommended: Junior standing. Fulfills GE Area F.

SCM 330 Ocean Discovery through Technology (4) GE Area F

Introduction to marine science and current issues in marine science. Investigation of emerging technologies that provide new understanding of the

ocean, including sensors and sensor platforms such as ships, satellites, and underwater vehicles. 3 lectures, 1 activity. Prerequisite: Junior standing and completion of GE Area B. Fulfills GE Area F.

SCM 335 Nuclear Science and Society (4) GE Area F

Impact of nuclear phenomena on energy production, warfare, health and medicine, and the environment. Scientific and public policy aspects of reactor design, nuclear accidents, disposal of radioactive waste, nuclear medicine, food irradiation, nuclear weapons, and fusion as potential energy source. 4 lectures. Prerequisite: Junior standing and completion of GE Area B. Fulfills GE Area F.

SCM 350 The Global Environment (4) GE Area F

Interdisciplinary investigation of how human activities impact the Earth's environment on a global scale. Examination of population, resource use, climate change, and biodiversity from scientific/technical and social/economic/historical/political perspectives. Use of remote sensing maps. Sustainable solutions. 3-4 lectures, 1 activity. Prerequisite: Junior standing and completion of GE Areas A and B. *Crosslisted as AG/BUS/EDES/ENGR/HUM/SCM/UNIV 350. Fulfills GE Area F. Change effective Spring 2012.*

SCM 363 Health Professions Internships (2) (CR/NC)

Structured experiences for pre-health students, such as County Health Agency internships designed to promote understanding of social and public purpose of chosen professions, or internships designed to provide observational experiences in a modern clinical setting. The Schedule of Classes will list topic selected. Limited space availability. Application process for enrollment. Total credit limited to 12 units; a maximum of 6 units may be applied toward degree requirement. Credit/No Credit grading only. Prerequisite: Sophomore standing; must have been enrolled at Cal Poly for at least two quarters; consent of instructor.

SCM 401 Advanced Undergraduate Research (1-3) (CR/NC)

Laboratory research under faculty supervision. Credit/No Credit grading only. Total credit limited to 6 units. 1-3 laboratories. Prerequisite: Consent of instructor. 4 units may be applied to approved chemistry electives. *Crosslisted as SCM/CHEM 401.*

SCM 451 Ethics in the Sciences (3)

The practice, performance and application of science from the standpoint of ethics. Includes issues involving plagiarism, data handling, fraud, safety and selected applications in specific science careers. Models for the analysis and resolution of ethical dilemmas are presented. 3 seminars. Prerequisite: Junior standing.

SCM 470 Selected Advanced Topics (1-4)

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures. Prerequisite: Consent of instructor.

SCM 471 Selected Advanced Laboratory (1-4)

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 laboratories. Prerequisite: Consent of instructor.

SCM 491 Science Student Teaching Workshop (1) (CR/NC)

Facilitated discussions of successful pedagogical tools used in secondary science education, laboratory activities geared towards teaching California science standards, and issues facing students pursuing the public school teaching profession. Open to students in a secondary science credential program. Total credit limited to 2 units. Credit/No Credit grading only. 1 activity. Corequisite: EDUC 469 or EDUC 479

SCM 593 Advanced Science Topics for Teachers (1-4) (CR/NC)

Science topics for credentialed and pre-service teachers. Content, hands-on activities geared towards California science standards. Development of inquiry-based lessons and skills for integration of language, literacy and technology into the science curriculum. The Schedule of Classes will list topic selected. Total credit limited to 12 units; repeatable same term. 1-4 seminars. Prerequisite: Multiple Subject or Single Subject teaching credential or consent of instructor.