

SCIENCE AND MATHEMATICS (SCM)

undefined

SCM Courses

SCM 101. Introduction to Health Profession Careers. 1 unit

Term Typically Offered: SP

CR/NC

Introduction to health profession careers. Professionals from within the health care industry provide an overview of their careers. Emphasis on creating a pre-health career plan, academic course selection, obtaining appropriate experiences, and elements of a strong professional application. Intended for students undecided about their health professions career choice. Credit/No Credit grading only. 1 activity.

SCM 150. Supplemental Workshops in Science. 1 unit

Term Typically Offered: F,W,SP,SU

CR/NC

Concurrent: Enrollment in the designated section of the associated course.

Facilitated study and discussion of the theory, concepts, and applications of content material from selected biology, chemistry, physics, and statistics courses. Credit/No Credit grading only. Total credit limited to 8 units. Maximum of 2 units for degree credit. 1 laboratory.

SCM 220. Seminar for Science and Math Tutors. 1 unit

Term Typically Offered: F, W, SP

CR/NC

Concepts of teaching and learning as it relates to roles as K-12 grade science and math tutors and/or classroom assistants. Intended for participants in science, engineering, and mathematics tutoring and teaching assistant programs like Teaching Assistants in Mathematics and Science (TeAMS) and Mentors in Out of School Time (MOST). Participation in public schools requires mandated fingerprint clearance. Credit/No Credit grading only. Total credit limited to 3 units. 1 activity.

SCM 230. Seminar for Learning Assistants. 2 units

Term Typically Offered: F, W, SP

CR/NC

Prerequisite: BIO 150, BIO 160, BIO 161, CHEM 124, CHEM 127, MATH 141, PHYS 131, or PHYS 141.

Introduction to learning theory and teaching practices for mathematics and science learning assistants regarding conceptual development, questioning techniques, cooperative learning, nature of math and science, and argumentation in mathematics and science. Restricted to students admitted to the Learning Assistant program. Total credit limited to 6 units. Degree credit limited to 4 units. 2 seminars.

SCM 240. Becoming a Responsible Scientist. 2 units

Term Typically Offered: F, SP

Prerequisite: Completion of GE Area A with grades of C- or better; and one of the following: STAT 217, STAT 218, STAT 251, STAT 301 or STAT 312.

Establishing science identity and mentoring relationships. Foundational knowledge in responsible conduct of research including research misconduct, rigor and reproducibility. Building a scientific proposal with emphasis on improving scientific writing and citation. Intended for students with prior research experience. 2 seminars.

SCM 270. Selected Topics. 1-4 units

Term Typically Offered: TBD

Prerequisite: Open to undergraduate students and consent of instructor.

Directed group study of selected topics. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.

SCM 300. Early Field Experience. 4 units

Term Typically Offered: F, W, SP

CR/NC

Prerequisite: Sophomore standing; for Math majors or Science and Engineering majors only.

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.

SCM 301. Professional School Preparation for Health Profession Careers. 1 unit

Term Typically Offered: TBD

CR/NC

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; minimum of 3.0 CPSLO GPA; and consent of instructor.

Recommended: SCM 101 and completion of GWR.

Application strategies and preparation for health professions programs. Analysis of the application requirements and critique of personal application components. Credit/No Credit grading only. 1 activity.

SCM 302. The Learn By Doing Lab Teaching Practicum. 2 units

Term Typically Offered: W, SP

CR/NC

Prerequisite: Completion of GE Areas B1 through B4, with a grade of C- or better in one course in GE Area B4 (GE Area B1 for students on the 2019-20 or earlier catalogs).

Early teaching experience in an informal science, technology, engineering, and 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. Crosslisted as ENGR 322/SCM 302/HNRS 302.

SCM 316. Environmental Literacy: An Integrative STEM Approach. 4 units

Term Typically Offered: SP

Sustainability Focused

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; and completion of GE Areas B1 through B4, with a grade of C- or better in one course in GE Area B4 (GE Area B1 for students on the 2019-20 or earlier catalogs). Recommended: Introductory statistics course.

Examination of local environmental challenges with systems thinking strategies and tools. Explore natural and human factors shaping coastal watersheds. Design for environmental education, analyze science data and practices, develop critical environmental literacy, and practice culturally inclusive communication strategies. Field trip required. 3 seminars, 1 activity. Crosslisted as NR/SCM 316.

SCM 330. Cal Poly Land: Nature, Technology, and Society. 4 units

Term Typically Offered: SP

2020-21 or later: Upper-Div GE Area B

2019-20 or earlier catalog: GE Area B5, B6, or B7

Sustainability Focused

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; one course from GE Area B1 (GE Area B4 for students on the 2019-20 or earlier catalogs); one course from GE Area B2; and one course in GE Area B4 with a grade of C- or better (GE Area B1 for students on the 2019-20 or earlier catalogs).

Scientific investigation of the natural features of the Cal Poly landscape and their transformations by land management technology. Environmental, economic, social, and political effects of agriculture, resource extraction, construction technology. Educational, land-use, long term planning issues. 4 lectures. Crosslisted as AG/ISLA/SCM/UNIV 330. Fulfills GE Area Upper-Division B (GE Areas B5, B6, or B7 for students on the 2019-20 catalog).

SCM 340. Responsible Scientists in Society. 2 units

Term Typically Offered: F, W

CR/NC

Prerequisite: Junior standing; completion of GE Area A with grades C- or better. Recommended: SCM 240.

Introduction to social contexts around scientific research, including its collaborative nature and social impacts, and navigation of social spaces in the conduct of science. Intended for students with previous research experience. Credit/No Credit grading only. 2 seminars.

SCM 350. The Global Environment. 4 units

Term Typically Offered: TBD

2020-21 or later: Upper-Div GE Area B

2019-20 or earlier catalog: GE Area B5, B6, or B7

Sustainability Focused

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; and completion of GE Areas B1 through B4, with a grade of C- or better in one course in GE Area B4 (GE Area B1 for students on the 2019-20 or earlier catalogs).

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. Course may be offered in classroom-based, online, or hybrid format. 4 lectures. Crosslisted as AG/EDES/ENGR/GEOG/ISLA/SCM/UNIV 350. Fulfills GE Area Upper-Division B (GE Areas B5, B6, or B7 for students on the 2019-20 catalog).

SCM 360. Selected Environmental Issues of California's Central Coast. 4 units

Term Typically Offered: SP

2020-21 or later: Upper-Div GE Area B

2019-20 or earlier catalog: GE Area B5, B6, or B7

Sustainability Focused

Prerequisite: Junior standing; completion of GE Area A with grades of C- or better; and completion of GE Areas B1 through B4, with a grade of C- or better in one course in GE Area B4 (GE Area B1 for students on the 2019-20 or earlier catalogs).

Examination of several inter-related environmental issues currently affecting California's Central Coast region. Focuses on the role of technology in creating/mitigating environmental problems. Field trips required. 3 lectures, 1 activity. Fulfills GE Area Upper-Division B (GE Areas B5, B6, or B7 for students on the 2019-20 catalog).

SCM 363. Public Health Fieldwork. 2 units

Term Typically Offered: TBD

CR/NC

Prerequisite: Junior standing; a minimum GPA of 3.0; must have been enrolled at Cal Poly for at least two quarters; and consent of instructor.

Structured observational experiences for pre-health students. Designed to promote awareness and understanding of public health or allied health careers. Students participate in practical experiences under the direct supervision of an approved on-site coordinator. Limited space availability. Application process for enrollment available from CSM Student Services. Total credit limited to 6 units. Credit/No Credit grading only.

SCM 368. Theory and Practice of STEM Tutoring. 4 units

Term Typically Offered: SP

Prerequisite: Completion of one course in GE Area B1 (GE Area B3 for students on the 2019-20 or earlier catalogs), GE Area B2, or GE Area B4 (GE Area B1 for students on the 2019-20 or earlier catalogs).

Theories and practices central to Science, Technology, Engineering, and Mathematics (STEM) tutoring, such as collaborative learning, social dimensions of the peer/tutor relationship, and STEM literacy. Recommended for those interested in tutoring and/or careers in STEM education. Course may be offered in classroom-based, online, or hybrid format. 3 lectures, 1 activity.

SCM 470. Selected Advanced Topics. 1-4 units

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.

SCM 471. Selected Advanced Laboratory. 1-4 units

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 laboratories.