

SCIENCE AND MATHEMATICS (SCM)

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SCM Courses

SCM 1101 Introduction to Health Profession Careers (1 unit)

Term Typically Offered: SP

CR/NC

Recommended: Completion of GE Area 1A with a grade of C- or better (GE Area A2 for the 2020-26 catalogs).

Introduction to health profession careers. Exploring health careers and creating a pre-health plan that includes course selection, cultivating experiences, and developing core competencies. Intended for students undecided about their health professions career choice. Credit/No Credit grading only. Course may be offered in classroom-based or hybrid format. 1 seminar. Formerly SCM 101.

SCM 1150 Supplemental Workshops in Science and Statistics (1 unit)

Term Typically Offered: F, 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. The Class Schedule will list subtitle selected. Credit/No Credit grading only. Repeatable up to 8 units. 1 laboratory. Formerly SCM 150.

SCM 2220 Seminar for Science and Math Tutors (1 unit)

Term Typically Offered: F, 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. Participation in public schools requires mandated fingerprint clearance. Credit/No Credit grading only. Repeatable up to 3 units. Course may be offered in classroom-based or online format. 1 activity. Formerly SCM 220.

SCM 2230 Seminar for Learning Assistants (2 units)

Term Typically Offered: F, SP

CR/NC

Prerequisite: One of the following: completion of GE Area 5A (GE Area B1 for the 2020-26 catalogs), completion of GE Area 5B (GE Area B2 for the 2020-26 catalogs), or completion of GE Area 5C (GE Area B3 for the 2020-26 catalogs).

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. Degree credit limited to 4 units. Repeatable up to 6 units. 2 seminars. Formerly SCM 230.

SCM 2240 Becoming a Responsible Scientist (2 units)

Term Typically Offered: F

Prerequisite: Completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); and one of the following: STAT 217, STAT 218, STAT 251, STAT 301, STAT 312, STAT 1110, STAT 1210, STAT 1510, or STAT 3210.

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. Formerly SCM 240.

SCM 2270 Special Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of special topics. The Class Schedule will list topic selected. Repeatable up to 6 units. Course may be offered in classroom-based, online, or hybrid format. 1 to 3 lectures. Formerly SCM 270.

SCM 3300 Early Field Experience (3 units)

Term Typically Offered: F, SP

CR/NC

Prerequisite: Sophomore standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); and completion of one lower-division course in GE Area 4 (GE Areas D1 or D2 for the 2020-26 catalogs).

Introduction to secondary science and mathematics teaching in California including structure, organization, and culture of schools. Curriculum, instruction, assessment, and classroom management. Structured observation and participation in K-12 public schools is required. Credit/No Credit grading only. 2 seminars, 1 activity. Formerly SCM 300.

SCM 3301 Application Strategies and Preparation for Health Profession Programs (1 unit)

Term Typically Offered: SP

CR/NC

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); minimum of 3.0 CPSLO GPA; and consent of instructor. Recommended: SCM 101 or SCM 1101; and UNIV 401 or UNIV 4401, or completion of GWR.

Analysis of the application timeline and admission requirements, and critique of personal statement. Credit/No Credit grading only. Course may be offered in classroom-based or hybrid format. 1 seminar. Formerly SCM 301.

SCM 3302 The Learn By Doing Lab Teaching Practicum (2 units)

Term Typically Offered: SP

CR/NC

Prerequisite: Completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); and completion of GE Area 5 (GE Areas B1 to B3 for the 2020-26 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. Repeatable up to 4 units. Credit/No Credit grading only. 1 seminar, 1 laboratory. Crosslisted as ENGR/HNRS/SCM 3302. Formerly ENGR 322/HNRS 302/SCM 302.

SCM 3316 Environmental Literacy: An Integrative STEM Approach (3 units)

Term Typically Offered: SP

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); and completion of GE Area 5 (GE Areas B1 to B3 for the 2020-26 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. 2 seminars, 1 activity. Crosslisted as NR/SCM 3316. Formerly NR/SCM 316.

SCM 3330 Cal Poly Land: Nature, Technology, and Society (3 units)

Term Typically Offered: SP

2026-28 or later: Upper-Div GE Area 2/5

2020-26 catalogs: Upper-Div GE Area B

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); completion of GE Area 5A (GE Area B1 for the 2020-26 catalogs); and completion of GE Area 5B (GE Area B2 for the 2020-26 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. Field trip required. 3 lectures. Crosslisted as AG/ISLA/SCM/UNIV 3330. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly AG/ISLA/SCM/UNIV 330.

SCM 3340 Responsible Scientists in Society (1 unit)

Term Typically Offered: SP

CR/NC

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs). Recommended: SCM 240 or SCM 2240.

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. 1 seminar. Formerly SCM 340.

SCM 3350 The Global Environment (3 units)

Term Typically Offered: F, SP

2026-28 or later: Upper-Div GE Area 2/5

2020-26 catalogs: Upper-Div GE Area B

Sustainability Focused

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); and completion of GE Area 5 (GE Areas B1 to B3 for the 2020-26 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. 3 lectures. Crosslisted as AG/EDES/ENGR/GEOG/ISLA/SCM/UNIV 3350. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly AG/EDES/ENGR/GEOG/ISLA/SCM/UNIV 350.

SCM 3360 Selected Environmental Issues of California's Central Coast (3 units)

Term Typically Offered: SP

2026-28 or later: Upper-Div GE Area 2/5

2020-26 catalogs: Upper-Div GE Area B

Sustainability Focused

Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); completion of GE Area 5A (GE Area B1 for the 2020-26 catalogs); and completion of GE Area 5B (GE Area B2 for the 2020-26 catalogs).

Interdisciplinary investigation of key environmental issues affecting California's Central Coast region. Focuses on the role of science and technology in achieving sustainable food production, energy use, and natural resource management. Field trip required. Course may be offered in classroom-based or hybrid format. 2 lectures, 1 activity. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly SCM 360.

SCM 3363 Pre-Health Shadowing Fieldwork (1-2 units)

Term Typically Offered: F, SP

CR/NC

Prerequisite: Sophomore standing; completion of GE Area 1C with a grade of C- or better (GE Area A1 for the 2020-26 catalogs); completion of GE Area 1A with a grade of C- or better (GE Area A2 for the 2020-26 catalogs); minimum GPA of 3.0; and consent of instructor.

Structured observational experiences for pre-health students. Designed to promote awareness and understanding of health careers. Students observe healthcare professionals in their work under the direct supervision of an approved on-site coordinator. Limited space availability. Application for enrollment is available from Bailey College Student Services. Repeatable up to 6 units. Credit/No Credit grading only. Course offered in hybrid format with classroom-based and online learning. 1 to 2 activities. Formerly SCM 363.

SCM 3368 Theory and Practice of STEM Tutoring (3 units)

Term Typically Offered: SP

Prerequisite: Completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs), or completion of one course in GE Area 5A or 5B (GE Areas B1 or B2 for the 2020-26 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. 2 lectures, 1 activity. Formerly SCM 368.

SCM 4470 Special Advanced Topics (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. Course may be offered in classroom-based, online, or hybrid format. 1 to 3 lectures. Formerly SCM 470.

SCM 4471 Special Advanced Laboratory (1-3 units)

Term Typically Offered: TBD

Prerequisite: Consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 laboratories. Formerly SCM 471.