

COLLEGE OF NATURAL SCIENCES, MATHEMATICS, AND ENGINEERING

Natural Sciences, Mathematics, and Engineering (nsme) (<https://catalog.csub.edu/general-information/csub-information/school-natural-sciences-mathematics-engineering/>)

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The College of Natural Sciences, Mathematics, and Engineering offers several courses with the SCI prefix. Some are designed to satisfy the science requirements for the subject matter preparation program leading to a multiple subject credential. Others are offered as options to satisfy the General Education Upper Division Thematic Area B requirement in Natural Science and Technology. These courses are listed separately under SCI.

Mission

The College of Natural Sciences, Mathematics, and Engineering has a tradition for excellence in teaching and providing a wealth of research opportunities to undergraduate and graduate students alike. The College is committed to providing an outstanding educational experience consistent with the University's vision to be the leading campus in the CSU system in terms of faculty and academic excellence and diversity, quality of the student experience, and community engagement.

The objectives of the College of Natural Sciences, Mathematics, and Engineering are to:

- Offer required coursework in science, mathematics, engineering, and nursing, for students majoring in these disciplines or the teaching of these disciplines.
- Promote science and health education for the purpose of improving the human condition.
- Foster scientific integrity in all professional endeavors.
- Prepare students for entry into the workforce in technical and healthcare services.
- Prepare students for admission to graduate programs.
- Prepare students for admission to professional programs in nursing, medicine, dentistry, pharmacy, and other health professions.
- Prepare students for leadership roles in the community.

Departments & Programs

Department of Biology

- Biology, BS (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/biology-bs/>)
- Biology, BS, Emphasis in Biotechnology (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/biology-bs-concentration-biotechnology/>)

- Biology, MS (<https://catalog.csub.edu/academic-degrees-programs/graduate-programs/biology-ms/>)
- Human Biological Sciences, BA (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/human-biological-sciences-ba/>)

Department of Chemistry and Biochemistry

- Biochemistry, BS (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/biochemistry-bs/>)
- Biochemistry, BS, Certified by the American Chemical Society (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/biochemistry-bs-certified-american-chemical-society/>)
- Biochemistry, BS, Concentration in Food Science (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/biochemistry-bs-concentration-food-science/>)
- Biology Minor (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-minors/biology-minor/>)
- Chemistry Minor (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-minors/chemistry-minor/>)
- Chemistry, BS (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/chemistry-bs/>)
- Chemistry, BS, Certified by the American Chemical Society (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/chemistry-bs-certified-american-chemical-society/>)
- Chemistry, BS, Concentration in Management and Marketing (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/chemistry-bs-concentration-management-marketing/>)
- Chemistry, BS, Concentration in Occupational Safety and Health Management (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/chemistry-bs-concentration-occupational-safety-health-management/>)

Department of Computer and Electrical Engineering and Computer Science

- Computer Engineering, BS (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/computer-engineering-bs/>)
- Computer Science Minor (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-minors/computer-science-minor/>)
- Computer Science, BS (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/computer-science-bs/>)
- Computer Science, BS, Concentration in Computer Information Systems (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/computer-science-bs-concentration-computer-information-systems/>)
- Computer Science, BS, Concentration in Information Security (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/computer-science-bs-concentration-information-security/>)
- Computer Science, MS (<https://catalog.csub.edu/academic-degrees-programs/graduate-programs/computer-science-ms/>)
- Electrical Engineering, BS (<https://catalog.csub.edu/academic-degrees-programs/undergraduate-majors/electrical-engineering-bs/>)
- Electrical Engineering, BS, with Energy and Power Engineering Emphasis (<https://catalog.csub.edu/academic-degrees-programs/>)

[undergraduate-majors/electrical-engineering-bs-energy-power-engineering-emphasis/](https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/electrical-engineering-bs-energy-power-engineering-emphasis/))

Department of Geological Sciences

- Geology Minor (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-minors/geology-minor+/>)
- Geology, BA (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/geology-ba/>)
- Geology, BS (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/geology-bs/>)
- Geology, MS (<https://catalog.csusb.edu/academic-degrees-programs/graduate-programs/geology-ms/>)

Department of Nursing

- Nursing Doctoral Program, DNP-FNP program (<https://catalog.csusb.edu/academic-degrees-programs/graduate-programs/nursing-practice-nurse-practitioner-doctoral-program-with-family-nurse-practitioner-concentration/>)
- Nursing Doctoral Program, MSN-DNP Program (<https://catalog.csusb.edu/academic-degrees-programs/graduate-programs/nursing-practice-doctoral-program/>)
- Nursing, BSN (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/nursing-bsn/>)
- Nursing, MSN (<https://catalog.csusb.edu/academic-degrees-programs/graduate-programs/nursing-msn/>)
- Nursing, RN-BSN (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/nursing-rn-bsn/>)

Department of Physics and Engineering

- Engineering, BS (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/engineering-bs-accredited-abet/>)
- Engineering, BS, Biosystems and Agricultural Engineering Emphasis (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/engineering-bs-biosystems-agricultural-engineering-emphasis/>)
- Engineering, BS, Energy and Power Engineering Emphasis (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/engineering-bs-energy-power-engineering-emphasis/>)
- Engineering, BS, Engineering Management Emphasis (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/engineering-management-emphasis/>)
- Engineering, BS, Petroleum Engineering Emphasis (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/engineering-bs-petroleum-engineering-emphasis/>)
- Physics Minor (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-minors/physics-minor/>)
- Physics, BS (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/physics-bs/>)

Department of Mathematics

Mathematics is a unique and valuable science that is enjoyable and rewarding. The Department of Mathematics provides a collection of mathematics courses designed to challenge and stimulate all open minded and thoughtful students regardless of individual backgrounds or major interest areas. This is done by combining flexibility, applicability, and historical perspective in the design of the mathematics curriculum. Furthermore, depth of understanding and appreciation are not sacrificed

to quantity; the major emphasis is upon inquiry, creativity, methods, techniques, and thought processes rather than bulk of material.

The classroom goal is to discover both the importance and beauty of mathematics by combining lectures with problem solving recitations, student presentations, writing assignments, computer experience, and any other workable approaches to learning. The Department of Mathematics at CSUB includes a discussion session in every 4-unit mathematics course. A student is encouraged to interpret and communicate mathematically with others, to follow self-direction and in-depth study, and to investigate the interplay of mathematical concepts. A teacher acts as a resource person, stresses the spirit and point of view of mathematics, and provides for feedback of the relative value of classroom activities.

Upon completion of any mathematics course, students are better prepared to be participants in a highly technological, scientifically complex environment. From a subjective point of view, they should have an improved grasp of the art and beauty of rational reasoning and discourse both as an observer and a participant. From an objective point of view, they should have acquired new skills which, alone or in combination with others, will enhance both an understanding of and performance in the scientific world. A detailed description of student learning goals and objectives can be found at www.csusb.edu/irpa/_files/pdfs/assessment-plans/bs-mathematics-slos.pdf.

- Mathematics Minor (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-minors/mathematics-minor/>)
- Mathematics, BS, Applied Mathematics Concentration (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/mathematics-bs-applied-mathematics-concentration/>)
- Mathematics, BS, Pure Mathematics Concentration (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/mathematics-bs-pure-mathematics-concentration/>)
- Mathematics, BS, Statistics Concentration (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/mathematics-bs-statistics-concentration/>)
- Mathematics, BS, Teaching Concentration (<https://catalog.csusb.edu/academic-degrees-programs/undergraduate-majors/mathematics-bs-teaching-concentration/>)

Department of Public Health