



CSU Bakersfield
School of Natural Sciences,
Mathematics, and Engineering



California State University, Bakersfield

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To find out more about NSME,
visit our website or contact us:

California State University, Bakersfield
School of Natural Sciences,
Mathematics, and Engineering
9001 Stockdale Highway
Science I, Room 104
Bakersfield, CA 93311-1022

Phone (661) 654-3450

Email nsme@csub.edu

Web www.csub.edu/nsme

NSME Student Center

Phone (661) 654-6322

Email sciencecenter@csub.edu

Web www.csub.edu/science



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Mission

The School of Natural Sciences, Mathematics, and Engineering is dedicated to providing an outstanding educational experience consistent with the University's mission, which is to be a comprehensive public university committed to offering excellent undergraduate and graduate programs that advance the intellectual and personal development of its students.

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

- Offer required coursework in science, mathematics, engineering, and nursing for students majoring in these disciplines.
- Offer required coursework for students seeking a teaching credential in science and mathematics.
- Promote science, engineering, 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 science, technology, engineering, and mathematics (STEM), and health care services.
- Prepare students for admission to graduate programs in science, mathematics, engineering, and nursing.
- Prepare students for admission to professional programs in medicine, veterinary medicine, pharmacy, dentistry, nursing, and other health professions.
- Prepare students for leadership roles in the community.



Get the NSME Experience

At California State University, Bakersfield's School of Natural Sciences, Mathematics, and Engineering (NSME), students get the best of all worlds. They acquire the critical thinking skills they need to succeed in college—and the practical experiences that prepare them for exciting careers in today's market.

Experienced Professors.

At CSU Bakersfield, students aren't just another face in the crowd. They work closely with highly qualified and experienced professors in modern class and laboratory settings. NSME faculty members are respected academic experts, published researchers, and community engaged leaders—as well as dedicated educators who genuinely care about their students' success.

Practical Research.

In NSME, all students (including undergraduates) have the opportunity to participate in research projects, work with faculty in state-of-the-art laboratory facilities, and utilize cutting-edge equipment. At most other universities, those kinds of opportunities are only available to elite scholars or graduate students.

Excellent Value.

In today's economy, CSU Bakersfield is an incredible value. Students receive all the benefits of a private university at a public school cost. Local students can obtain an outstanding education within their own community and be ready to succeed anywhere in the world.

Exciting Careers.

NSME prepares students for challenging and rewarding careers in a wide range of fields. Our graduates have a very high rate of employment, with many students going straight into prestigious professions where they utilize their CSUB education every day.

Majors that Work.



Exciting things are going on in NSME at CSU Bakersfield. With millions of dollars in federal grants and scholarships, state-of-the-art facilities, outstanding faculty, and brand new degree programs, NSME truly is on the cutting edge of science, engineering, and nursing, empowering the Kern County economy.

Biology

The Department of Biology's curriculum covers the entire spectrum of biological sciences, including animal biology, plant biology, and cellular/molecular biology. The Biology department offers B.S. and M.S. degrees in Biology, as well as a B.A. degree in Human Biological Sciences.

Laboratory and field research are integral components of the Biological Sciences program, which emphasizes a "hands-on" approach with close faculty mentoring. Biology's modern research facilities include state-of-the-art molecular and microbiology research labs, new greenhouse facilities, and a full range of field sampling and trapping equipment. The Biology department also runs the Facility for Animal Care and Treatment (FACT), a wildlife rescue, conservation, and education project located on the campus's Environmental Studies Area (ESA).

Chemistry

The Chemistry department offers four different B.S. degree programs in Chemistry, including the American Chemical Society Certification, and concentrations in Biochemistry or Management & Marketing. Chemistry students enjoy small class sizes, individual attention from their professors, and the opportunity to conduct hands-on research as undergraduates.

Students in the Chemistry department have access to a wide range of new high-tech scientific instruments, including mass spectrometers, spectrophotometers, high-performance liquid chromatography, and nuclear magnetic resonance spectroscopy equipment.

Computer and Electrical Engineering and Computer Science

The Computer and Electrical Engineering and Computer Science department has expanded to provide students with the quality education they need to succeed in today's challenging high-tech world. The department offers B.S. degrees in Computer Engineering, Computer Science, and Electrical Engineering.

The department's world-class robotics laboratory is home to a fascinating variety of high-tech robots of all shapes and sizes. The department facilities also include an advanced graphics workstation laboratory, a circuits laboratory, a network laboratory, and several well-equipped instructional and walk-in programming labs.

Geological Sciences

The Department of Geological Sciences offers B.S., B.A., and M.S. degrees in Geology, as well as a post-baccalaureate Certificate in Hydrogeology. The programs provide comprehensive training in geology with special strengths in the applied areas of petroleum geology, hydrogeology, sedimentology, tectonics, and paleoclimatology.

CSU Bakersfield is located in an ideal area for geologic study, with easy access to deserts, mountain ranges, oil fields, agricultural areas, and the Pacific Coast. The department has well-equipped modern research facilities and a full range of field sampling equipment. The CSUB campus is also home to the California Well Sample Repository, which contains cores and samples from more than 5,000 wells in addition to 1,500 micropaleontological samples.

Mathematics

The Department of Mathematics offers a B.S. degree in Mathematics with concentrations in Applied Mathematics, Theoretical Mathematics, Economics, Statistics, and Teaching Mathematics, as well as an M.A. degree in Teaching Mathematics.

The faculty members of the department are passionate about teaching mathematics. They help students discover both the importance and the beauty of the discipline by combining lectures with discussions, problem-solving activities, student presentations, and computer applications.

Natural Sciences

This interdisciplinary program offers a B.A. in Natural Sciences and an M.S. in Science Education. The main focus of the program is the preparation of science teachers at both the middle school and high school levels. The B.A. begins with a broad foundation in the sciences that can be applied to the foundational concentration for middle school teachers, or disciplinary concentrations in Biology, Chemistry, Geology, or Physics for high school teachers. The M.S. offers two tracks: a credential track for prospective science teachers without a California Teaching Credential and a research track for practicing science teachers.

Nursing

The Bachelor of Science in Nursing (BSN) program prepares the next generation of nurses by providing an exceptional education that incorporates biological, physical, and social sciences. In addition to classroom instruction and in-depth training, students are exposed to a wide variety of clinical settings and patient populations within the community as part of their curriculum.

The department's state-of-the-art Don C. and Diane S. Lake Family Nursing Simulation Laboratory enables students to develop their patient care skills using high-fidelity simulators, task trainers, video technology, and a variety of hospital-grade equipment. The Department of Nursing is engaged in community service through locally funded private/public partnerships.

Physics and Engineering

The department offers a B.S. degree in Physics and a B.S. degree in Engineering Sciences with planned concentrations in Agriculture Engineering, Petroleum Engineering, Project Management Engineering, and Water Resources & Environmental Engineering. The Pre-engineering program will continue to service students in other engineering fields. Students enjoy exceptional opportunities to work closely with faculty. Classes are small and promote participation and interaction.



Student Services and Tutoring

NSME faculty and staff are committed to helping our students succeed. The NSME Student Center, staffed by full-time advisors and student assistants, provides programs and services to support NSME students. Services include pre-advising and registration assistance, with an overall goal of supplementing each student's academic education in a safe, secure, and accessible environment. Tutoring for individual subjects is available through the Sciences, Mathematics, and Engineering Tutoring Centers. (NSME acknowledges Chevron Corporation's financial contribution to the NSME Student Center).

Active STEM-Focused Grants and Projects

Under the leadership of the faculty and the Office of the Dean, NSME has sought to boost the school's programs in Science, Mathematics, and Engineering by securing federal funding, engaging in unique partnerships, and making use of available resources. These entrepreneurial efforts have paid off, generating millions of dollars and helping the school offer innovative and creative programs. The list of active grants and scholarships continues to grow, including:

- National Science Foundation (NSF) Grant: Centers of Research Excellence in Science and Technology (CREST) Grant
- NSF Grant: Robert Noyce Scholarship Program
- NSF Grant: Robert Noyce Fellowship Program
- NSF Grant: Louis Stokes Alliance for Minority Participation (LSAMP)
- NSF Grant: Opportunities for Enhancing Diversity in the Geosciences
- NSF Grant: A Strategy for Improving the "Pipeline" from High Schools into University Geology Programs
- NSF Grant: The Faculty Early Career Development Program (CAREER)
- U.S. Department of Education: Ronald E. McNair Program
- U.S. Department of Education: Central California Partnership for Teacher Quality Programs
- U.S. Department of Education: Developing a Highly Structured Engineering Pathway for Hispanics Through an Intersegmental and Collaborative Approach
- U.S. Department of Education: Developing New Engineering Degree Options for Underserved Hispanic Students in the Southern San Joaquin Valley
- U.S. Department of Education: Engineering, Calculus, and Outreach
- CSU Grant: Math and Science Teacher Initiative
- Chevron Corporation: Research Experience Vitalizing Science-University Program (REVS-UP)
- Toyota USA Foundation: Families for STEM



Time for Fun, Too!

NSME students take school seriously, but there's also plenty of time to enjoy student life on and around campus. CSU Bakersfield features a state-of-the-art recreation center, over 95 student organizations, clubs, fraternities, and sororities. Students also enjoy Roadrunner sporting events, on-campus performances, and plenty of dining and entertainment options in the City of Bakersfield.