

COLLEGE OF SCIENCE AND ENGINEERING

Mission

The mission of the College of Science and Engineering at San Francisco State University is to provide an encouraging environment to develop the intellectual capacity, critical thinking, creativity, and problem-solving ability of its students so that they may become honorable, contributing, and forward-thinking members of the science and engineering community of the San Francisco Bay Area and beyond, to foster a conducive environment for scholarly and creative activities so that new knowledge or solutions to problems are discovered or created, and to provide science education to all students in the University so that they may be equipped to succeed in the modern world.

Programs

The College of Science and Engineering is committed to providing superior scientific, engineering, and mathematical education in the context of a major urban university with a liberal arts tradition. The College offers programs at both the undergraduate and the graduate levels in astronomy, atmospheric sciences, biology, chemistry, geology, biochemistry, computer science, physics, and mathematics through the eight departments of Biology, Chemistry and Biochemistry, Computer Science, Mathematics, Earth & Climate Sciences, Geography & Environment, Psychology, and Physics and Astronomy. Through the School of Engineering, the College offers Bachelor of Science degrees in Civil, Computer, Electrical, and Mechanical Engineering. At the graduate level, the School offers the Master of Science in Engineering. The College offers a Professional Science Master's in Biotechnology and Stem Cell Science through the Biology Department. The Professional Science Master's is an innovative degree designed to allow students to pursue advanced training in science or mathematics, while simultaneously developing workplace skills highly valued by employers. Finally, the College offers a multidisciplinary degree program in statistics drawing from courses in business, economics, and mathematics. The statistics program is listed in the Department of Mathematics.

The College provides all of its students with a current, relevant, hands-on education in science and engineering. Close interaction between student and faculty in the laboratory and field environments fosters the development in the student of the critical skills required in science and engineering: the ability for objective analysis of a problem, the ability to design and carry out critical tests, and the ability to make objective interpretations of data.

Students wishing to follow one of the major and/or minor programs in the College should meet with a faculty advisor in the appropriate department immediately after admission to the university. Science and engineering curricula are inherently sequential, so early advising and satisfaction of course prerequisites are essential to success in timely completion of program requirements.

The College operates two programs located off-site from the main campus, one on San Francisco Bay and the other in the Sierra Nevada, which provide outstanding access to locations for field-based research and instruction:

- Estuary and Ocean Science Center (EOS Center), eoscenter.sfsu.edu (<http://rtc.sfsu.edu/>)

- Sierra Nevada Field Campus, www.sfsu.edu/~sierra/ (<http://www.sfsu.edu/~sierra/>).

San Francisco State is also a member of a CSU Consortium of seven campuses providing San Francisco State University faculty, students, and staff access to Monterey Bay through:

- Moss Landing Marine Laboratories (MLML), mlml.calstate.edu (<https://www.mlml.calstate.edu/>). Applicants interested in the M.S. in Marine Science at MLML should submit applications to the graduate programs at San Jose State University or CSU Monterey Bay. Applicants interested in the M.S. in Interdisciplinary Marine and Estuarine Sciences (IMES) should apply through SF State. All students in the M.S. in Marine Science program based at MLML or the M.S. in IMES program based at the EOS Center may take courses at SF State, EOS Center (see below), or MLML.

The Estuary and Ocean Science Center

Estuary and Ocean Science Center (EOS Center) supports the scientific study of the sea, enhances public engagement with marine science, and develops solutions to the environmental problems confronting coastal communities. It provides opportunities for scientific discovery, innovation, and education focused on the health and resilience of the San Francisco Estuary, the Gulf of the Farallones, and other coastal ecosystems. The EOS Center is located on the Romberg Tiburon Campus (RTC) just 11 miles north of the SF State campus in Tiburon, CA on the shore of San Francisco Bay. San Francisco Bay is part of the largest estuary and watershed on the west coast of the United States. The region is internationally recognized as a biodiversity hotspot, hosts a diverse array of marine protected areas, and an economically important coastal and marine economy including productive fisheries, a diverse recreational and tourism sector, and a hub of technological innovation.

The EOS Center has specialized facilities for marine and estuarine research including flow-through bay water tanks and tables; a research pier and nearby moorings equipped with a variety of environmental sensors for tracking water quality, weather conditions, and underwater sounds; laboratories for elemental analysis, analysis of water samples for nutrients, and carbonate chemistry; specialized microscopes for quantifying, identifying, and visualizing plankton; a molecular genetics laboratory; a greenhouse for raising wetland plants; and a well-equipped, 38-foot research vessel (R/V Questuary) and a small boat fleet to support aquatic field research. The center also offers a motorboat operators training course and supports an active scientific diving program.

Faculty and research scientists from across the College offer courses and mentored research opportunities in marine and estuarine sciences at the EOS Center and on the main campus. The EOS Center hosts and administers the Masters of Science in Interdisciplinary Marine and Estuarine Sciences (IMES). Additional research and educational opportunities are available through the SF Bay National Estuarine Research Reserve and the Smithsonian Environmental Research Center programs based at the EOS Center. The Rosenberg Institute for Marine Biology and Environmental Sciences offers a Public Forum and weekly science seminar series based here also. See eoscenter.sfsu.edu (<http://eoscenter.sfsu.edu>) for more information.

Degrees Offered

Bachelor of Arts

- Biology 04011
- Chemistry 19051

- Earth Sciences 19171
- Environmental Studies 49101
- Geography 22061
- Mathematics
 - Mathematics for Liberal Arts 17011
 - Mathematics for Teaching 17011
 - Mathematics for Advanced Study 17011
- Physics 19021
 - Concentration in Astronomy 19111
- Psychology 20011

Bachelor of Science

- Applied Mathematics 17031
- Biochemistry 04141
- Biology
 - Concentrations in:
 - Cell and Molecular Biology 04171
 - Ecology, Evolution, and Conservation Biology 04071
 - Marine Science 04181
 - Microbiology 04111
 - Physiology 04101
- Chemistry 19051
- Civil Engineering 09081
- Computer Engineering 09094
- Computer Science 07011
- Earth Sciences 19171
- Electrical Engineering 09091
- Environmental Science 49011
- Environmental Studies
 - Concentration in:
 - Natural Resource Management and Conservation 49101
- Mechanical Engineering 09101
- Physics 19021
 - Concentrations in:
 - Astrophysics 19111
 - Physics for Teaching 19021
- Statistics 17021

Master of Arts

- Geography 22061
 - Concentration in Resource Management and Environmental Planning 01151
- Mathematics 17011
- Psychological Science
 - Concentrations in:
 - Developmental Psychology 20990
 - Mind, Brain, and Behavior 20990
 - Social, Personality, and Affective Science 20990

Master of Science

- Astronomy & Astrophysics 19021
- Biology

- Concentrations in:
 - Cell and Molecular 04171
 - Integrative Biology 04011
 - Physiology and Behavioral Biology 04101
- Biomedical Science 04153
 - Concentrations in:
 - Biotechnology
 - Stem Cell Science
- Chemistry 19051
 - Concentration in: Biochemistry 19051
- Civil Engineering 09081
- Computer Science 07011
- Data Science and Artificial Intelligence 07011
- Electrical and Computer Engineering 09095
- Engineering 09011
 - Concentration in:
 - Energy Systems 09013
- Geographic Information Science 22063
- Geosciences 19172
- Industrial Organizational Psychology 20081
- Interdisciplinary Marine and Estuarine Sciences 49022
- Mechanical Engineering 09011
- Physics 19021
- Psychology
 - Concentrations in:
 - Clinical Psychology 20031
 - School Psychology 20013
- Statistical Data Science 17021

Certificate Program

- Data Science for Biology and Chemistry
- Data Science and Machine Learning for Biotechnology
- Data Science for Psychology
- Certificate in Weather Study (Geoscience Department)
- Climate Change Causes, Impacts, and Solutions
- Cooperative Education

College Administrative Offices

| Title | Officer | Office | Telephone |
|----------------|------------------------|--------|-----------|
| Dean | Dr. Carmen Domingo | TH 323 | 338-1571 |
| Associate Dean | Dr. Ron Marzke | TH 323 | 338-1571 |
| Associate Dean | Dr. Teaster Baird, Jr. | TH 323 | 338-1571 |

College Directory

| Department/Program | Chair/Director | Office | Telephone |
|----------------------------|-------------------|--------|-----------|
| Biology | Dr. Laura Burrus | HH 538 | 338-1548 |
| Chemistry and Biochemistry | Dr. Bruce Manning | TH 806 | 338-1292 |
| Computer Science | Dr. Arno Puder | TH 907 | 338-2156 |
| Earth & Climate Sciences | Dr. Petra Dekens | TH 509 | 338-2061 |

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|------------------------------------|----------------------|---------|----------|
| Engineering | Dr. Kwok Siong Teh | SCI 165 | 405-4168 |
| Geography & Environment | Dr. Andrew Oliphant | HSS 279 | 338-2049 |
| Mathematics | Dr. Eric Hsu | TH 940 | 338-2251 |
| Physics and Astronomy | Dr. Joseph Barranco | TH 334 | 338-2450 |
| Psychology | Dr. Christian Wright | EP 301 | 338-2714 |

Centers and Institutes

| Center/Institute | Director/Coordinator | Office | Telephone |
|---|-----------------------------|---------------|------------------|
| Center for Science and Mathematics Education | Dr. Eric Hsu | CA 32 | 405-4190 |
| Estuary and Ocean Science Center | Dr. Karina J. Nielsen | Tiburon | 338-3700 |
| Institute for Geographic Information Science | Dr. Jerry Davis | HSS 288 | 338-3566 |
| Moss Landing Marine Laboratories | Dr. James Harvey | Moss Landing | (831) 771-4402 |
| SF Bay National Estuarine Research Reserve | Dr. Michael Vasey | Tiburon | 338-3707 |
| Sierra Nevada Field Campus | J.R. Blair | TH 323 | 338-1571 |