Enrichment Options
Our distinctive undergraduate engineering program allows our students to incorporate one of four exceptional enrichment options without extending the time required to graduate.

Co-op and Internship Programs
Located in Silicon Valley, a mecca of innovation and entrepreneurship, SCU offers students unsurpassed opportunities for corporate internships and cooperative education. Co-op students are employed in a paid and discipline-related engineering position for six months in the spring and summer of their junior year.

Study Abroad
Studying in a foreign country provides an unmatched opportunity for undergraduates to experience life from a different perspective. Students can even take all electives while studying abroad during the fall of their junior year.

Combined B.S./M.S.
Many students opt to participate in our department’s combined B.S./M.S. program to earn both a bachelor’s and a master’s degree in as little as five years, while saving one-third the cost of tuition for the M.S.

Individualized Study
Working with their advisors, students may craft their own unique program of study, taking 12 or more units tailored to their own particular educational objectives.

After Graduation
SCU’s mix of practical and theoretical experiences and our commitment to academic and ethical excellence cultivates outstanding engineers who are highly sought-after candidates for higher education and employment. Our students are well prepared to enter graduate programs in computing at SCU or any school across the country. Employers in Silicon Valley and globally provide a wealth of opportunities for our graduates in a variety of career paths.

Faculty
Ahmed Amer, associate professor, Ph.D., UC Santa Cruz. Expertise: distributed storage systems, predictive management of data and storage, alternative and upcoming storage technologies, energy management

Darren Atkinson, associate professor, Ph.D., UC San Diego. Expertise: software engineering, compilers, static analysis tools, data structures, programming languages

Ronald Danielson, associate professor, vice provost, and chief information officer, Ph.D., University of Illinois at Urbana-Champaign. Expertise: impact of information technology on organizations, Web-based educational tools, human-computer interaction

Ruth Davis, Lee and Seymour Graff Professor and associate dean for undergraduate studies, Ph.D., UC Santa Cruz. Expertise: formal methods in software engineering, programming languages, improving diversity in engineering

Yi Fang, assistant professor, Ph.D., Purdue University. Expertise: Web science, data-intensive computing, large-scale information retrieval

Silvia Figueira, associate professor, Ph.D., UC San Diego. Expertise: parallel and grid computing, middleware, performance modeling, resource scheduling

Radhika Grover, lecturer, Ph.D., Santa Clara University. Expertise: programming, simulation, architecture, multimedia

JoAnne Holliday, associate professor, Ph.D., UC Santa Barbara. Expertise: distributed systems, mobile computing, wireless networks, replicated databases

Daniel Lewis, associate professor, Ph.D., Syracuse University. Expertise: embedded systems, K-12 outreach

Nam Ling, chair, Sanfilippo Family Professor, IEEE Fellow, Ph.D., University of Louisiana at Lafayette. Expertise: video and image coding, architecture, video communications

Rani Mikkilineni, lecturer, Ph.D., Santa Clara University. Expertise: object-oriented design methodologies, software engineering, database systems

Maria Pantoja, lecturer, Ph.D., Santa Clara University. Expertise: video compression, video transcoding and reconfigurable video coding, GPU computing, computer graphics

Wenjie Wang, associate professor, Ph.D., Purdue University. Expertise: parallel processing, computer architecture, algorithm theory, nonlinear programming

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Web Design and Engineering

“...understanding the Web and being able to engineer its future requires not only an understanding of the Web as a computational structure, but also how it interacts with, and supports the interaction of, people.”

In little more than a decade, the Internet has become pervasive in our lives, competing with television as a medium for presenting news and entertainment and changing the way we communicate, how we shop, and how we learn. The technology that enables the Web is complicated and extensive, yet most of us think of it in terms of how convenient, intuitive, and pleasing we find our online experience to be. As the Web evolves and matures, those who design and develop the technology require a better understanding of the relationship between the infrastructure and the experience it creates, of how the Web affects society, and of how the new and innovative ways in which society uses the Web often create new demands on its technology.

Our Program

The bachelor’s degree in Web Design and Engineering offers an interdisciplinary education that blends the technology of computing with preparation in the aesthetics of graphic design and user interface design to effectively deliver engaging multimedia content for the Web. Relevant material from communication, sociology, and applied ethics is included, empowering our students with an understanding of the relationship between the Web and those who use it.

At SCU, students have access to all the tools they need to be successful, including uncommonly accessible mentors, small classes, and state-of-the-art computer laboratory facilities. Our students work with engaged, passionate faculty members who are leaders in their fields. A solid theoretical foundation, hands-on laboratory experience, and a curriculum that challenges students to think and act ethically help prepare our graduates to either continue with advanced study or enter the workforce, ready to make real contributions to society.

Educational Objectives

The Web Design and Engineering program is designed to achieve three objectives:

- To produce graduates who can analyze, design, and improve the computational infrastructure of the World Wide Web
- To produce graduates who can develop interactive multimedia content that is appealing, engaging, effective, and easy to use
- To produce graduates whose work is guided by an understanding of, and sensitivity to, the social, political, ethical, and legal relationships between their work and those that it affects

Curriculum

The computer engineering department takes the University’s mission to “educate the whole person” seriously. Our curriculum is design-oriented and laboratory-intensive, with an emphasis on teamwork and hands-on experience that is crucial to success in a competitive workplace. In addition to providing an outstanding engineering education, we also teach students to communicate effectively and prepare them to work in a global economy.

Program Requirements

Computing

- computer networks
- introduction to Web technologies
- programming and data structures
- software engineering
- Web information management
- Web infrastructure
- Web programming
- Web usability

Liberal Arts

- computer imaging
- computers, the Internet, and society
- constructing websites
- graphic design
- introduction to mass communication
- technology and communication
- visual communication

Senior Capstone Project

For this comprehensive and intensive project, students apply skills learned in the preceding years, taking the project from initial concept development through analysis, design, and report writing, replicating the process demanded of engineers in practice. Students receive the benefit of mid-year design reviews and present their completed projects before a panel of alumni and other industry judges.