UNIVERSITY OF CALIFORNIA
UCMERCED

Computer Science & Engineering, B.S.

Planning for 2005

Computer Science is an exciting and challenging technical career path, and one that provides both job security and personal satisfaction. From its inception during the mid last century, computer science has become a key component of today's global economy. The technologies resulting from this field are many, and technological innovation is occurring now faster than ever.

The Computer Science and Engineering program at UC Merced is designed to provide students with both breadth and depth in the exciting and rapidly expanding fields of computer science and computer engineering. Computer scientists and engineers have the opportunity to work with advanced computer and information technologies that impact virtually every aspect of society. Computers have become a vital part of all industries including design and manufacturing; entertainment; communications; transportation; healthcare; scientific research; education at all levels; and public, private, and governmental services.

Message from Jeff Wright
Dean of Engineering

Our faculty has developed a program at UC Merced that combines practical exposure to the most modern technologies available with a theoretical foundation that will empower students to master future changes and innovation as technologies continue to evolve at an astonishing pace. Our graduates will thus have the tools and insights that will propel them to positions of responsibility and leadership across virtually any occupation. From introductory programming courses, through architecture design experiences, to research and team project activities, our students will gain insights that will allow them to excel throughout their chosen career path.

High School Preparation

Recommended as part of or in addition to the A-G subject requirements: www.ucop.edu/doorways

- Chemistry (1 year)
- Physics (1 year)
- Pre-Calculus and/or Calculus (1 year)

Transfer Preparation

Recommended as part of or in addition to UC minimum admission requirements: www.ucop.edu/pathways

- Chemistry (2 semesters)
- Calculus (2 semesters)
- Multivariate Calculus (1 semester)
- Linear Algebra (1 semester)
- Differential Equations (1 semester)
- Physics (2 semesters)
- Probability and Statistics (1 semester)
- No grade below a "C" in the above preparatory courses
- IGETC is **Not Recommended**

If a college does not offer linear algebra and differential equations as individual courses, students are advised to wait until they transfer to UC Merced.

Please contact:

UC Merced Admissions/Relations with Schools and Colleges
550 E. Shaw Avenue, Suite 105
Fresno, CA 93710
(559) 241-7474
(559) 241-7480 fax
(866) 270-7301 toll free in California
www.ucmerced.edu

Service Learning Experience, Research Opportunities, & Internships

Students who chose to participate in UC Merced's Service Learning Initiative will obtain practical experience that complements their formal coursework by working with student teams that serve non-profit organizations under the direction of a faculty team mentor.

Careers in Computer Science & Engineering

As documented by the IEEE (Institute of Electrical and Electronics Engineers) Computer Society, computers are used in almost every aspect of our lives: in car engines, microwave ovens, video games, watches, telephones, desktops at home and work, mainframe computers in government and industry, and supercomputers expanding the frontiers of science and technology. The computer industry is one of the fastest growing segments of our economy and that growth promises to continue well into the next century. To maintain a competitive edge, industry and commerce must continue to make creative scientific and engineering advances as well as produce high quality products. More than ever, there is a demand for a prepared work force with the scientific and technical training necessary to perform effectively on the job.

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Computing professionals might find themselves in a variety of environments in academia, research, industry, government, private and business organizations analyzing problems for solutions, formulating and testing, using advanced communications or multi-media equipment, or working in teams for product development. Here's a short list of research and vocational areas in computing.

- **Artificial Intelligence –** Develop computers that simulate human learning and reasoning ability.
- **Computer Design and Engineering –** Design new computer circuits, microchips, and other electronic components.
- **Computer Architecture –** Design new computer instruction sets, and combine electronic or optical components to provide powerful but cost-effective computing.
- **Information Technology –** Develop and manage information systems that support a business or organization.
- **Software Engineering –** Develop methods for the production of software systems on time, within budget, and with few or no defects.
- **Computer Theory –** Investigate the fundamental theories of how computers solve problems, and apply the results to other areas of computer science.
- **Operating Systems and Networks –** Develop the basic software computers use to supervise themselves or to communicate with other computers.
- **Software Applications –** Apply computing and technology to solving problems outside the computer field - in education or medicine, for example.

About Your Professors

Faculty at UC Merced are nationally and internationally recognized researchers in their own fields, and they have also been selected for their excellence as teachers and as mentors.

UC Merced's Academic Schools

Campus majors and programs are organized into three academic schools; the **School of Engineering**, the **School of Natural Sciences**, and the **School of Social Sciences, Humanities, and Arts**. UC Merced is planning educational experiences designed to prepare well-educated people of the 21st Century for the workplace, for advanced education, and for leadership roles in their own communities. Graduates from UC Merced will find themselves better able to navigate and succeed in a complex world.

College One

College One will be the home of UC Merced's general education program and will introduce students to the major domains of intellectual inquiry and help them build their college-level skills. What does the educated citizen of the 21st Century need to know? How will what students learn in UC Merced's classrooms connect with the world outside the University? What does it mean to be part of a research university? Students will be able to answer these questions, and many more, through their participation in College One.

Special Note for Transfer Students

We encourage you contact us for more information:

Learn how to:

- Meet UC transfer admission requirements
- Prepare for you major
- Complete your IGETC or General Education
- Apply to UC Merced for 2005-06
- Get a Transfer Admission Guarantee to UC Merced

Consult your counselor, transfer center, or a UC Merced representative, for assistance in creating an academic plan for transfer to UC Merced.

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