SCHOOL OVERVIEW
The Computer Science department is part of the nationally ranked School of Engineering and Computer Science. We are leading the information age with interdisciplinary educational programs that delve into the applications of the computing discipline.

ACADEMIC OFFERINGS
An education in the School of Engineering and Computer Science provides a blend of scholarship, science, technology, and practical application that forms an excellent foundation for professional life and prepares students with skills that will last their entire lives. The curriculum offers a set of fundamental courses in computer science, supplemented by a breadth of courses from other academic disciplines. Students work with state-of-the-art hardware and software technologies, learn several programming languages, and make use of distributed learning environments, simulation of virtual worlds, and collaborative projects and games. A premium is placed on developing analytical skills necessary for software design, and communication skills necessary for teamwork. Students are provided with opportunities for hands-on experience through independent study, the cooperative education program (COOP), and Senior Projects which expose the students to contemporary professional computing systems and network technologies.

YOUR CHOICE OF TRACKS OR PATHS TO SUCCESS
Computer Science covers a vast spectrum of topics which can be distinguished by the different areas of application. Our curriculum provides a common core of computer science courses, and several concentrations which teach the student how to apply computer science to different fields of the arts, humanities, sciences, and engineering.

The COMPUTER SCIENCE MAJOR (CS) prepares you for a career as a computer scientist or software engineering professional with skills and experience in the following specializations or tracks: Computer Applications, Computer Networking and Security, Computer Graphics and User Interfaces, Computer Games and Simulation, Computational Biology, and Computational Economics. You may also design your own custom concentration.

Games and Simulation Track: Students specialize in the creation of virtual environments. These simulations may replicate things that exist in the real world, to support virtual experiments in computational sciences. They may be fictional environments, designed for video games and other forms of entertainment. Students in this track will learn how to design, develop and evaluate simulations. They will also gain experience in supporting technologies, such as graphics and audio, required for the realistic presentation of virtual realities.

Computer Networking and Security Track: This track provides students with an understanding and practical experience with data networks such as the ethernet which supports the World Wide Web. Students learn how computers talk over these networks, how information is encrypted to protect it as it travels over these networks, how computer viruses work, and how to protect valuable data systems from becoming infected.
The COMPUTER SCIENCE MAJOR with BIOINFORMATICS (CSB) features a curriculum consisting of a core of computer science courses, plus a multidisciplinary selection of courses in biology, chemistry, genetics, biochemistry, and mathematics. Students will develop expertise in using computer applications to analyze genetic data; proficiency in designing algorithms and coding applications to discover how proteins interact; and skill in mining public domain databases for information about hereditary diseases. Our curriculum is designed to prepare students for successful careers in research, medicine, or professional practice, and is excellent preparation for M.D., M.D.-Ph.D., Pharm.D., or D.D.S. degree candidates.

“Bioinformatics has already changed our society, and, broadly defined, has touched almost every aspect of modern life science research. Quite simply, there is so much data that it has to be processed by computers; therefore, bioinformatics will be at the core of virtually every discovery …. Over the last ten years, we've seen the emergence of a whole new industry, the employment of hundreds of thousands of people worldwide, new approaches to discovery, new academic programs to drive creative thinking, hundreds of therapeutics in pipelines, and an insatiable demand for better technology that drives us all to work harder. The next decade promises just as much, if not more!” James Gosling, Vice President, Sun Microsystems

SCHOLARSHIPS
The School of Engineering and Computer Science offers scholarships to selected outstanding candidates upon admission to the major. In addition, students may apply for numerous merit-based scholarships throughout the academic year.

UNDERGRADUATE AREAS OF STUDY

Bachelor of Science in Computer Science (CS)
The student following this path will take core computer science courses, and may elect to concentrate advanced course work in any of the following Tracks:

- Computational Biology
- Computational Economics
- Computer Games and Simulation
- Graphical User Interfaces
- Mathematics
- Networking and Computer Security

Bachelor of Science in Computer Science with Bioinformatics (CSB)
The student following this path will take:

- A core of computer science courses
- A core of multidisciplinary courses in biology, chemistry, organic chemistry, and mathematics
- Advanced interdisciplinary courses in genetics, biochemistry, bioinformatics, and computer science
- Either a cooperative internship or a senior project.

TOPICS TO EXPLORE
The fundamental intellectual features of computer sciences are applicable to many scholarly and scientific fields. Faculty in the School of Engineering and Computer Science cover a broad spectrum of important topics in their teaching and research interests. Students can get involved in any one of these areas, which include:

- Fundamentals of computing languages, algorithms, and systems
- Simulation of virtual environments and computer gaming
- Networking and computer security
- Design and implementation of embedded computer systems
- Biological, biotechnical, and biomedical applications of computer science
- Distributed and parallel supercomputing architectures
- Artificial intelligence and robotics systems
- Neural networks and intelligence engineering

CAREER OPPORTUNITIES
Our curriculum prepares our Computer Science majors for professions and careers in industry, research laboratories, or graduate education in the discipline. Our Computer Science with Bioinformatics majors have additional options to pursue degrees in the medical professions. Our graduates pursue a variety of careers. They specify, design, and develop computer-based systems comprised of software and hardware in virtually every domain, including biomedical, consumer, engineering, entertainment, environmental, finance, investment, law, management, manufacturing, and pharmacology. Graduates work for established and start-up companies, as independent consultants, and move into management or advanced technical positions. Graduates also find jobs maintaining institutional computing infrastructures, or developing advanced technologies as members of research teams.