

# Computer & Information Sciences

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Science and technology are the foundations of our future. The Department of Computer and Information Sciences (CIS) is focused on the understanding of fundamental scientific principles and the application of these principles to solving complex problems, using computing technology. In order to meet current and future information and technology needs, the CIS Department offers two undergraduate programs: Computer Science (CS) and Information Science and Technology (IS&T).

The CS curriculum provides an in-depth study of the science of computing, including computer systems, software design and implementation, math and theory. Elective courses are offered in many areas, including mobile and web application development, security (digital forensics, intrusion detection, ethical hacking, network and information security), intelligent systems (artificial intelligence, computer vision, graphics, robotics, game programming), data science (databases, bioinformatics), systems programming (operating systems, high performance computing, distributed and cloud computing), and networks (wireless and sensor networks, ad hoc networks). The program is for students with a keen interest in software design and development with a strong foundation in math, theory, and system software. Our students are involved in innovative research and product development; they have careers in systems and applications development, systems analysis and consulting. Many of our students continue onto graduate study and research in computer and information sciences.

The IS&T curriculum focuses on the skills of applying technologies to solving problems in computing. The technologies and methods include databases, web and mobile application development, client-server computing, network security, project management, software engineering principles, and quality assurance methodologies. The program is targeted for students who have a strong interest in applying computing technologies to solving problems in science, business, education, and government agencies. Our IS&T graduates are also involved in innovative product developments. They hold jobs as consultants, network engineers, business and systems analysts, database administrators, and web and application developers.

Each of these programs leads to either a BA or a BS degree in order to accommodate students with diverse backgrounds and interests.

The department also offers programs that combine Computer and Information Science with other disciplines.

The Bachelor of Science in Mathematics and Computer Science program is intended for students who are interested in computer science and mathematical computing. It provides a solid knowledge of theoretical computer science and its mathematical foundations and compares favorably with other theoretically-oriented computer science programs. The program is particularly recommended to those students who are interested in pursuing a graduate degree in computer science or computational mathematics.

The Bachelor of Science in Computer Science and Physics is intended for students with dual interests both in Physics and Computer Science who wish to complete the essential courses for both majors within their normal four-year academic plan. This program prepares students for a career in a computer related field and/or physics research.

Data Science is an interdisciplinary field of study about methods and systems to extract knowledge or insights from large quantities of data coming in various forms. The Bachelor of Science in Data Science, offered in three areas of concentration, is designed for students interested in developing expertise in data science.

We also offer dual BS, accelerated BS and MS, dual PhD programs, and minors in CS, IS&T and Digital Media that are tailored to students who are interested in cross-disciplinary programs.

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## **Programs**

- Computer Science, B.A.
- Computer Science, B.S.
- Computer Science, B.S./M.S.
- Computer Science & Physics, B.S.
- Data Science with Concentration in Computation and Modeling, B.S.
- Data Science with Concentration in Computational Analytics, B.S.
- Data Science with Concentration in Genomics and Bioinformatics, B.S.
- Information Science & Technology, B.A.
- Information Science & Technology, B.S.
- Information Science & Technology, B.S./M.S.
- Mathematics & Computer Science, B.S.
- Mathematics & Computer Science with Teaching, B.S.