DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES

7800 York Road 406
Phone: 410-704-2633
Fax: 410-704-3868

Programs of the Department

Computer Science

The Department of Computer and Information Sciences offers several programs of study leading to Baccalaureate, Master of Science and Doctor of Science degrees. The undergraduate programs in computer science include a major in Computer Science, a major in Computer Science with a track in Cyber Operations, a major in Computer Science with a track in Software Engineering and a minor in Computer Science.

The B.S. in Computer Science and the B.S. in Computer Science with Cyber Operations track are accredited by the Computing Accreditation Commission of ABET.

Information Systems

Information Systems (IS) focuses on solving organization and enterprise needs by integrating key aspects such as people, processes, and policies into comprehensive applied technical solutions, which are often related to decision making, coordination, control, analysis, or data visualization.

This program is a great fit if you like technology and enjoy working with people. Graduates of the Information Systems major are prepared for in-demand careers with a highly marketable combination of technical, organization, and behavioral skills.

Programs include a major in Information Systems with a track in Data Analytics, a major in Information Systems with a track in Business, a major in Information Systems with a track in Interface Design and a major in Information Systems with a track in Systems.

Information Technology

Information technology (IT) involves the selection, creation, application, integration and administration of computing and communication technologies to meet individual organizational and societal needs. Emphasis is on applying current technology in various real world domains. As such, a complementary mix of knowledge and practical hands-on skills are needed. The undergraduate information technology program prepares students to enter the workplace as IT professionals or to pursue graduate studies in the IT field.

Programs include a major in Information Technology, a major in Information Technology with a track in Network Security, a major in Information Technology with a track in Data Management and Analytics and a minor in Information Technology.

Overview

Students in any of the department's undergraduate programs are prepared with a broad foundation in the principles and concepts of computing, both theoretical and applied. Elective courses may be selected from a variety of topic areas including artificial intelligence, bioinformatics, computer graphics, data science, decision support systems, e-commerce, human-computer interaction, robotics, scientific modeling, software engineering, software project management, systems analysis and design, and web-based programming. In addition, the department offers numerous courses in the area of information security including operating systems security, network security and application software security.

Matriculated students attending classes either full- or part-time may fulfill degree requirements. Students attending part-time in the evening are advised that not all required courses are available in the evening every term.

Students intending to transfer into the Computer Science or Information Systems program should provide course descriptions and supportive materials from their institution for review by a departmental adviser. Community college students from local public institutions should be aware that agreements on equivalency of courses are maintained; they should inquire about the current agreement either at their institution or at TU. They should also be aware that community college courses can only be counted as lower-division work. Transfer students are urged to gain a good background in mathematics.

The department has over 40 full-time faculty members and a number of part-time faculty. Research specialties include:

- assistive technology
- automated reasoning
- cryptography
- data mining
- decision support systems
- distance learning
- distributed computing
- genomics
- geographical information systems
- human-computer interaction
- cybersecurity
- information visualization
- neural networks
- universal usability
- virtual collaboration
- voice-over IP
- wireless networks

The department has over 20 computing labs including teaching and research labs.

2+2 Programs for Transfer Students from Harford Community College

Students transferring from Harford Community College with an A.S. in Computer Science can major in either Computer Science, Computer Science with Security Track or Information Systems by completing the following major requirements. Students transferring from HCC with an A.A.S. in Computer Information Systems can major in Information Technology by completing the following major requirements. (Refer to the Harford Community College catalog for the specific courses that are required to be taken at HCC as part of the A.S. and A.A.S. programs for transfer to these majors.) Information about these 2+2 Programs can be found on the Admissions website.

Second Bachelor's Program

Baccalaureate degree holders may apply for enrollment in the Second Bachelor's Program through the Admissions Office. Because of the high demand for computer personnel, the Computer Science, Information Systems or Information Technology major is often of interest to persons who wish to change careers. Students in this program must satisfy the requirements for the major and earn at least the last 30 units in the IS/COSC major at TU. Although there are computer science or information systems courses offered in the evening, students may find that some required courses must be taken during the day. Because of the sequence of prerequisites, a minimum of five terms is normally needed to complete the program.

Departmental Activities

A student chapter of the Association for Computing Machinery (ACM) is the basis for the Students for the Advancement of IT. Meetings are held during the term, with field trips and speakers featured. To recognize outstanding talent in the field of computer science, TU has a charter chapter of Upsilon Pi Epsilon (UPE), the first and only international honor society for the computing and information disciplines. Members of UPE are outstanding undergraduate and graduate students in Computer Science or Information Systems. Find more under the 'Student Resources' section of the website.

Scholarships

The department offers a number of scholarships, including the James W. Smith Scholarship (for computer science majors demonstrating academic excellence and enthusiasm for the field); the Doris K. Lidtke Excellence in Service Award (a monetary award for graduating seniors majoring in computer science or information systems with a minimum 3.50 GPA and significant service in their discipline); the Applied Information Sciences Scholarship (for information systems majors demonstrating academic excellence); and the Mid-Atlantic CIO Forum Scholarship (for computer science and information systems majors with a minimum GPA of 3.50). Find more in the 'Scholarships' section of the website.

Awards

The department also offers several academic awards, including the Mary Hudson Scarborough Award for outstanding academic achievement by graduating seniors majoring in computer science or information systems, and the Upsilon Pi Epsilon (UPE) Award for students majoring in computer science or information systems with a minimum overall GPA of 3.00 and a minimum GPA in the major of 3.14. Find more in the 'Scholarships' section of the website.

Majors

- Major in Computer and Mathematical Sciences
  - Applied Mathematics and Computer Science Concentration
  - Computational Data Science Track
- Major in Computer and Mathematical Sciences - Secondary Education Concentration
- Major in Computer Science
- Major in Computer Science - Cyber Operations Track
- Major in Computer Science - Software Engineering Track
- Accelerated B.S./M.S. in Computer Science
- Major in Information Systems
- Major in Information Technology

Minors

- Minor in Computer Science
- Minor in Information Systems
- Minor in Information Technology

Faculty

Professors: Nadim Alkharouf (Program Director, MB3), Joyram Chakraborty (Program Director, BS in IT), Suranjan Chakraborty (Director, School of Emerging Technologies), Joshua Dehlinger (Program Director, BS in CS), Jinjuan Feng (Program Director, BS in IS), Ramesh Karne, Siddharth Kaza (Associate Provost for Research and Dean of Graduate Studies), Yanggon Kim, Chao Lu (Graduate Program Director), Michael McGuire (Chairperson), Nam Nguyen, Yeong-Tae Song, Blair Taylor (Director, Center for Interdisciplinary and Innovative Cybersecurity), Alexander Wijesinha, Wei Yu (Program Director, Ph.D. in IT), Marius Zimand

Associate Professors: Lin Deng, Charles Dierbach, Sung-Chul Hong, Weixian Liao, Ziying Tang (Program Director, MS in CS), Yuanqiong Wang (Assistant Chair)

Assistant Professors: Omar Badreddin, Yifan Guo, Xin Huang, Woosub Jung, Wasilla Lalouani, Qingquing Li, Dastyni Loksa, Jeba Rezwana, Neda Saeedloei, Md Sajidul Islam Sajid, Qianlong Wang

Lecturers: Terry Downing-Harris, Alex Hornberger, Jal Irani

Clinical Professor: J. Scott Hilberg

Clinical Associate Professors: Adam Conover, Jinie Pak

Clinical Assistant Professors: Willie Sanders, Mona Tavakolan

Lecturer II: Cheryl T. Brown (Program Director, MS in AIT), Robert Eyer, Tina Kelleher, Iliana Zimand