DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES

OFFICE
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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 Computer Security, a major in Computer Science with a track in Software Engineering, a combined major in Computer Science and Mathematics, a combined major in Computer Science and Mathematics with a track in computer security, and a minor in Computer Science.


Information Systems
Graduates from the Information Systems major at Towson University are in high demand by employers due to their unique combination of technical, organizational and behavioral skills. The Information Systems major is a great fit for students who enjoy technology and like working with people. Information Systems, as a field, primarily focuses on the 4 “Ps”:

• people (understanding user interface design and user task goals for information systems)
• process (incorporating stakeholder input into technology development processes)
• policy (understanding the context of state and national laws and international technical standards)
• profit (using technology to meet business and organizational goals).

The flagship program is the undergraduate major in Information Systems, which includes four career track options: Systems, Business, Interface Design, and e-Government. The department also offers a combined major in Information Systems and Business Administration, a combined major in Information Systems and e-Business, and a minor in Information 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 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, 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. (Since 2002, Towson University has been designated as one of the National Centers of Academic Excellence in Information Assurance Education (CAE/IAE) by the National Security Agency and the Department of Homeland 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.

The department has 38 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
• information assurance
• information visualization
• neural networks
• universal usability
• virtual collaboration
• voice-over IP
• wireless networks

The department has 15 computing laboratories including:

• smart classrooms
• undergraduate majors open labs
• graduate research lab
• NSF-funded Security Lab
• Linux Lab
• Software Engineering Lab
• Universal Usability Lab
• Robotics Lab

The computing needs of department majors are also met by the facilities and services provided by the university’s Office of Technology Services.

Students electing one of the majors should contact the Department of Computer and Information Sciences and be assigned faculty advisers to
assist them in planning their academic schedules, identifying educational goals and maintaining good academic progress.

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 program for transfer to these majors.)

TRANSFER CREDIT POLICY

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 Towson University. 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.

SECOND BACHELOR’S PROGRAM

Baccalaureate degree holders may apply for enrollment in the Second Bachelor’s Program through the University 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 Towson University. 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, Towson University 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.

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).

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.

 Majors in Computer and Information Sciences

- Major in Computer Science (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/computer-science)
- Major in Computer Science with a Track in Computer Security (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/computer-science-computer-security)
- Major in Computer Science with a Track in Software Engineering (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/computer-science-software-engineering)
- Combined Major in Computer Science and Mathematics (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/combined-computer-science-mathematics)
- Combined Major in Computer Science and Mathematics with a Track in Computer Security (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/combined-computer-science-mathematics-computer-security)
- Combined Major in Information Systems and Business Administration (http://catalog.towson.edu/undergraduate/business-economic/business-administration/combined-business-administration-information-systems-bs)
- Major in Information Technology (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/information-technology)
- 2+2 Programs for Transfer Students from Harford Community College:
  - Computer Science (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/computer-science-2-2)
  - Information Technology (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/information-technology-2-2)
Minors in Computer and Information Sciences

- Computer Science (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/computer-science-minor)
- Information Technology (http://catalog.towson.edu/undergraduate/fisher-science-mathematics/computer-information-sciences/information-technology-minor)

Admission to the Combined Major in e-Business and Information Systems

Students are admitted to the combined major in e-Business and Information Systems on a competitive basis after first being admitted to the university. Admission to the university does not guarantee admission to this combined major. Each term, the Department of e-Business and Technology Management considers applications for admission to the major in the following term. In order to be admitted to the major, students must satisfy specific screening requirements (listed under the e-Business major) and complete an application form for admission. Degree candidates intending to pursue the combined major in e-Business and Information Systems are designated as “pre-e-Business” (PEBU) until admitted into the major. Students are required to meet each term with their assigned faculty adviser to evaluate their progress in completing the requirements for admission to the EBUS major and the degree.

Admission Requirements

Candidates for the combined major in e-Business and Information Systems must satisfy the admission requirements for the e-Business major.

Application Procedure

Refer to the Application Procedure section in this catalog under the e-Business major.