The Department of Computing Sciences at the University of Scranton offers three undergraduate majors, each of which prepares students for professional careers and for advanced study. The emphasis is on mastering the foundational concepts of computing while making use of state-of-the-art tools.

The Bachelor of Science Degree (B.S.) in Computer Science (CS) was first offered in 1970, making it one of the oldest and most established programs in the state of Pennsylvania. The Bachelor of Science Degree (B.S.) in Computing Systems and Information (CSI) was established in 1985 to better serve the needs of those students interested in the application of computing in the business and management domains. The newly established Bachelor of Science Degree (B.S.) in Information Technology (IT) enrolled its first students in Fall 2016, and this program focuses on applying technology to solve problems within organizations.

Additionally, since 1990 the department has offered a Master of Science (M.S.) degree program in Software Engineering (SE). This program has attracted experienced software developers as well as students coming directly out of undergraduate programs. A Combined Baccalaureate/Masters Degree Program provides a means for qualified undergraduate students to earn both B.S. and M.S. degrees in five years.

Undergraduate Curricula

The Computer Science, Computer Information Systems and Information Technology programs share a common core of introductory courses during the first year of study. These courses prepare students in the underlying foundation concepts and skills of the computing discipline. All three programs culminate during the senior year in the Computer Projects course, when students undertake a project in collaboration with a faculty advisor. In addition to developing the artifacts of the project, students must also satisfy significant reporting requirements as a means of honing their communication skills. Students are further encouraged to pursue internship and graduate research opportunities.

The Computer Science major is accredited by ABET (http://www.abet.org), the recognized accrediting body for college and university programs in applied science, computing, engineering and technology. It is the only such accredited Computer Science degree program in Northeastern Pennsylvania, and Scranton is one of just twenty schools in the state of Pennsylvania with such an accredited computing program.

Related Programs

The undergraduate program in Computer Engineering (CE), offered through the department of Physics/ECE, requires 26 credits of course work in our department.

Proficiencies

Students gain experience utilizing a variety of languages (including Java, Python, C/C++, PHP, LISP and assembler) and systems (including MS Windows, OS X, UNIX, Linux, FreeBSD and Linux). Students have the opportunity to explore the application of TCP/IP, Web servers (including Apache and Tomcat), database management systems (including MySQL and PostgreSQL), Java Servlets and various wireless telecommunications. Projects involving software development for mobile devices have involved students with Android and Apple iOS. This variety provides valuable and marketable expertise to augment the theory and conceptual understanding emphasized in coursework.

Facilities

In addition to the general computing resources available to University students, the Department of Computing Sciences provides a variety of computing resources dedicated to the support of programs in computing. Laboratories on the first floor of the Loyola Science Center, near faculty offices, provide reconfigurable space for these resources, most of which are accessible from both on and off campus locations. The department is a member of the MSDN® Academic Alliance (MSDNAA), which offers a wide range of Microsoft software development tools (including Visual Studio .NET).

Graduates

Graduates of our programs experience great success in securing professional employment in the discipline and in competitive graduate studies. Recent employers include DOD, IBM, Liberty Mutual, Lockheed Martin, New York Times, Metropolitan Life, Microsoft and TMG Health, with graduates earning competitive starting salaries. Alumni have completed advanced degrees at Carnegie Mellon, Drexel, Harvard, Iowa State, Lehigh, Penn, Rensselaer, UConn, UMass, Yale and other schools.

The more than 1,000 accomplished alumni of these programs attest to the stability, relevance and quality of the educational experience here. Students are not only well prepared to enter their profession, but are also ready to evolve with and contribute to the discipline and the world as they learn throughout their careers.

Students

The low student to faculty ratio allows students to work closely with their instructors and with each other. Many students pursue summer opportunities, including internships and research experiences that place them in various settings and provide unique opportunities. Recently this has included paid internships at DOD, Guard Insurance, IBM, Metropolitan Life, Susquehanna International Group, TMG Health, WebMD, and NSF REUs at Auburn, Montclair St, NYIT, Pittsburgh and Tennessee Technological University.

Outstanding students are recognized by Upsilon Pi Epsilon (UPE), the honor society in the Computing Sciences. Many students are involved in the department’s Student Chapter of the Association for Computing Machinery (ACM) and the IEEE Student Branch.

Faculty

All major courses are taught by the seven full-time members of the department’s faculty. Their average of over 25 years of service to the University is indicative of the stability and commitment of the department. The faculty's commitment to scholarship is evidenced by their work with students, research and contributions to the discipline.

The department’s web page, at http://www.cs.scranton.edu, presents more about the programs, the people and the courses. Most faculty keep course related materials online and so browsing through these public pages offers a glimpse of what goes on in the courses offered.

Location/Contact

All faculty offices and departmental labs are located on the first floor of the Loyola Science Center, in McDonald and Milani halls. You can reach the department’s secretary at (570) 941-7774 and cmps@cs.scranton.edu and are encouraged to plan a visit.

The Department of Computing Sciences faculty offices and labs are easily reached via the entrance on Monroe Ave.
1 The selection of a First Year Seminar is likely to fulfill requirements for both the First Year Seminar and a General Education Requirement. Thus, the First Year Seminar will not add to the total credits for the semester. Talk with your advisor if you have any questions.

2 Computer Science majors must complete at least 12 credits of science courses, including a two-semester sequence in a laboratory science for science or engineering majors. Qualifying science courses are: BIOL 140-141, BIOL 142-143, CHEM 112-113, and BIOL 141-142. (Other sequences require approval of the department.) The remaining science credits must be satisfied by departmentally approved courses that enhance the student’s ability to apply the scientific method.

**COMPUTER SCIENCE MAJOR**

This program’s focus is on mastering the underlying concepts of computing with an emphasis on software engineering. The program is supplemented by courses in mathematics and the natural sciences and prepares students for advanced study and wide ranging professional careers in computing, including software development.

**INFORMATION SYSTEMS TECHNOLOGY MAJOR**

This program focuses on the development of information systems and is supplemented by courses from the Kania School of Management. The program prepares students to be information systems professionals capable of configuring and developing software applications. Graduates are qualified to pursue advanced degrees in computing or an M.B.A.

**INFORMATION TECHNOLOGY MAJOR**

This program provides students with knowledge and abilities that prepare them for careers in Information Technology (IT) and for continued professional development. The IT professional understands, evaluates, applies, and manages the information technology resources of individuals and organizations to assist them in achieving their goals and objectives. In addition to providing such preparation in an ever-changing technical landscape, this program prepares students to be effective communicators and contributing collaborators in multiple domains.

The major courses follow a well-defined prerequisite structure with pervasive topics, such as security, spanning multiple courses. A noteworthy aspect of the program is that the Cognate Area requires both breadth and depth of study in relevant areas, and also provides an opportunity for the completion of a related minor. A capstone course in the senior year requires each student to complete a project under the direction of a faculty member. Opportunities exist for internship and practicums.

**COMPUTER INFORMATION SYSTEMS MAJOR**

To minor in Computer Science: the student must take a minimum of 20 credits including CMPS 134, Math 142, CMPS 144, CMPS 240, and at least two of CMPS 250, 260, 314, 341, 344, 350, 352, 354, 355, 358, 360, 362, 364, 370, 372, 376, 378, or 384.

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