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 Computer Information Systems (CIS) was established in 1985 to better serve the needs of those students interested in the application of computing primarily 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 prepares students to be “user-focused” professionals who apply technology to meet the needs of organizations.

Additionally, since 1990 the department has offered a Master of Science (M.S.) degree program in Software Engineering (SE). This program attracts experienced software developers as well as students coming directly out of undergraduate programs. A Combined Baccalaureate/Master’s 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 foundational concepts and skills of the computing discipline. All three programs culminate during the senior year in the Senior 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 honoring their communication skills. Students are further encouraged to pursue internship and undergraduate 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 the 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/EE, requires 27 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, Linxus, FreeBSD and LeOS). Students have the opportunity to explore the application of TCP/IP, Web servers (including Apache and Tomcat), database management systems (including MySQL and PostgreSQL), JEE, Java Servlets and various wireless technologies. Projects involving software development for mobile devices have utilized both the Android and Apple iOs platforms. 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 all 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 through a VPN. 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


The more than 1,200 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 in the educational process. Many students pursue summer opportunities, including paid internships at Google, Guard, IBM, MetLife, WebMD, TMG Health, USPS, and recent NSF Research Experiences for Undergraduates (REU) at Auburn, Montclair St, New York Institute of Technology, 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

Major courses are taught by the six full-time tenured members of the department’s faculty. Their average of over 20 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 (LSC), in McDonal and Milan 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 most conveniently reached via the entrance on Monroe Ave; directly across from The Estate.
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 both advanced study and wide ranging professional careers in computing, including software development.

MINOR

To minor in Computer Science, the student must take a minimum of 20 credits including Math 141, Math 142, Math 144, and Math 240 and at least two of Computer Science 250, 250L, 341, 344, 352, 355, 358, 360, 362, 364, 370, 372, 374, 376, 384, or IT 354.

COMPUTER INFORMATION SYSTEMS MAJOR

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

MINOR

To minor in Computer Information Systems the student must take a minimum of 16 credits including Computer Science 134, Computer Science 144, Computer Science 330, Computers and Ethics 111, and two of Math 142, Math 120 or Math 312, Math 240, 340, 341, 342, 355, 356, 376, 384, or IT 335.

INFORMATION TECHNOLOGY MAJOR

This program provides students with knowledge and abilities that prepare them for versatile careers as IT Professionals 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 practice experiences.

* 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.

* 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 sequences include PHYS 140-141, CHEM 112-113 and BIO 141-143. (Other sequences require approval of the department.) Completion credits must be satisfied by departmentally approved courses that enhance the student’s ability to apply the scientific method.


** Either a mathematics course at the 300 level or above or a science course approved by the department.

** At least two courses from one of the areas below, and at least one course from one of the other areas. Alternatives must be approved by the student’s Departmental Academic Advisor.

** Accounting (ACC 253 - Financial Accounting, ACC 254 - Managerial Accounting)

** Art (ART 112 - Color and Design)

** Communication (COMM 214 - Small Group Communication, COMM 312 - Organizational Communication)

** Computer science majors must be chosen from Computer Science 250, 341, 342, 344, 352, 355, 356, 358, 360, 362, 364, 370, 372, 374, 376, 384, 390, 440 and 481.

** Either a mathematics course at the 300 level or above or a science course approved by the department.

** At least two courses from one of the areas below, and at least one course from one of the other areas. Alternatives must be approved by the student’s Departmental Academic Advisor.

** Accounting (ACC 253 - Financial Accounting, ACC 254 - Managerial Accounting)

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