

# School of Information Sciences

Undergraduate Program

## THE CURRICULUM

### The CORE

- ◆ **Introduction to Information Systems & Society** (INFSCI 0010)
- ◆ **Object-Oriented Programming 1 for Information Science** (INFSCI 0017)
- ◆ **Database Management Systems** (INFSCI 1022)
- ◆ **Introduction to Telecom and Networks** (INFSCI 1070)
- ◆ **Information Systems and Analysis** (INFSCI 1024)
- ◆ **Human Factors in System Design** (INFSCI 1044)

### The CONCENTRATIONS

#### Information Systems Concentration

- Object-Oriented Programming 2 for Information Science** (INFSCI 0019)
- Geographic Information Systems** (INFSCI 1068)
- Information Systems Design** (INFSCI 1025)
- Enterprise Systems** (TBA)
- Web Services** (TBA)

#### User-Centered Design Concentration

- User Centered Design** (INFSCI 1052)
- Graphics** (INFSCI 1014)
- Web Programming** (TBA)
- Information Visualization** (TBA)

#### The Networks and Security Concentration

- Applications of Networks** (INFSCI 1071)
- Computer Security** (INFSCI 1074)
- Introduction to Wireless Networks** (INFSCI 1072)
- Application Development for Mobile Devices** (INFSCI 1073)

### The CAPSTONE (INFSCI 1085) — *invaluable practical experience*

- Internship with regional industry partners**
- Participate in leading-edge research**

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### Earn your Bachelor's Degree at the University of Pittsburgh's School of Information Sciences

- Graduates will gain the practical skills essential for careers as system analysts and designers, database managers, network analysts, website designers and software engineers.
- SIS graduates work in companies from small competitive firms to multinational conglomerates. They have careers in financial services, healthcare, judicial systems, private industry, government agencies, education, and communications.
- Students are accepted into the Information Sciences program at the end of their sophomore year.

The course of study is designed to meet the future needs of industry — in fact, industry leaders have guided the development of the program. Students will take a series of core courses which provide the skill set needed to succeed in industry. These courses cover principles of programming, database systems, networks, systems analysis, and human factors. After completing the core courses, students can further strengthen their skills by participating in the three concentrations: **Information Systems, User-Centered Design, and Networks and Security.**

The **Information Systems concentration** will enable students to use object-oriented design tools to design, build, implement, and test web-based information systems. Courses include object-oriented programming, geographic information systems, enterprise systems, system architecture and web services.

The **User-Centered Design concentration** will provide the visual and human-computer interaction skills needed to design and build prototypes of information systems interfaces, as well as to perform usability testing of these systems. Courses offered in conjunction with this concentration include information visualization, web programming, graphics, and user-centered design.

Students who choose the **Networks and Security concentration** will learn how to design, build and test networks such as LANs, WANs, Wireless, Internet, and Web-based. This concentration will also examine how to incorporate security protocols into both land-based and wireless networks. Students will be able to take courses in networks, computer security, wireless networks, and mobile applications.

BSIS majors will participate in a "Capstone Experience," further enhancing their practical skills. Such experiences might include internships with regional industries, assisting with graduate-level research projects, or a self-designed project.

The School of Information Sciences (SIS) at the University of Pittsburgh is one of the nation's pioneering schools in the education of information professionals, with a history that reaches back more than 100 years. Throughout that century, the School has built and maintained a tradition of excellence and innovation in education, research, and professional activities pertaining to the information sciences. The SIS faculty, staff, students and programs – uniquely interdisciplinary, multicultural, and international by design – are dedicated to the building of a global society and an informed citizenship based upon access to reliable and useful information.

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*When advising undergraduate students, you may find these talking points to be useful!*

### What is Information Science?

**Information science** is an interdisciplinary science primarily concerned with the collection, classification, manipulation, storage, retrieval and dissemination of information. Information science studies the application and usage of knowledge in organizations, and the interaction between people, organizations and information systems (technology).

Information science focuses on understanding problems from the perspective of the stakeholders involved and then applying information (and other) technology as needed. In other words, it tackles the problem first rather than the technology first.

### Why study Information Science?

Information Science meets the need for an applied science that encompasses the human, cognitive and management aspects of computers and information.

Modern Information Science, existing almost entirely in the digital realm, teaches students to develop high performance applications that operate in global networks by:

- learning how people seek and create electronic information
- building, designing and evaluating effective information systems
- understanding how people ultimately transform information into useful knowledge

### How can I study Information Science at Pitt?

The undergraduate IS program at Pitt is an upper level two-year program that normally begins in the junior year.

Students may also pursue graduate IS studies leading to Masters and Ph.D. degrees.

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## **What kinds of students are interested in Information Science?**

Because Information Science is, itself, interdisciplinary, it attracts students from diverse backgrounds and with eclectic interests.

The field has always been popular among students with strong analytical skills (especially in math), but technology has advanced to the stage and has become so ubiquitous in society that students with interests in many non-technical disciplines such as business, psychology, media arts, and communications and design find the field particularly attractive.

Students who are interested in where the action is—in terms of opportunities provided by an emerging field which can help to solve some of the most pressing problems in healthcare, government, education and the environment—find this field compelling.

Students who are motivated by interesting careers in incredibly diverse fields, from health care to national security are information science majors.

Those excited about a new and promising field gravitate to information science.

## **What are Pitt's strengths in Information Science?**

The University's program has been designed with input from corporate leaders and alumni.

The program provides a strong base of knowledge about programming principles, database systems, networks, systems analysis and human-computer interaction.

Studies can then be tailored by choosing one of three industry-centered concentrations: information systems, user-centered design, or networks and security.

The faculty is young and vigorous and multidisciplinary.

Because Pitt is in a major urban environment and SIS has relationships with many companies and organizations, many IS students receive internships and placement rates routinely exceed 92%.

## **What is the job market for information sciences?**

Demand is outstripping supply. Already companies in Pittsburgh (Alcoa, PPG, US Steel, and Highmark) and nationally (Microsoft, Northrop Grumman, Freddie Mac and others) are demanding IS graduates faster than we can supply them.

Monster.com predicts that of the 10 fastest-growing occupations up to 2010, eight will be computer-related.

In a "Pennsylvanian Workforce 2010" report, the fastest growing sector is expected to be computing and data processing services, projected to grow by almost 24%.

As the global reliance on networked, digital information continues to grow, employers will increasingly be interested in employees who can develop systems to handle their information needs and problems.

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### **ADMISSION TO THE PROGRAM**

Upon completion of 55 credits (includes current term credits), students apply to the Information Science program simply by meeting with their advisor and completing the Undergraduate Academic Program Change Form and a SIS School Transfer Application.

Advisors will submit everything to the School of Information Sciences; it will be reviewed by the admissions committee. Decisions are usually made within two weeks.

**Deadlines:** August 1 for the Fall Term,  
December 1 for the Spring Term,  
April 1 for the Summer Term

**A student must have satisfied the following to be considered for admission:**

- Completion of 55 credits (includes current term credits)
- Information Science GPA at least a 2.75
- Completion of Introduction to Information Science (INFSCI 0010)

Other courses may improve the application. Discuss these optional courses with your advisee.

- Business Calculus (MATH 0120) or Calculus 1 (MATH 0220) or  
Discrete Mathematics (MATH 0400)
- Introduction to Logic (PHIL 0500) or Introduction to Linguistics (LING 1000)
- Statistics (STAT 0200 or STAT 1000 or STAT 1100)
- Introduction to Psychology (PSY 0010 or PSY 0012)

Other INFSCI Courses:

- Human Factors (INFSCI 1044)
- Telecommunications (INFSCI 1070)
- Database Management Systems ( INFSCI 1022)