Information Systems (ISE)

Major and Minor in Information Systems
Department of Computer Science, College of Engineering and Applied Sciences

CHAIRPERSON: Arie Kaufman UNDERGRADUATE PROGRAM DIRECTOR: Radu Grosu UNDERGRADUATE SECRETARY: Rose Ann Vultaggio
OFFICE: 1440 Computer Science PHONE: (631) 632-8470 E-MAIL: Radu.Grosu@stonybrook.edu
WEB ADDRESS: http://www.cs.sunysb.edu

Faculty
Please see the faculty listing in the entry for the Computer Science major.

The Information Systems major, which is housed in the Department of Computer Science, prepares its graduates to design and build computerized data processing and decision support systems. The program is technically oriented, emphasizing the design and implementation aspects of large-scale information systems as well as the more traditional managerial and organizational issues, and it balances development of system engineering skills with learning to deliver reliable systems on time and within budget. Throughout the program, students are exposed to diverse application areas ranging from traditional business, finance, and accounting through telecommunications, networks, multimedia, and database management, to computer-aided design and industrial production management systems.

Courses Offered in Information Systems
See the Course Descriptions listing in this Bulletin for complete information.

ISE 102 Introduction to Web Design and Programming
ISE 108 Introduction to Programming
ISE 208 Intermediate Programming
ISE 215 Foundations of Computer Science
ISE 300 Writing in Information Systems
ISE 301 History of Computing
ISE 302 Professional Ethics for Computer Science
ISE 305 Database Systems Design and Practice
ISE 308 Software Engineering
ISE 311 Systems Administration
ISE 315 Database Transaction Processing Systems
ISE 320 Information Management
ISE 323 Human-Computer Interaction
ISE 325 Computers and Sculpture
ISE 332 Introduction to Scientific Visualization
ISE 334 Introduction to Multimedia Systems
ISE 340 Design of Computer Games
ISE 364 Advanced Multimedia Techniques
ISE 377 Introduction to Medical Imaging
ISE 378 Introduction to Robotics
ISE 390-391 Special Topics in Information Systems
ISE 475 Undergraduate Teaching Practicum
ISE 487 Research in Information Systems
ISE 488 Information Systems Internship

Requirements for the Major in Information Systems (ISE)
The major in Information Systems leads to the Bachelor of Science degree. At least two of the courses under requirement A.2. below must be completed at Stony Brook.
Completion of the major requires approximately 70 credits.

A. Information Systems Courses
1. ISE 102 Introduction to Web Design and Programming
ISE 108 Introduction to Programming
ISE 208 Intermediate Programming
2. ISE 302 Professional Ethics for Computer Science
ISE 305 Database Design and Practice
ISE/CSE 308 Software Engineering
ISE 311 Systems Administration
ISE 320 Information Management
3. Three additional upper-division ISE courses, excluding ISE 475.

B. Mathematics Courses
1. AMS 151 Applied Calculus I (or MAT 131 or MAT 141 or MAT 125, 126)
2. AMS 201 Matrix Methods and Models (or AMS 210 Applied Linear Algebra or MAT 211 Introduction to Linear Algebra)
3. AMS 310 Survey of Probability and Statistics (or ECO 320 Mathematical Statistics)

C. Specializations
Students must complete a specialization in one of the application areas listed below, or else design a specialization of six to eight courses in another application area in consultation with the ISE Undergraduate Director before the courses for the specialization are completed.
D. Upper-Division Writing Requirement:
ISE 300 Writing in Information Systems

All degree candidates must demonstrate technical writing skills at a level that would be acceptable in an industrial setting. To satisfy this requirement, students must pass ISE 300 Writing in Information Systems, a course that requires various writing assignments, including at least one significant technical paper.

EST 304 Communication for Engineers and Scientists may be taken in lieu of ISE 300 to fulfill the ISE upper-division writing requirement.

Grading

All courses taken to satisfy Requirements A through D must be taken for a letter grade and completed with a grade of C or higher. A grade of C or higher is required in prerequisite courses listed for all CSE and ISE courses.

Specialization in Business and Economics

Students may take a specialization in Psychology consisting of the following courses:

1. Core Courses
   a. BUS 111 Introduction to Business for Non-Business Majors
   b. ECO 108 Introduction to Economics
   c. BUS 210 Financial Accounting

2. One of the following:
   BUS 214 Managerial Accounting
   BUS 346 Operations Management
   BUS 349 Management Science
   BUS 355 Investment Analysis
   BUS 356 Financial Engineering
   ECO 348 Analysis for Managerial Decision Making
   ECO 368 Modern Portfolio Theory
   ECO 389 Corporate Finance
   EST 392 Engineering and Managerial Economics
   EST 393 Production and Operations Analysis

3. One of the following:
   BUS 347 Business Ethics
   BUS 348 Principles of Marketing
   ECO 326 Industrial Organization
   ECO 343 Transformation in Economic Systems
   ECO 345 Law and Economic Issues
   POL 319 Business Law

Sample Course Sequence for the Major in Information Systems

Freshman Fall Credits
First Year Seminar 101 1
ISE 102 3
AMS 151 3
Specialization Course 3
WRT 101 (D.E.C. A) 3
Total 13

Spring Credits
First Year Seminar 102 1
ISE 108 3
Specialization Course 3
WRT 102 (D.E.C. A) 3
D.E.C. 3
D.E.C. 3
Total 16

Sophomore Fall Credits
ISE 208 3
ISE 215 3
AMS 201 3
ECO 108 (D.E.C. F) 4
D.E.C. 3
Total 16

Spring Credits
CSE 219 3
ISE 302 1
ISE 320 3
Specialization Course 3
D.E.C. 3
ISE Elective 3
Total 16

Junior Fall Credits
ISE 305 4
ISE 308 3
AMS 310 or ECO 320 3
Specialization Course 3
D.E.C. 3
Total 16

Spring Credits
ISE 311 3
ISE elective 3
Specialization Course 3
D.E.C. 3
ISE Elective 3
ISE Elective 3
Total 15

Senior Fall Credits
ISE 300 1
ISE elective 3
Specialization Course 3
D.E.C. 3
D.E.C. 3
Total 13

Spring Credits
ISE elective 3
ISE elective 3
Specialization Course 3
D.E.C. 3
Elective 3
Elective 3
Elective 3
Total 15

Specialization in Psychology

Students may take a specialization in Psychology consisting of the following courses:

1. Core Courses
   a. PSY103 Introduction to Psychology
   b. PSY 201 Statistical Methods in Psychology
   c. PSY 310 Research and Writing in Psychology

2. One of the following:
   PSY 220 Survey in Developmental Psychology
   PSY 230 Survey in Clinical Psychology
   PSY 240 Survey in Social Psychology
   PSY 250 Survey in Biopsychology
   PSY 260 Survey in Cognition and Perception
3. Two additional courses numbered 200 or higher other than PSY 273, 283, 310, 399, 447, 475, 476, 487, 488, 495, 496

Specialization in Technological Systems Management

Students may take a specialization in Technological Systems Management consisting of the following courses:

1. Four required courses:
   a. EST 202 Introduction to Science, Technology, and Society Studies
   b. EST 391 Technology Assessment
   c. EST 392 Engineering and Managerial Economics
   d. EST 393 Project Management

2. Two elective courses from the following:
   EST 310/ISE 340 Design of Computer Games
   EST 320 Communication Technology Systems
   EST/ISE 323 Human-Computer Interaction
   EST 326 Management for Engineers
   EST 327 Marketing for Engineers
   EST 421 Starting the High-Technology Venture

Note: Courses cross-listed between ISE and EST may be taken either as ISE electives (Item A.3) or as TSM specialization electives (Item C).

Specialization in Other Application Areas

A student may design a specialization in another application area of information systems in consultation with the ISE Undergraduate Director before the courses for the specialization are completed.

Requirements for the Minor in Information Systems (ISE)

The minor in Information Systems is open to all students not majoring in either Computer Science or Information Systems or minoring in Computer Science. To declare the minor in Information Systems, students must complete ISE 102 with a grade of C or higher. The minor requires seven courses totaling 21 credits as outlined below:

1. ISE 102 Professional Ethics for Computer Science

2. ISE 108 Introduction to Programming

3. ISE 208 Intermediate Programming

4. Four electives totaling at least twelve credits. Electives must include nine credits of upper-division courses and at least nine credits of ISE courses. Approved electives include most ISE courses, as well as other courses relevant to Information Systems; for details contact the Department of Computer Science Undergraduate Office.

Note: All courses above must be passed with a grade of C or higher.