Information Systems (ISE)

Major and Minor in

Information Systems

Department of Computer Science, College of Engineering and Applied Sciences
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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

Acceptance into the Information Systems Major

Qualified freshman and transfer applicants may be accepted directly into the Information Systems major upon admission to the University. Currently enrolled students may apply for acceptance to the major after completing the following two courses with grades of C or higher and a grade point average of 2.80 or higher.

1. ISE 102 Introduction to Web Design and Programming
2. ISE 108 Introduction to Programming

Enrolling in ISE Courses

To enroll in ISE courses, students must have completed all prerequisites with a grade of C or higher (Pass/No Credit grades are not acceptable to meet prerequisites). For transfer students, official transfer credit evaluations must have been completed and approved.

Failure to satisfy the prerequisites or to attend the first class may result in deregistration. The Pass/No Credit option is not available to ISE majors for ISE courses.

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

   ISE 215 Foundations of Computer Science
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

POL 359 Public Policy Analysis

POL 364 Organizational Decision Making

SOC 381 Sociology of Organizations

4. One of the following:

BUS 340 Information Systems in Management

BUS 343 Expert Systems in Business

EST 302 Assessment of Computer-Based Technologies

EST 305 Applications Software in Information Management

EST 320 Communication Technology Systems

EST 325 Technology in the Workplace

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
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
D.E.C.	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 Introduction to Web Design and Programming
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.