ISE

Information Systems

ISE 300 Writing in Information Systems
See Requirements for the Information Systems Major, Upper-Division Writing and Oral Skills Requirement.
Prerequisites: WRT 102; U3 or U4; ISE major
1 credit

ISE 305 Database Design and Practice
The design of database applications including Entity-Relationship data modeling; the relational data model, the SQL database query language, application development, and database administration. Students will complete a project that includes designing a database application and implementing it using database development tools. May not be taken for credit in addition to CSE 305.
Prerequisites: CSE 214 or 230
3 credits

ISE 308 Software Engineering
Introduces the basic concepts and modern tools and techniques of software engineering. Emphasizes the development of reliable and maintainable software via system requirements and specifications, software design methodologies including object-oriented design, implementation, integration, and testing; software project management; life-cycle documentation; software maintenance; and consideration of human factor issues. This course is offered as both CSE 308 and ISE 308.
Prerequisites: CSE 219 or ISE 305
3 credits

ISE 310 Data Communication and Networks
Study of communication networks. Local area networks (LAN), integrated voice and data systems (IVDS), and wide area networks (WAN). Their topologies: bus, token passing, tree, point to point. Protocols, speed, and distance limitations: RS232, TCP/IP, MAP/TOP, ONS, OSI. Network design and management will be studied in various environments. May not be taken by students with credit for CSE/ISE 346. This course is offered as both CSE 310 and ISE 310.
Prerequisites: CSE 214 and CSE 220
Advisory Prerequisite: AMS 310
3 credits

ISE 315 Database Transaction Processing Systems
Theory and practice of design for applications involving transactional access to a database. Transaction design, schema design, restart and recovery, journaling, concurrency control, distributed databases. Student groups perform design and implementation of significant database application. This course is offered as both CSE 315 and ISE 315.
Prerequisites: CSE/ISE 305
3 credits

ISE 332 Introduction to Visualization
Visualization of scientific, engineering, medical, and business data sets. Mechanisms to acquire sampled, computed, or synthetic data and methods to transform symbolic into the visual. Topics include classic visualization process; visual perception; volume and surface visualization; methods for visualizing sampled, simulated, and geometric objects; and visualization systems. Emphasis on applications and case studies. This course is offered as both CSE 332 and ISE 332.
Prerequisites: CSE 219; MAT 211 or AMS 210
3 credits

ISE 333 User Interface Development
Survey of user interface systems, including topics such as command language, windowing, multiple input/output devices, architecture of user interface management systems, and tool kits for designing user interfaces. Additional topics may include human factors, standards, or visual languages. Students participate in a project involving the design and implementation of a user interface system. This course is offered as both CSE 333 and ISE 333.
Prerequisite: CSE 219
Advisory prerequisite: PSY 103
3 credits

ISE 334 Introduction to Multimedia Systems
Survey of technologies available for user interfaces. Discussion of hypertext; voice, music, and video together with tools and models for capturing, editing, presenting, and combining them. Capabilities and characteristics of a range of peripheral devices including devices based on posture, gesture, head movement, and touch. Case studies of academic and commercial multimedia systems including virtual reality systems. Students participate in laboratory exercises and build a multimedia project. This course is offered as both CSE 334 and ISE 334.
Prerequisites: CSE or ISE major; U3 or U4 standing
3 credits

ISE 336 Internet Programming
Introduces the design and development of software for Internet commerce. Topics include extended markup language, servlets, cookies, sessions, Internet media types, Web protocols, digital signatures, certificates, encryption, and the wireless Internet. This course is offered as both CSE 336 and ISE 336.
Prerequisite: CSE 219
3 credits

ISE 364 Advanced Multimedia Techniques
Digital media production techniques for high-bandwidth applications such as electronic magazine illustration, broadcast television, and motion picture special effects. Students explore techniques such as 3D modeling and character animation, video compositing, and high-resolution image processing in a state-of-the-art multimedia computing laboratory. High-capacity multimedia storage, high-speed networks, and new technologies such as DVD, HDTV, and broadband will be reviewed. This course is offered as both CSE 364 and ISE 364.
Prerequisites: CSE/ISE 334 and permission of the instructor
3 credits

ISE 390 Special Topics in Information Systems
Lecture or seminar course on a current topic in information systems. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes, but cannot be used more than twice to satisfy ISE major requirements.
Prerequisites: ISE or CSE major; U3 or U4 standing
3 credits

ISE 391 Special Topics in Information Systems
Lecture or seminar course on a current topic in information systems. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes, but cannot be used more than twice to satisfy ISE major requirements.
3 credits

ISE 475 Undergraduate Teaching Practicum
Students assist faculty by conducting a recitation or laboratory section that supplements a lecture course. The student receives regularly scheduled supervision from the faculty advisor. May be used as an open elective only and repeated once.
Prerequisites: U4 standing as an undergraduate CEAS major; a minimum g.p.a. of 3.00 in all Stony Brook courses; grade of B or better in the course in which the student is to assist; or permission of department
3 credits

ISE 487 Research in Information Systems
An independent research project with faculty supervision. Only three credits of research electives (AMS 487, BME 499, CSE 487, ISE 490, ESM 499, EST 499, ISE 487, MEC 499) may be counted toward technical elective requirements. May not be taken for more than six credits.
Prerequisites: Permission of instructor and department
6-9 credits

ISE 488 Information Systems Internship
Participation in local, state, national, or international private enterprises, public agencies, or nonprofit institutions. Students are required to submit a written proposal, progress reports, and a final report on their experience to the client and to the department. May be repeated up to a limit of 12 credits but only 3 credits of CSE or ISE 488 may be used as an elective to satisfy ISE major requirements.
Prerequisites: ISE major; U3 or U4 standing; permission of faculty sponsor and department
3 credits, S/U grading