

Computer Information Systems

The Computer Information Systems department provides students from a broad spectrum of majors and disciplines the opportunity to develop basic skills necessary to design information delivery systems. Computer Information Systems minors prepare for this role by studying foundation-level skills in software applications, database design, computer programming, information architecture, user-interface design, and other relevant areas. Students with a high level of interest and motivation should be able to develop additional skills independently in relation to their major fields of interest.

Minor program requirements

To receive an Computer Information Systems minor, students must complete 21 credit hours, including 106 or 108; 250, 390; and twelve hours of the following: 104, 105, 120, 240, 251, 255, Art 218, Art 318, Art 319, ESS 375.

The semesters listed after course descriptions indicate when courses are expected to be offered. Schedules are subject to change; students should confirm semester offerings with the department when planning degree programs.

- 104. Computer Design Fundamentals (3).** The basics of computer design: how computers work and how hardware and software function together. Students learn design principles of modern computers, build a functioning computer, and develop problem-solving techniques related to computer systems. Fall
- 105. Operating System Fundamentals (3).** The structure and functions of operating systems. Topics include the relationship of the operating system to hardware and software, memory management, data storage, networks, viruses, and data security. Practice and problem-solving related to operating systems. Spring.
- 106. Computer Programming (3).** Provides a working knowledge of Visual Basic, enables students to use computer facilities, and demonstrates some of the capabilities, limitations and applications of computers. Students design programs which incorporate sorts, two-dimensional arrays, subroutines and strings, and which evaluate elementary sample statistics. (Prerequisite: Mathematics 101 or Mathematics Placement Examination.) Fall.
- 108. Web-Based Programming (3).** Programming concepts fundamental to the understanding of digital technology. Using a markup language and a client-side scripting language, students learn the fundamentals of computer programming (files, strings, variables, loops, network structure, documentation, good programming practices) in a web-based environment. Fall.

Computer Information Systems

- 120. Introduction to Digital Culture (3).** The role of information and information technology in contemporary culture. What information do human beings need in the era of the Information Revolution? How is it organized and accessed? What social and technical problems are associated with access to information? What intellectual property issues are involved? Spring.
- 140. Business Applications for Computers (3).** A practical course in business problem solving, decision making and presentation of information utilizing microcomputer technology. Through business problem simulations the student will actively solve problems while learning about microcomputer hardware configuration, operating systems, and common business microcomputer software including spreadsheets, data base management systems, and business graphics. (Prerequisite: Math 101. Preference given to students who have completed or are currently enrolled in an accounting or business administration course. Can not apply toward Computer Information Systems minor.) Fall, spring.
- 240. Relational Databases (3).** Relational database theory and structure, the development of relationships and queries. (Prerequisite: 106 or 108.) Spring.
- 250. Advanced Web-Based Programming (3).** The use of advanced programming techniques, using server-side software to develop dynamic web pages. Discussion of relevant human interface issues. (Open to freshmen. Prerequisite: 106 or 108 or instructor's permission) Spring.
- 251. Data Structures in Object-Oriented Languages (3).** Study of data structures (such as recursion, lists, trees, heaps, hashing) relevant to programming in object-oriented languages such as C++ and Java. (Prerequisite: 250) Offered as needed.
- 255. Interfacing with Technology (3).** Techniques of interfacing computers and networks with digital and analog devices such as scientific and musical instruments. Development of projects for collecting, storing, and disseminating information electronically and controlling external objects through programming. (Prerequisite: 106 or 108) Offered as needed.
- 270. Topics (1-3).** Study of a language or topic not covered elsewhere in the curriculum. May be repeated for credit with different topics. Offered as needed.
- 390. Advanced Project (3).** Identification of and solution to a web-based programming problem related to the student's major. A formal presentation is made to the department, including a description of the problem, a description of the solution, user-interface questions, a well-written program, and an explanation of how the program solves the problem. (Prerequisite: department chairperson's permission.) Offered as needed.

Earth Science

Related Courses in Other Departments

ART 218. Digital Imaging (3).

ART 318. Graphic Design (3).

ART 319. Web Design (3).

ESS 375. Geographic Information and Positioning Systems (4).

Special and Advanced Courses

199. Exploratory Internship (1-3).

299. Experimental Course (1-3).

399. Professional Internship (1-12).

451. Independent Study (1-3).

499. Advanced Experimental Course (1-3).

Earth Science

Major Program Requirements

Bachelor of Arts in Earth Science (30 hours and 9-12 hours of cognates)

Earth Science Core (8 hours)

ERTH 101

Physical Geology (4)

ERTH 102

Historical Geology (4)

Earth Science Electives (22 hours), at least 12 hours of which must be from courses numbered 300 or above.

Cognates (9-12 hours)

Three courses from the following: CHEM 103, 104; PHYS 101, 102, 205, 206; MATH 104, 115, 135, 204, 205; or CIS 106.

Bachelor of Arts candidates who plan professional earth science careers are strongly encouraged to include in their degree programs the following courses, which are usually required for entry into graduate school: Earth Science 301, 302, 307, 313, 315, 318; Chemistry 103, 104; Physics 101, 102 and Mathematics 115.