

Computer Information Systems

Prerequisite courses must be passed with a minimum grade of C.

LOWER DIVISION

CIS 100. Critical Thinking with Computers (3). Apply critical thinking skills studying human and computer parallels, computer technology and methodology, and program development. [GE.]

CIS 110. Introduction to Computers (3). Role of computer systems in organizations: hardware, software, data, people, and procedures. Software productivity tools and computerized information systems as used by professionals in the business environment. [Weekly: 2 hrs lect, 2 hrs lab.]

CIS 130. Introduction to Programming (3). Problem decomposition, algorithm design, modularity, cohesion, coupling, control structures, simple data structures, testing, and error detection approaches and documentation. [Prereq: math code 40; CIS 110 or three units from 171, 172, 173, or 174. CIS 110 can also be taken concurrently. Weekly: 2 hrs lect, 2 hrs lab.]

CIS 170. Essentials of Procedural Programming I (1). Data declaration, data manipulation, control structures. May use Pascal, C, or other appropriate language. Conceptual rather than pragmatic. [CR/NC. Recommended preparation: computer literacy course, such as CIS 110. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 171. Word Processing I (1). Enter text, edit, store, retrieve, format, footnote, print. Taught on IBM/compatible or Macintosh platforms as delineated in course schedule. [CR/NC. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 172. Spreadsheets I (1). Enter and modify data, construct formulas, format, store/retrieve, print. Taught on IBM/compatible or Macintosh platforms as delineated in course schedule. [CR/NC. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 173. Micro Databases I (1). Create, populate, modify, interrogate. Taught on IBM/compatible or Macintosh platforms as delineated in course schedule. [CR/NC. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 174. Microbased Graphics I (1). Fundamental charting techniques, data management, presentation styles. Taught on IBM/compatible or Macintosh platforms as delineated in course schedule. [CR/NC. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 176. Introduction to Internet (1). Use computers for global communication, exchanging information between distant locations. Email, telecommunications, and file transfer methods between mainframe, mini, and microcomputers. [CR/NC. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 178. Creating Web Homepages (1). Using

HTML, an Internet browser, and a text editor; create Web pages with links to various remote files. [CR/NC. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 180. Selected Introductory Topics in Computer Literacy (.5-3). May include communications, operating systems, specialized applications software, or general overview topics at introductory levels. [Possible mandatory CR/NC. Meets as lecture (CIS 180B), lab (180L), or a combination (180, 180C). May be limited to five weeks (CIS 180B, 180C, 180L). Rep. with different topics.]

CIS 230. C++ Programming (3). C++ and its object-oriented techniques: encapsulation, modularization, data definition (including classes), inheritance, flow control, and other features to promote block-structured and object-oriented programming skills. [Prereq: CIS 130 or IA. Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 235. Java Programming (3). Object orientation; event handling; abstract windowing toolkit applets; applications; Java database connectivity; applications programming interface and Java doc. [Prereq: CS 131 or CIS 230. Service fee.]

CIS/CS 240. Visual Basic Programming (3). Concepts in object-oriented, event-driven graphic user interface (GUI) programs to develop/implement computer applications for Windows environment. [Prereq: CS 131 or CIS 130 or 230 or 235 or 291 or IA.]

CIS 246. Multimedia I (3). Introduction in the techniques of multimedia systems and production. Treatment of the basic theoretical computer science principles related to multimedia systems and practical, hands-on experience with various software and media used in computer-based multimedia systems. [Weekly: 2 hrs lect, 2 hr lab.]

CIS 250. Introduction to Operating Systems (3). Operating system architectures for selected mainframes, minicomputers, and microcomputers. Compare system function, performance advantages and limitations, interoperability issues, and user interface. [Prereq: CIS 130 or IA. Weekly: 2 hrs lect, 2 hrs lab.]

CIS 260. Systems Analysis (3). Information systems life cycle and its relationship to business organizations. Tools and techniques to analyze, design, develop, and implement a computer-based business information system. Computer-assisted software engineering (CASE) tools. [Prereq: CIS 130 or CS 131. Weekly: 2 hrs lect, 2 hrs lab.]

CIS 271. Word Processing II (1). Search/replace, columns, fonts, merging, macros, thesaurus. Taught on IBM/compatible or Macintosh platforms as delineated in course schedule. [CR/NC. Prereq: credit in CIS 171 or IA. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 272. Spreadsheets II (1). Sorting, data managing, macros, graphing, data import and

export. Taught on IBM/compatible or Macintosh platforms as delineated in course schedule. [CR/NC. Prereq: credit in CIS 172 or IA. Five weeks: 2 hrs lect, 2 hrs lab.]

CIS 291. Data Structures in C++ (3). Techniques for representing and manipulating data structures using C++. Static and dynamic properties of data structures. Represent structured information such as stacks, queues, trees, linked lists, graphs. Efficient algorithms for creating, finding, altering, and removing structured data. [Prereq: CIS 230 or IA. Weekly: 2 hrs lect, 2 hrs lab.]

UPPER DIVISION

CIS 309. Computers & Social Change (3). How computers influence societal systems. Issues: privacy, employment, politics, social interaction, and risk. Group discussion and writing on selected issues. [CWT.]

CIS 310. Database for Non-Majors (3). Concepts/applications for non-computing science majors.

CIS/CS 315. Database Design & Implementation (3). Design/implementation concepts for relational model. Enterprise and entity-relationship modeling. Schema development: normalization; SQL data definition and data manipulation language; user-defined types, rules, and triggers to support the schema. Features to support integrity, ease of use, and control: concurrency, locking, distribution, performance. [Prereq: CIS 230, 250, 260 or CS 233; MATH 253 recommended. Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 318. Programming Database Applications (3). 4th generation language tools. Ad hoc interaction with database using SQL. Program SQL scripts; design applications using forms and menus; program an application using form and menu structures; program with a report generator; access the database from a procedural language. [Prereq: CIS/CS 315, MATH 253. Weekly: 2 hrs lect, 2 hrs lab.]

CIS 350. Computer Architecture & Assembly Language (3). Computer system components and their relationships. Digital logic, microarchitecture, microprogramming. Number systems; two pass assembler; instruction sets; addressing modes; using assembly language. [Prereq: CIS 230 and 250. Desired: CIS/CS 291 (or IA for students from other disciplines). Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 372. Telecommunications (3). Data communications principles and applications; administering and managing communications systems. Protocols, networks, communication hardware, design, performance analysis. [Prereq: CIS 130 and 250 or IA. Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 373. Network Design & Implementation (3). Comprehensively examine network design standards, communication protocols, configuration and management methods, security, and

traffic analysis. Practical lab activities with tools and equipment. [Prereq: CIS 372 or CS 372.]

CIS 446. Multimedia II (3). Advanced instruction in the techniques of multimedia systems and production. Treatment of the more complex theoretical computer science principles related to multimedia systems and practical, hands-on experience with various software and media used in computer-based multimedia systems. [Prereq: CIS 246. Weekly: 2 hrs lect, 2 hr lab.]

CIS 450. Information Resources Management (3). Survey organizational information needs; develop an organizational information strategy; plan and control; staff for success; write/review requests for proposals and bids; analyze make vs. buy decisions; write/review contracts; make management presentations. [Prereq: CIS/CS 318 and 372.]

CIS 464. Electronic Commerce (e-commerce) (3). Conceptual overview of issues pertaining to e-commerce as well as hands-on development of electronic commerce Internet Web Sites. [Prereq: CIS 110 or IA. Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 475. Geographic Information Systems: Spatial Analysis & Modeling (3). GIS applications. Vector- and raster-based systems. Layering techniques, representation methods, analytical operations, information management/integration. [Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 480. Selected Topics in Information Systems (1-4). May include object-oriented programming, artificial intelligence programming, computer graphics, or specialized application tools. [Possible mandatory CR/NC. Weekly: meets 1 hr per unit as lect (CIS/CS 480B); 2 hrs per unit lab (480L); or combination of 2 hrs lect, 2 hrs lab (480). Rep with different topics.]

CIS/CS 482. Internship (1-4). Supervised experience in business, governmental, or service agencies, matching theory with practice. [CR/NC. Prereq: IA. Weekly: 3 hrs per unit of credit.]

CIS/CS 492. Systems Design & Implementation (3). Apply computer programming and implementation concepts to comprehensive group project. Use management planning and scheduling tools; practice assessing and reporting progress; develop, test, quality assure software; develop documentation. CIS majors only. [Prereq: CIS/CS 318, 350, 372 and 450. All prereqs must be completed with C or above. Weekly: 2 hrs lect, 2 hrs lab.]

CIS/CS 499. Directed Study (1-4). Individual study on selected topics. Open to advanced students with consent of faculty sponsor and DA.