

## Computer And Inform Sciences

### **CIS 150L Intro to Comp Applications Lab 0 cr**

Laboratory course for CIS 150, Introduction to Computer Applications.

### **CIS 250L Adv Comp Applications Lab 0 cr**

Laboratory course for CIS 250, Advanced Computer Applications.

Pre-requisite: CIS Proficiency Exam P or CIS 150 Minimum Grade of C.

### **CIS 010 Computer Proficiency Exam 0 cr**

The purpose of this course is to administer the Computer Proficiency Exam (CPE) for enrolled students. The CPE consists of multiple choice and performance-based questions for general computer, internet, WWW, e-mail, and office application concepts. Performance-based questions require a series of actions in a simulated environment to demonstrate specific skills being assessed. No outside materials or assistance from the applications' Help files are allowed.

### **CIS 101 Freshman Seminar CIS 2 cr**

A course for first-time students that assists with maximizing the student's potential to achieve academic success and to adjust responsibly to the individual and interpersonal challenges presented by college life for a major in the School of CIS. Taught in small groups, the course provides an introduction to the nature of higher education and a general orientation to the functions and resources of the University and the School of CIS. Extensive reading and writing assignments relevant to the student's first year experience are required.

### **CIS 110 Intro to Comp-Info Sciences 3 cr**

An introduction to information technology using a programming language to study applications in text searching, in real-time 3-D animation, and in sound production. A discussion of the social, ethical, economic, and philosophical implications of computing.

### **CIS 115 Beginning Programming 4 cr**

A first course in programming using a visual, event-driven programming language. Coverage includes algorithmic problem solving, fundamentals of programming, procedures, decisions, repetition, and arrays.

Pre-requisite: MyMathTest 080 or ACT Math 23 or (MA 112 Minimum Grade of C or MA 171 Minimum Grade of C) or MA 267 Minimum Grade of C or (MA 125 Minimum Grade of C or MA 132 Minimum Grade of C).

### **CIS 150 Intro to Computer Applications 3 cr**

This course is designed to provide a broad based introduction to the use of computers and productivity software technologies. Topics to be covered include: use of a current Operating System and basic file management; the fundamentals of word processing, spreadsheet and graphics-based presentation software; and basic image management related to documents and reports. Other topics covered include information assurance and computing safety as related to PC/Internet usage.

### **CIS 155 Educational & Social Computing 3 cr**

This course provides a hands-on approach that focuses on the use of current and emerging computing technologies. Topics include: Use of the University adopted Learning Management System (LMS), Google Apps, Google Docs, safe computing practices, and current trends in social networking.

### **CIS 190 Special Topics- 1 TO 3 cr**

Selected topics in computer and information sciences. Requires permission of Specialization Coordinator.

### **CIS 210 Intro to C++ Programming 3 cr**

Introduction and fundamentals of C++ programming, input-output operations, variables, data types, arithmetic expressions, control statements, looping, functions, arrays, pointers, strings, structures, and abstract data types. Pre-requisite: MA 125 Minimum Grade of C. MA 125 can be taken concurrently with this course.

### **CIS 211 Advanced C++ Programming 1 cr**

Advanced concepts in C++ programming, constructors, destructors, classes and operation overloading. Pre-requisite: (CIS 121 Minimum Grade of C or CIS 210 Minimum Grade of C).

### **CIS 227 Numerical Computation I 3 cr**

Floating point numbers, representation, and errors; software tools for scientific computing; elementary problems in scientific computing.

Pre-requisite: MA 126 Minimum Grade of C or MA 233 Minimum Grade of C.

### **CIS 235 Programming Language Seminar 3 cr**

Fundamentals of syntax and style for a relevant, or current programming language. Includes application development in that language. Recommended: Knowledge of a programming language.

**CIS 250 Advanced Comp Applications 3 cr**

This course is designed to provide continuing, advanced coverage of productivity software technologies. Topics to be covered in depth include: fundamental and advanced features of spreadsheet and database management software. Other topics covered include information assurance and computing safety as related to PC/Internet usage.

Pre-requisite: CIS 150 Minimum Grade of C or CIS Proficiency Exam P or CIS 010 Minimum Grade of S.

**CIS 300 Information Tech in Society 1 cr**

A discussion of personal, local, national, and global impact of information technology on ethical, legal, and social issues. Requires Junior standing in the School of Computing.

**CIS 321 Data Comm and Networking 3 cr**

An introduction to data communications, computer networking and network operating systems. Topics include: basic concepts of data transmission, network architectures, communications devices, and communication protocols. Pre-requisite: ISC 245 Minimum Grade of C or ITE 271 Minimum Grade of C or CIS 120 Minimum Grade of C or CSC 120 Minimum Grade of C.

**CIS 324 Database Design-Dev-Mgt 3 cr**

Analysis, design, and development of desktop database systems. Coverage of normalization concepts, DBMS models, E-R/Semantic modeling, and query processing. Pre-requisite: ( MA 112 Minimum Grade of C or MA 171 Minimum Grade of C) or (MA 120 Minimum Grade of C or MA 287 Minimum Grade of C) or MA 267 Minimum Grade of C or (MA 125 Minimum Grade of C or MA 132 Minimum Grade of C) or ACT Math 23 ) or MyMathTest 080 and (ISC 245 Minimum Grade of C or ITE 271 Minimum Grade of C) or (CSC 121 Minimum Grade of N or CIS 121 Minimum Grade of C).

**CIS 401 Accelerated Programming 3 cr**

This course presents programming concepts in an accelerated manner. Coverage includes ADT's, Classes and Class Libraries, and simple data structures such as linked lists, stacks, queues. Laboratory assignments will be done in a high level, object-oriented language. This course does not count towards a graduate degree in CIS. Requires prior programming experience and permission of Coordinator.

**CIS 402 Accelerated OS-Comp Arch 3 cr**

This course presents computer architecture and operating systems concepts in an accelerated manner. Coverage includes machine and assembly languages, functioning of a simple processor, machine level data flow, microprogramming, I/O, interrupts and processing drivers, memory management, dynamic process scheduling, and multi-tasking. This course does not count toward a graduate degree in CIS. Requires prior programming experience desired and permission of Coordinator.

**CIS 403 Accelerated Data-File Structs 3 cr**

This course applies advanced programming concepts and techniques to data structures such as linear and linked list trees, records, files, and database. Sequential and random access file processing methods; searching and sorting methods. Laboratory assignments will be done in a high-level, object-oriented language. This course does not count toward a graduate degree in CIS.

Pre-requisite: CIS 121 Minimum Grade of B or CIS 123 Minimum Grade of B or CIS 142 Minimum Grade of B or CIS 401 Minimum Grade of B or CIS 501 Minimum Grade of B.

**CIS 439 Windows Programming 3 cr**

This course continues and expands the study of programming begun in either ITE 285 or CIS 121. Concepts previously learned are extended to application programming in the windows (GUI) environments. Students will make use of the OLE, DDE, API features of windows in programming projects. Students will write and use their own DLL's in producing user interfaces and applications projects.

Pre-requisite: CIS 230 Minimum Grade of C or CIS 263 Minimum Grade of C or ITE 285 Minimum Grade of C or ITE 451 Minimum Grade of C or Computer Science Graduate 030 .

**CIS 490 CIS Sp Top - 3 cr**

Advanced selected topics in computer and information sciences. Requires permission of the specialization coordinator.

Pre-requisite: Computer Sci Prof Component 30

**CIS 494 Directed Studies 1 TO 3 cr**

May be taken for a maximum of six credits, only three of which may be applied to the CIS major or minor. Requires permission of the specialization coordinator.

**CIS 496 CIS Internship 0 TO 3 cr**

CIS internship program is designed to give advanced students practical experience in the computer industry. Students will work on sponsored projects with faculty advisors. Credit may apply to degree with approval of the dean. Requires GPA 2.75 or higher and permission of the Dean.

**CIS 497 Senior Capstone Experience-W 3 cr**

A comprehensive team project will be completed and documented. Writing assignments will reinforce the importance of life-long learning, leadership skills, and the ethical issues of computing as well as appropriate resume and job application cover letter creation. Oral and written reports will be required. This course is to be taken the final semester of the student's degree program. Requires application for graduation filed the semester before registering for the course. Completion of the following courses according to major: Computer Science-CSC 333 and CSC 340; Information Systems-ISC 360; Information Technology-ITE 370.

Co-requisite: CIS 498

Pre-requisite: (EH 372 Minimum Grade of C or EH 373 Minimum Grade of C) and (CSC 333 Minimum Grade of C and CSC 340 Minimum Grade of C) or ISC 360 Minimum Grade of C or ITE 370 Minimum Grade of C.

**CIS 498 CIS Senior Seminar 0 cr**

A series of mini-seminars designed to prepare graduating seniors for transition to professional careers in computing or graduate study and to assess student learning outcomes in the curriculum. Mini-seminars would include, but would not be limited to: resume development, interviewing tips and techniques, career planning, professionalism and ethics in the workplace, and advanced graduate study and professional development. Each student will be required to complete one or more senior exit exams and a senior exit survey. Prerequisite: Computer Science: CSC 331; Information Systems: ISC 360; Information Technology: ITE 370.

Co-requisite: CIS 497

Pre-requisite: CIS 497 Minimum Grade of C and (CSC 331 Minimum Grade of C or ISC 360 Minimum Grade of C or ITE 370 Minimum Grade of C). CIS 497 can be taken concurrently with this course.

**CIS 499 CIS Senior Honors Project - H 3 TO 6 cr**

Under the advice and guidance of a faculty mentor, honors students will identify and carry out a research project, relevant to the field of computing, that will lead to a formal presentation at the annual Honors Student Colloquium. The senior honors project will be judged and graded by three faculty chaired by the honors mentor. This course is required for Honors recognition and may be repeated for up to 6 credit hours. Requires completion of an approved project prospectus and permission of the appropriate Coordinator.

Pre-requisite: Computer Sci Prof Component 30

**CIS 518 CIS Research Methodologies 3 cr**

A review of computer and information science literature and research topics. Techniques for defining research goals will be described. Students will be expected to identify a research area and conduct a complete review of the literature.

**CIS 530 Information Assurance/IT Audit 3 cr**

This course covers the understanding and managing of risks and threats to information and information systems. This includes protecting and defending information and information systems by ensuring through authorization and other means concepts such as accessibility, secrecy, reliability, and authentication.

**CIS 535 Digital Forensic Analysis 3 cr**

This course provides students with advanced tools, techniques, and methodologies for accumulating, securing, analyzing, managing, and reporting evidence related to a forensics examination. The professional communication and presentation of the results of forensic investigations will be emphasized.

**CIS 538 OS Concepts and Security 3 cr**

This course examines the concepts of operating systems such as memory and virtual memory management, as well as processor, process, device, and file management. Topics include the management and organization of network operating systems and operating system security and ethics. Students will manage, configure, and secure operating systems such as Windows, Unix, and Linux in laboratory environments.

**CIS 539 Windows Programming 3 cr**

The practice and principles of developing interactive desktop computer applications. Aspects to be covered will include graphical user interface; use of sophisticated widget, container, and utility libraries; event-driven programming; two-dimensional graphics; in-memory database; and deployment.

**CIS 540 Network Security Management 3 cr**

This course examines network and web security issues including: risks and threats, system access points, hardware and software defense methods, and organizational security policies. The course will cover the analysis of systems for vulnerabilities, the implementation of security procedures, the monitoring of systems for security breaches, and the recovery or restoration of breached systems.

**CIS 590 CIS Sp Top - 3 cr**

Advanced selected topics in computer and information sciences. Requires permission of the CSC Coordinator

**CIS 594 Directed Studies - 1 TO 3 cr**

May be taken for a maximum of three credits to count toward the degree. Requires permission of the Director of Graduate Studies.

**CIS 595 CIS Research Development 1 TO 3 cr**

Development of the research proposal for master's thesis. Graduate Professional Component. Requires permission of the Director of Graduate Studies.  
Pre-requisite: CIS 518 Minimum Grade of S.

**CIS 596 CIS Graduate Internship 0 TO 3 cr**

CIS graduate internship program is designed to give graduate students practical experience in the computer industry. Students will work on sponsored projects with faculty advisors. Up to three hours may be counted toward the degree. Requires permission of the Director of Graduate Studies.

**CIS 597 CIS Graduate Seminar 0 TO 1 cr**

This course prepares graduate assistants in the School of CIS to provide support and assistance to faculty for instruction in School of CIS classes. Topical coverage includes but is not limited to: graduate assistant expectations and responsibilities, protection of student educational information (FERPA), practical skills in assisting in computing instruction, graduate assistant best practices, and tips from faculty and experienced graduate assistants. This course does not count towards a graduate degree in CIS. Requires permission of the Director of CIS Graduate Studies.

**CIS 598 CIS Project 1 TO 3 cr**

Approved investigation of original problems under direction of a faculty member. This course may be repeated for a maximum of three hours of credit towards the degree. Requires permission of the Director of Graduate Studies.

**CIS 599 CIS Thesis 1 TO 9 cr**

This course may be repeated for a maximum of six credits. A thesis committee will provide direction during the thesis. Requires approval of the thesis project by graduate faculty and the Director of Graduate Studies.  
Pre-requisite: CIS 595 Minimum Grade of B.

**CIS 694 Directed Study - 3 cr**

This course focuses on the development of the doctoral prospectus leading to the the defense of a dissertation.

**CIS 799 Dissertation 1 TO 9 cr**

This course focuses on the development of the dissertation.