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 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 549  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 550  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 558  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 559  Windows Programming  3 cr
The practice and principles of developing interactive desktop computer applications. Aspects to be covered include graphical user interface; use of sophisticated widget, container, and utility libraries; event-driven programming; two-dimensional graphics; in-memory database; and deployment.

CIS 560  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 defense of a dissertation.

**CIS 799  Dissertation  1 TO 9 cr**
This course focuses on the development of the dissertation.