CSC

CSC 235   Network Security 3.0 UNITS

In this course, students learn to analyze and detect potential threats related to networked or to standalone computers. The course addresses security issues for TCP/IP at various network layers of the Internet including different strategies to harden the system against threats and attacks. Topics covered include data privacy availability and integrity, security issues, basic cryptography, email security, ways to provide privacy, source authentication, message flow confidentiality, and management business responsibility regarding compromised confidential data. The laboratory portion of the course reinforces topics covered in lecture as students gain experience in detecting vulnerabilities, identifying malicious malware, and hardening the network by implementing countermeasures against cyber threats and attacks.

CSC 232   Cybersecurity 3.0 UNITS

This course covers several topics such as Computer Security Technology and Principals, software security and trusted systems, threats, attacks and assets, security functional requirements, computer security strategy (security policy, security implementation, assurance and evaluation), data integrity, data confidentiality, data authenticity and data availability.

CSC 100   Intro to Computers and Computing 3.0 UNITS

This course introduces beginning students to computers and the latest application software. The course includes the history of computers, information processing, file management, discussion of hardware and software, operating systems and utility programs, and the Internet. The laboratory component includes Microsoft Office XP (Word, Excel, Access, PowerPoint). This course may not be used for credit by Computer Science or Management Information Systems majors.

CSC 245   Ethical Hacking 3.0 UNITS

This course provides students with the skills and knowledge required in the field of ethical hacking. Lecture topics introduce the concepts of security testing and network defense/countermeasures against vulnerabilities in networks and incident-handling-methods used when information security is compromised. Students learn how hackers compromise systems and remove their footprints. The laboratory portion of the course reinforces topics covered in lecture by enabling students to learn how to protect networks and systems by using methods learned in class. This course prepares students to take and pass the Ethical Hacking Certificate, which is recognized by industry and sponsored by the Ethical Hacking Console (EC).

CSC 242   Computer Forensics and Investiga 3.0 UNITS

This course is a restricted program elective required for students majoring in Cybersecurity. Students learn about the science of computer forensics and the important procedures necessary for investigating various cybercrimes. Digital forensics investigations are based on the concepts of collecting, analyzing, recovering, and preserving forensic evidence; students learn computer file system storage, analysis, and retrieval. This course prepares students to take and pass the Certified Forensic Investigation Practitioner exam (CCE), industry-recognized certificate by forensic investigators and law enforcement. This course requires two hours of lecture and two hours of hands-on lab.

CSC 101   Scientific Programming 3.0 UNITS

This is an introductory course in scientific programming using a current programming language to solve science and engineering problems. Emphasis is on the logical analysis of a problem and the formulation of a computer programming leading to the solution.

CSC 109   Web Page Design 3.0 UNITS

This course introduces the different tools needed to design and maintain web pages. The standard tool of web page design, HTML (HyperText Markup Language), will be the core design tool. Interactivity through the use of scripts will also be addressed. The process of transferring HTML pages through FTP (File Transfer Protocol) to be published on an official web site will also be addressed. Auxiliary tools such as graphics design, which is an important component of web page design, will also be investigated.

CSC 111   Computer Science I 3.0 UNITS

Introduces the fundamentals of computer science. Algorithm design, flowchart, structure, programming methodology, hardware and software are discussed. A programming language such as Pascal, C++, or Visual Basic 6.0 is used to illustrate these concepts.

CSC 113   Computer Logic and Discrete Math 3.0 UNITS

The basics of number systems. Boolean algebra and logic gates lay the foundation for the study of combinational logic and computer science. Combinatorial applications include Karnaugh Map techniques for logic simplification.

CSC 115   Programming in C++ for Comp Science 3.0 UNITS

In this course the fundamentals of computer science are introduced, with emphasis on programming methodology and problem-solving. Topics include, but are not limited to, concepts of computer systems, software engineering, and algorithm design, programming languages and data abstraction, with applications. A high level language is fully discussed and implemented and serves as a vehicle to illustrate many of the concepts taught.

CSC 117   Java Programming 3.0 UNITS

This course will introduce students to Java Programming, an object-oriented language. Students will develop stand-alone business applications and create applications called from within HTML page (applets) designed to be transported over the Internet and executed by browsers. The syntax, control structures, methods, arrays, strings and characters and graphics will be applied to bring interactive applications to web clients.

CSC 212   Computer Organization and Design 4.0 UNITS

The operation of Flip-Flops as memory elements and counter analysis of Ripple/Synchronous mod counters are covered as building blocks for future design application. The major emphasis on counters is on the design of irregular and truncated counters using D and J-K Flip-Flops and integrated circuit applications of Up/Down counters and dividers. Also includes a coverage of timers, oscillators, and three-state operation. Registers are covered and include counting (Ring and Twisted Ring) shifting (Left/Right) and timing applications. The latter part of the course is devoted to arithmetic applications including 2?s complement adders and subtractors with overflow and underflow detection, and BCD arithmetic and arithmetic/logic I.C. units. Computer instructions, timing and control, executions of instructions, and designs of a basic accumulator-based computer are also covered. The laboratory exercises are organized to support the above theory and to enable students to design, assemble, and test applications constructed with MSI/LSI chips.

CSC 214   Data Structures and Advanced

Programming 3.0 UNITS

Examines data structures and their software implementation. Topics include top-down design; pointer variables and dynamic data structures; linked lists, stacks, queues, recursion, graphs, tree search and backtracking; and sorting/searching techniques.

CSC 226   Database Design and Concepts   3.0 UNITS

Provides both the basis for a solid education in the fundamentals of database technology and an introductory coverage of SQL. Topics include database management systems, relational data base systems, query languages, and application development systems.

CSC 227   Intro to Operating Systems   3.0 UNITS

This course is structured to explain the functions of an operating system. During the course, students will be introduced to what operating systems are, what they do, how they do it, how their performance can be evaluated, and how various operating systems compare with each other. The main purpose of this course is to give students a solid background in the components of the operating system, their function, and goals, and how to interact and interrelate with them.

CSC 231   Info Systems Analysis and Design 3.0 UNITS

The course will cover the basic theoretical and analytical foundations for systems planning, formulating strategic plans, optimizing operations in business, designing information systems, and augmenting business activities on web. Topics include five systems cycles, hardware selection criteria, input/output design, file structures, and design. This is a case study-oriented course.

CSC 240   Intro to Networks and Networking 3.0 UNITS

This course provides students with the basic concepts of network computing, the seven layers of the Open System Interconnection (OSI) Model, Institute for Electrical and Electronics Engineering (IEEE) 802 networking model, and the benefits of various protocols. Students will understand peer-to-peer and server-based networks and their differences. They will become familiar with various networking topologies and how to select the best network topology for an environment. Students will learn how to install and configure NetWare TCP/IP software, how to use common TCP/IP applications, and how to troubleshoot common problems that may occur in a TCP/IP environment. This course also provides the background information needed in preparation for network management and certification.

CSC 118   Python Programming   3.0 UNITS

The course is an introduction to basic principles of programming using Python. Python is an open-source scripting language that allows rapid application development of both large and small software systems. The course introduces students to the fundamentals of data storage, input and output, control structures, functions, sequences and list, dictionary, sets, and file Input/Output. Students learn how to design algorithms, write external and internal documentation and design and write source code in Python.

CSC 216   Python Programming II   3.0 UNITS

This course is intended for students who have completed the Python Programming course (CSC 118) or have the prerequisite knowledge of the course topics discussed in that class. By the end of this course, students should have a solid understanding of program classes, objects, inheritance, exceptions, file handling, database modules, graphical modules, and numerical analysis modules. Students will explore core libraries that allow programs to access operating system services, manipulate data of many types, interact with the user through graphical user interfaces (GUIs), and crunch out data metrics. Labs will be used to reinforce concepts introduced during lectures.

CSC 217   Fundamentals of Data Science   3.0 UNITS

This course will introduce the students to a data science cycle, including manipulating, processing, cleaning, and visualizing data in Python language + Jupyter Notebook environment, for making reasonable decisions and communicating results. Lab hours reinforce concepts introduced and during lecture.

CSC 218   Data Visualization 3.0 UNITS

This course introduces students to the principles and techniques of data visualization. Students learn how to use Power BI to Drive Dashboard, the value of visualization, design principles of visualization, visualization with Data Tables, using shapes to create Infographics, visualizing performance comparison, visualizing parts of a whole, and visualizing changes over time. R and/or Python programming language will be used to teach students how to manage datasets and use plotting systems. Labs will be used to reinforce concepts introduced during lectures.