CIT 010  Computer and Information Technology  3 Units
This course is an examination of information systems in business. Students will focus on information systems, database management systems, networking, e-commerce, ethics and security, computer systems hardware and software components. Application of these concepts and methods will be through hands-on projects developing computer-based solutions to business problems. (C-ID BUS 140)
Lecture Hours: 3  Lab Hours: 1  Repeatable: No  Grading: L
Advisory Level: Read: 3  Write: 3  Math: 2
Transfer Status: CSU/UC  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 020  Program Design and Development  3 Units
This course is an introduction to computer programming and the fundamentals of application development. The focus is on problem solving and program design, including analysis, data structures, programming logic, and fundamental design techniques for event-driven programs. Students will code their designs in a modern programming language and development platform. Debugging and testing will be treated as extensions of the coding task.
Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L
Prerequisite: MATH 013 with C or better.
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU/UC  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 024  Visual Basic Programming  3 Units
Students will learn Visual Basic for .NET Framework in order to rapidly develop Windows Applications with Graphical User Interface. This course covers Visual Basic concepts, tools, and programming methodology.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Knowledge of programming equivalent to that taught in either CIT 020, CIT 042, CIT 044, or COMSC 075
Advisory Level: Read: 3  Write: 3  Math: 2
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 040  Web Design I: Internet Publishing  3 Units
This course teaches basic skills in HTML and design/layout concepts. These techniques will be used to design, develop and maintain professional Web sites.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Knowledge of Internet, equivalent to material taught in CIT 010. Familiarity with file manager; ability to use a simple text editor such as Notepad
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 041J  Javascript/Dynamic HTML  3 Units
This course is intended for students with some knowledge of programming. Students learn to use JavaScript language to dynamically modify nearly all aspects of a web page, including images, links, text, and styles. Students also use JavaScript to validate forms, create data that persists across pages, and handle user input, including mouse and keyboard events. The course also introduces the standard Document Object Model that is used to represent web pages, and is also used by other technologies such as XML. Students study debugging techniques and best practices for writing code.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Knowledge of programming equivalent to that gained in CIT 020 (Program Design and Development). This includes but is not limited to knowledge of variables, control structures, loops, and arrays.
Advisory Level: Read: 3  Write: 3  Math: 2
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 041X  Introduction to XML  3 Units
XML is a notation for generating custom markup languages. Students will create their own XML-based markup, validate it, and integrate different markup languages in a single document. They will use stylesheets to display their XML documents in a browser. Students will also use tools from the XML family of technologies to transform documents and adapt them for multiple purposes.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Basic Computer Literacy, familiarity with HTML concepts (such as those taught in CIT 040)
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 042  Perl Programming  3 Units
This course is intended for students with some knowledge of programming, and covers most of the Perl programming language. The course includes a review of programming basics and continues on to object-oriented programming, networking, and graphics. Students will learn how to create packages and modules, and interact with web pages via CGI.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Basic computer literacy; familiarity with programming concepts (such as those taught in CIT 020)
Advisory Level: Read: 3  Write: 3  Math: 2
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None
CIT 043A  PHP and MySQL  3 Units
This course will introduce students to PHP and MySQL. This course will
cover installation, configuration, and administration of PHP and MySQL.
Students will use PHP for server-side processing of their dynamic web
pages. Students will use SQL to build MySQL databases and tables, to
access, insert, delete, and modify database content, and to administer
user accounts. This course will use PHP to interact with MySQL database
for simple Web-based applications.
Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L
Recommended: Knowledge of computer programming equivalent to that
provided in CIT 020. Knowledge of HTML and CSS equivalent to that
provided in CIT 040
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 044  Java Programming  3 Units
This course is intended for students with some knowledge of
programming who want to develop Java applets and stand-alone
applications. Java interfaces, class inheritance, and exceptions will be
covered. Applications covering I/O and graphics will also be addressed.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Knowledge of programming equivalent to that taught in
either CIT 020, CIT 042, CIT 024, or COMSC 075.
Advisory Level: Read: 3  Write: 3  Math: 2
Transfer Status: CSU/UC  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 050  Introduction to UNIX/Linux  3 Units
This is an introductory course in the UNIX/Linux operating system. It
covers a basic editor, file and directory manipulation, processes, standard
files, access permission, mail, write and talk. The course also addresses
the Bash Shell, including the shell command line, setup, customizing the
shell environment, the alias mechanism, pipes, filters, and I/O redirection.
Additionally, document formatting packages and system administration
are briefly introduced.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Computer Literacy
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 052  UNIX/Linux Shell Programming  3 Units
This is a beginning course in UNIX/Linux Shell Programming using
different shell programs available with the UNIX and Linux operating
systems. The course will include use of bash and C-Shell Programming
theory and concepts. These concepts include interpretation of different
quote characters, shell variables, decision making commands and
looping mechanisms. Students will also learn passing of arguments to
shell scripts, I/O redirection, terminal/file I/O, subshells and using special
UNIX commands. Additionally, this course will include use of the sed and
awk utilities, and an introduction to Korn shell commands.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Basic computer literacy; familiarity with UNIX/Linux
systems such as taught in CIT 050 (prior)
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 054  UNIX/Linux System Administration  3 Units
This course includes a review of basic UNIX/Linux commands and also
covers: using administration tools, mounting and unmounting the file
systems, adding and removing users from the system, and backing
up and restoring the file system. Students learn to utilize UNIX/Linux
tools to administer user accounts and groups and administer devices,
printers and networking services. Also included are planning, setting
up and administering log files, basic network file system setup, use of
UNIX/Linux tools to administer hardware, and troubleshooting file access
problems.
Lecture Hours: 2.5  Lab Hours: 1.5  Repeatable: No  Grading: L
Recommended: Basic computer literacy; knowledge of Linux equivalent
to that taught in CIT 050
Advisory Level: Read: 3  Write: 3  Math: None
Transfer Status: CSU  Degree Applicable: AA/AS
CSU GE: None  IGETC: None  District GE: None

CIT 073  Fundamentals of Data Communications and Networking  3 Units
This course is an introduction to the architecture, structure, functions,
components, and models of the Internet and other computer networks.
The principles and structure of IP addressing and the fundamentals of
Ethernet concepts, media, and operations are introduced to provide a
foundation for the curriculum. Students will be able to build simple LANs,
perform basic configurations for routers and switches, and implement IP
addressing schemes.
Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L
Advisory Level: Read: 2  Write: 2  Math: 2
Transfer Status: None  Degree Applicable: NAA
CSU GE: None  IGETC: None  District GE: None

CIT 074  IP Routing Protocols (CCNA)  3 Units
This course describes the architecture, components, and operations
of routers, and explains the principles of routing and routing protocols.
Students will be given the opportunity to configure a router for basic
and advanced functionality. Students will be able to configure and
troubleshoot routers and resolve common issues with RIPv1, RIPv2,
EIGRP, and OSPF in both IPv4 and IPv6 networks.
Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L
Advisory Level: Read: 2  Write: 2  Math: 2
Transfer Status: None  Degree Applicable: NAA
CSU GE: None  IGETC: None  District GE: None

CIT 075  The Local Area Networks: Ethernet and Wireless Networks
(CCNA)  3 Units
This course introduces the design, configuration, deployment, analysis
and troubleshooting of Local Area Networks. It provides both lecture
and laboratory practices in a variety of areas such as the fundamentals
of Ethernet switches, Virtual Local Area Networks (VLANs), the VLAN
Trunking Protocol (VTP), the Spanning Tree Protocol (STP and RSTP) and
Inter-VLAN Routing. Students learn the details of the configuration of
these functions and operation of the protocols. This course helps prepare
the student for the Cisco CCNA, CCNP and CWNA certification.
Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L
Advisory Level: Read: 2  Write: 2  Math: 2
Transfer Status: None  Degree Applicable: NAA
CSU GE: None  IGETC: None  District GE: None
CIT 076  Introduction to Wide Area Networks, Network Security & IP Addressing Services (CCNA)    3 Units
This course introduces Wide Area Network technologies and protocols, network security, and IP addressing services. It provides both lecture and laboratory practice in a variety of areas including PPP and Frame Relay, Access Control Lists, Virtual Private Networks (VPNs), Dynamic Host Configuration Protocol, DHCP, Network Address Translation (NAT) and Network Troubleshooting. This course helps prepare the student for the Cisco CCNA and CCNP certification.
Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 2 Write: 2 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 077  Introduction to IP Network Security    3 Units
This course provides a next step for students who want to enhance their CCNA-level skill set and help meet the growing demand for network security professionals. The course provides an introduction to the core security concepts and skills needed for the installation, troubleshooting, and monitoring of network devices to maintain the integrity, confidentiality, and availability of data and devices. This course helps prepare students for entry-level security career opportunities and the globally recognized Cisco CCNA Security certification.
Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 2 Write: 2 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 078  Advanced Switching & Campus LAN Design (CCNP)    3 Units
This course provides the knowledge and skills necessary to plan, configure and verify the implementation of complex enterprise switching solutions using Cisco's Campus Enterprise Architecture. Secure integration of VLANs, WLANs, voice and video into campus networks is also provided. The material is presented in a lecture and discussion format supplemented by comprehensive laboratory exercises. This course uses the official Cisco Academy CCNP SWITCH curriculum and is designed to provide preparation for the CCNP SWITCH certification exam.
Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: CIT 075 with C or better
Advisory Level: Read: 2 Write: 2 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 079  Advanced IP Routing Protocols & Services (CCNP)    3 Units
This course is designed to help students advance their knowledge and skills and work independently on complex network solutions. Students will plan, configure and verify the implementation of secure enterprise LAN and WAN routing solutions using a range of routing protocols. Configuration of solutions to support branch offices and mobile workers will be presented. This course uses the official Cisco Academy CCNP ROUTE curriculum and is designed to provide preparation for the CCNP ROUTE certification exam.
Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: CIT 074 with C or better
Advisory Level: Read: 2 Write: 2 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 091  Advanced Network Troubleshooting (CCNP)    3 Units
This course provides the knowledge and teaches the skills necessary to (1) plan and perform regular maintenance on complex enterprise routed and switched networks and (2) use technology-based practices and a systematic ITIL-compliant (Information Technology Infrastructure Library) approach to perform network troubleshooting. This course uses the official Cisco Academy CCNP TSHOOT curriculum and is designed to provide preparation for the CCNP ROUTE certification exam.
Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 2 Write: 2 Math: None
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 092  Enterprise Wireless Local Area Networks    3 Units
This course provides a broad and in-depth knowledge of enterprise wireless LAN administration. It provides a complete foundation of knowledge needed for entering into or advancing in the wireless networking industry. From basic RF theory to 802.11 frame exchange processes are covered. This course delivers hands-on training that will benefit the novice as well as the experienced network professional. It provides preparation for the CWNA Certification examination.
Lecture Hours: 2 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 2 Write: 2 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 101  Storing and Retrieving Big Data    4 Units
This course prepares students to manage large-scale collections of data as objects to be stored, searched, selected, and transformed for use. Students examine both the background theory and practical application of information retrieval, database design and management, data extraction, transformation and loading for data warehouses, and operational applications. In addition, traditional methods of information retrieval and database management as well as new approaches that use massively parallel computation (MapReduce/Hadoop) will be examined. Through readings, discussion, and hands-on experimentation, students will be prepared to discuss, plan, and implement storage, search and retrieval systems for large-scale structured and unstructured information systems using a variety of software tools. They will also be able to evaluate large-scale information storage and retrieval systems in terms of both efficiency and effectiveness in providing timely, accurate, and reliable access to needed information.
Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 2 Write: 2 Math: 3
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None Credit by Exam: Yes
CIT 102  Computer and Network Security  4 Units
The course covers principles of computer systems and network security. We will discuss various attack techniques and how to defend against them. Topics include network attacks and defenses, operating system holes, web security, e-mail, botnet, malware, social engineering attacks, privacy, and digital rights management. Course projects will focus on building reliable code and understanding attacks.

Lecture Hours: 4 Lab Hours: None Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: 3
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None
Credit by Exam: Yes

CIT 103  Introduction to Machine Learning, Data Mining and Statistical Learning  4 Units
This course provides an overview of fundamental techniques in machine learning, data mining and statistical learning. Topics include density estimation (parametric and nonparametric approach), linear and nonlinear regression, decision trees, Naïve Bayes, clustering algorithms, association rules, dimension reduction, anomaly detection, graph mining, time-series analysis and applications in social media analysis, recommendation system, and massive data analytics.

Lecture Hours: 4 Lab Hours: None Repeatable: No Grading: L
Prerequisite: CIT 188 with C or better
Advisory Level: Read: 2 Write: 2 Math: 3
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None
Credit by Exam: Yes

CIT 104  Mining Massive Data Sets  4 Units
The course covers data mining and machine learning algorithms for analyzing very large amounts of data. The emphasis is on Map Reduce as a tool for creating parallel algorithms that can process very large amounts of data.

Lecture Hours: 4 Lab Hours: None Repeatable: No Grading: L
Prerequisite: CIT 103 with C or better
Advisory Level: Read: 2 Write: 2 Math: 6
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None
Credit by Exam: Yes

CIT 105  Data Mining for Cybersecurity  4 Units
The course covers various applications of data mining in computer and network security. Topics include: Overview of the state of information security, malware detection, network and host intrusion detection, web/email/ and social network security, and authentication and authorization anomaly detection.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 2 Write: 2 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 103A  Introduction to Programming Concepts and Methodologies in C++  4 Units
This course is an introduction to the systematic approach to design, construction, and management of computer programs; emphasizing program documentation, testing, debugging, maintenance and reuse. C++ features included are data types, control structures, I/O, functions, classes & objects, pointers, inheritance and polymorphism.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: 3
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 130B  Advanced C++ Programming  4 Units
This course is a systematic treatment of intermediate concepts in information technology through the study of C++. Topics included are derived classes, class templates, function templates, virtual functions, operator overloading, an introduction to the Standard Template Library, multiple inheritance, pointers, dynamic memory allocation, file I/O, polymorphism, method chaining, functional programming, linked-lists, FIFOs, LIFOs, events in GUIs and guarded code.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: CIT 130A with C or better
Advisory Level: Read: 3 Write: 3 Math: 3
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 132  Advanced Java Programming  4 Units
This course is a systematic treatment of intermediate concepts in Java programming. Topics include Java interfaces, class extension, generics, the Java collections framework, multi-dimensional arrays, file I/O, inheritance, polymorphism, method chaining, functional programming, linked-lists, FIFOs, LIFOs, event-driven programming and guarded code.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: CIT 044 with C or better
Advisory Level: Read: 3 Write: 3 Math: 2
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None

CIT 134A  Programming in Python  4 Units
Systematic introduction to fundamental concepts of programming through the study of the Python programming language. Topics include control structures, functions, classes, string processing, lists, tuples, dictionaries, working with files, elementary graphics, recursion, data abstraction, problem solving strategies, code style, documentation, debugging techniques and testing.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: None Degree Applicable: NAA
CSU GE: None IGETC: None District GE: None
CIT 134B  Advanced Python Programming  4 Units  
This course builds on the student's prior knowledge of the Python programming language by offering a more in-depth and advanced approach to building effective Python applications. Specific topics include user interfaces, networked applications, databases, multithreading and regular expressions. The course reinforces object-oriented design, thorough documentation, testing and conventional programming style.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L  
Prerequisite: CIT 134A with C or better  
Advisory Level: Read: 3  Write: 3  Math: 2  
Transfer Status: None  Degree Applicable: NAA  
CSU GE: None  IGETC: None  District GE: None

CIT 135A  Mobile Web App Development  4 Units  
Students will employ HTML5, CSS and JavaScript to develop mobile web apps for smart phones and tablet/pad devices. Topics include CSS media queries, mobile user interfaces, platform-independent development, and best practices, as well as geolocation, maps, audio, video, drawing, animation and offline apps. This course provides an introduction to open-source mobile development frameworks, emulators, conversion to native apps, performance and testing. The course is intended for students with previous programming experience.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L  
Prerequisite: CIT 040 with C or better  
Advisory Level: Read: 3  Write: 3  Math: 2  
Transfer Status: None  Degree Applicable: NAA  
CSU GE: None  IGETC: None  District GE: None

CIT 135B  Android Programming  4 Units  
This course is an introduction to the architecture, API and techniques used to create robust, high-performance applications for Android mobile devices. It is an overview of the most common tools and techniques for writing Android applications. Other topics include user interfaces, local storage, maps, multimedia, content providers, sensors, and user events. Storage strategies for persistent information are introduced, including the use of SQLite database features. The course is intended for students with previous Java programming experience.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L  
Recommended: Previous Java programming experience  
Advisory Level: Read: 2  Write: 2  Math: None  
Transfer Status: None  Degree Applicable: NAA  
CSU GE: None  IGETC: None  District GE: None

CIT 135C  iOS/Swift Programming  4 Units  
This course is an introduction to the architecture, API and techniques used to create robust, high-performance apps for iOS mobile devices (iPhone, iPad and wearable) with the Swift programming language. It is an overview of the most common tools and techniques for designing and creating iOS mobile apps. Other topics include object-oriented programming, user interface design, Storyboards, MVC design pattern, UIKit, multimedia, debugging, sensors, and user events. Storage strategies for persistent information are introduced, including the Core Data framework and the use of SQLite database features. The course is intended for students with previous programming experience.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L  
Recommended: Previous programming experience  
Advisory Level: Read: 2  Write: 2  Math: 2  
Transfer Status: None  Degree Applicable: NAA  
CSU GE: None  IGETC: None  District GE: None

CIT 138  Work Experience  1-8 Units  
Occupational Work Experience is designed for students who work or volunteer in a field related to their career major. Students are required to provide evidence that they are enrolled in a career program (e.g., education plan or coursework in a career/occupational subject area). Students can earn one unit of credit for each 60 hours of unpaid volunteer time or 75 hours of paid work during the semester. Students can repeat Career/Occupational Work Experience, combined with General Work Experience, or alone, up to a maximum of 16 units. Internship/job placement is not guaranteed.

Lecture Hours: None  Lab Hours: 2.07  Repeatable: Yes  Grading: O  
Corequisite: Be employed or a volunteer at an approved work-site for the minimum number of hours per unit as stipulated for paid and unpaid status.

Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L  
Advisory Level: Read: 3  Write: 3  Math: 3  
Transfer Status: CSU  Degree Applicable: AA/AS  
CSU GE: None  IGETC: None  District GE: None

CIT 155  Systems and Network Administration  3 Units  
This course will provide a student with the knowledge and skills required to build, maintain, troubleshoot and support server hardware and software technologies. The student will be able to identify environmental issues; understand and comply with disaster recovery and physical/software security procedures; become proficient with industry terminology and concepts; understand server roles/specializations and interaction within the overall computing environment.

Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L  
Advisory Level: Read: 3  Write: 3  Math: 3  
Transfer Status: CSU  Degree Applicable: AA/AS  
CSU GE: None  IGETC: None  District GE: None

CIT 160  Introduction to Information Systems Security  4 Units  
The course gives a broad overview of essential concepts and methods for providing and evaluating security in information processing systems (such as operating systems and applications, networks, and protocols). The course will cover software security, practical cryptography, and basics of Network security.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L  
Advisory Level: Read: 2  Write: 2  Math: 2  
Transfer Status: None  Degree Applicable: NAA  
CSU GE: None  IGETC: None  District GE: None
CIT 164  Introduction to Cybersecurity: Ethical Hacking  3 Units
This course introduces the network security specialist to the various methodologies for attacking a network. Students will be introduced to the concepts, principles, and techniques, supplemented by hands-on exercises, for attacking and disabling a network within the context of properly securing a network. The course will emphasize network attack methodologies with the emphasis on student use of network attack techniques and tools and appropriate defenses and countermeasures. Students will experience a hands-on practical approach to penetration testing measures and ethical hacking.

Lecture Hours: 2  Lab Hours: 3  Repeatable: No  Grading: L
Advisory Level: Read: 2  Write: 2  Math: 3
Transfer Status: None  Degree Applicable: NAA
CSU GE: None  IGETC: None  District GE: None

CIT 165  Digital Forensics Fundamentals  4 Units
This course is an introduction to computer cyber crime and hacking investigation processes. Topics include computer forensics tools, hacking investigation tools, data recovery, information gathering techniques, computer data preservation techniques, and computer cyber crime investigation techniques. System administrators, security professionals, IT staff, and law enforcement personnel, would benefit from taking this course. Also, this course can help prepare students to pass computer forensics certification examinations, such as the EC-Council Computer Hacking Forensic Investigator (CHFI) or the Certified Forensic Computer Examiner (CFCE) credential.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L
Advisory Level: Read: 2  Write: 2  Math: 2
Transfer Status: None  Degree Applicable: NAA
CSU GE: None  IGETC: None  District GE: None

CIT 188  R Programming for Data Scientists  4 Units
Introduction to the field of Big Data, its concepts and technologies, as well as R programming. Students will explore the roles of a data scientist in terms of network architecture, data analytics and predictive analysis. Differentiation among raw data, clean data, and tidy data; and tools to convert data to/from these formats will be covered. Effective management of large data in single and distributed computing environments, including managing data redundancy and failures, will be covered. Testing, correlation, clustering, and data visualization will be introduced.

Lecture Hours: 3  Lab Hours: 3  Repeatable: No  Grading: L
Advisory Level: Read: 2  Write: 2  Math: 3
Transfer Status: None  Degree Applicable: NAA
CSU GE: None  IGETC: None  District GE: None