CIST-COMPUTER INFORMATION SYSTEMS TECHNOLOGY

CIST 1110. Introduction to Operating Systems
1-3 Credits
This course offers a comprehensive introduction to operating systems, covering topics such as process and memory management, file systems, I/O systems, security, mobile computing, and networking. With a focus on Windows-based systems, students will learn the implementation, configuration, installation, and maintenance of operating systems, gaining a deeper understanding of current systems. May be repeated up to 6 credits.

Learning Outcomes

1. Identify and explain computer hardware including the components of a computer system and its functions.
2. Install, configure, and troubleshoot hardware components such as CPUs, RAM, motherboards, hard drives, and expansion cards.
3. Identify and explain the different types of computer operating systems, including Windows, macOS, and Linux, and their respective features and functions.
4. Install, configure, and troubleshoot operating systems and software applications, and use various system tools and utilities to diagnose and resolve common hardware and software issues.
5. Understand and implement basic networking concepts, including IP addressing, subnetting, and network protocols.
6. Implement security concepts, including user authentication, access controls, firewalls, encryption and resolve common security threats and vulnerabilities.

CIST 1111. Introductions (Foundations) of Information Systems
1 Credit (1)
Information systems are an integral part of all business activities and careers. This course is designed to introduce students to contemporary information systems and demonstrate how these systems are used throughout global organizations. The focus of this course will be on the key components of information systems-people, software, hardware, data, and communication technologies, and how these components can be integrated and managed to create competitive advantage. Through the knowledge of how IS provides a competitive advantage students will gain an understanding of how information is used in preorganization's and how IT enables improvement in quality, speed, and agility. This course also provides an introduction to systems and development concepts, technology acquisition, and various types of application software that have become prevalent or are emerging in modern organizations and society. May be repeated up to 1 credit.

Learning Outcomes

1. Demonstrate an understanding of the history of computers, current computer technology and terminology.
2. Understand computing disciplines: computer science and information systems.
3. Understand networking and the Internet.
4. Demonstrate knowledge of the Systems.
5. Development of Life Cycle process how technology is issued in business.
6. Understanding of INFOSEC processes and methodology and computer, network security and some of the societal implications of computers and related technology.

CIST 1117. Introduction to the Internet
3 Credits (3)
This course introduces foundational concepts and skills for navigating the Internet and using web-based tools effectively. Students will learn browser basics, including navigating web pages and managing settings, as well as email communication, web searching, and evaluating online content. Topics include accessing and citing information resources, exploring user generated content such as podcasts and social networks, understanding Internet security practices, and explaining wireless networking technologies. The course aligns with Certified Internet Web (CIW) and Internet & Computing Core Certification (IC3) standards, providing essential knowledge for beginners with no prior experience.

Learning Outcomes

1. Navigate web pages, use bookmarks or favorites, manage cookies, and employ private browsing within a web browser.
2. Create, organize, and manage email communications effectively, utilizing common message features and email application functions.
3. Conduct web searches using search engines, evaluate the credibility of websites, and apply search engine optimization techniques.
4. Locate, understand, and cite current and specific Internet content, including text-based and multimedia resources.
5. Identify, explain, and use user-generated content, including pull technologies like podcasts and feeds, and push technologies like messaging and social networks.
6. Identify and explain physical and logical security processes, including firewalls, anti-malware applications, and enhanced security practices.
7. Describe the evolution of wireless technologies and differentiate between various types of wireless networks.

CIST 1121. A+ Hardware and Operating Systems
1-3 Credits
Introduction to PC hardware, peripherals, and operating systems. Includes problem diagnosis, troubleshooting processes, Windows utilization, and system optimization. May be used to prepare for industry certification exams. May be repeated up to 3 credits.

Learning Outcomes

1. Install, configure, and maintain computer equipment, mobile devices, and software for end users.
2. Service components based on customer requirements.
3. Understand networking basics and apply basic cybersecurity methods to mitigate threats.
4. Properly and safely diagnose, resolve, and document common hardware and software issues.
5. Apply troubleshooting skills and provide customer support using appropriate communication skills.
6. Describe the basics of scripting, cloud technologies, virtualization, and multi-OS deployments in corporate environments.

CIST 1220. Programming Fundamentals
3 Credits (3)
This is an entry level programming course designed to teach students the basic concepts of computer programming. By the end of the course, students will have the skills and confidence needed to succeed in future programming language courses.

Learning Outcomes

1. Explain what computer programming.
2. Create pseudo code from a problem definition.
3. Create executable code from pseudo code.
4. Create basic calculator programs that ask users for input, perform some calculations and display results.
5. Create programs that use loops and conditionals.
6. Utilize data structures that store collections with multiple values.
7. Create programs that use functions.

CIST 1261. JavaScript Web Programming
1-3 Credits

Use JavaScript libraries and frameworks including jQuery to implement web widgets and validate form data. Create interactive web pages with JavaScript manipulation of HTML and CSS. Use AJAX and other technologies for browser-to server interactions. May be repeated up to 9 credits.

Learning Outcomes

1. Describe JavaScript, browser, and HTML DOM objects.
2. Implement control structures, expressions, and functions.
3. Demonstrate declaring variables, calculating values and displaying the results.
4. Analyze and debug an application.
5. Utilize JavaScript Frameworks and Libraries.

CIST 1409. IT Essentials I: PC Hardware, Software, and Practical Applications
1-3 Credits (1-3)

This course provides student with the knowledge required to understand the fundamentals of computer technology, networking, and security, and the skills required to identify hardware, peripheral, networking, and security components. May be repeated up to 3 credits.

Learning Outcomes

1. Analyze and evaluate basic computer hardware/software problems.
2. Understand customer service and helpdesk.
3. Categorize network problems and solutions following the to the OSI model.
4. Demonstrate use of internet resources for hardware/software problem identification, solutions, analysis, and upgrades.
5. Demonstrate ability to build, repair, configure, optimize, upgrade and install hardware.
6. Demonstrate ability to troubleshoot, upgrade and install software.
7. Understand and apply security policies, practices, and standards in a PC environment.

CIST 1411. Introduction to Networks
3-4 Credits (3-4)

An introduction to the TCP/IP and OSI networking models and concepts for implementing those models in Wide Area and Local Area Networks. TCP/IP network fundamentals will be presented. Topics include network device configuration, IPv4 and IPv6 network addressing, basic security administration and network troubleshooting principles. This course uses the Cisco Networking Academy curriculum and is preparation for current industry certifications.

Learning Outcomes

1. Configure routers, switches, and end devices to establish end-to-end connectivity and provide access to local and remote network resources.
2. Explain how physical and data link layer protocols support the operation of Ethernet in a switched network.
3. Create and implement IPv4 and IPv6 addressing schemes.
4. Explain how the upper layers of the OSI and TCP/IP models support network applications.
5. Use security best practices to configure and protect a small network.
6. Troubleshoot connectivity issues in a small network.

CIST 1412. Network Device Configuration
3-4 Credits (3-4)

This course covers the architecture, components, and operations of routers and switches in a small network and introduces wireless local area networks (WLAN) and security concepts. Students learn how to configure routers and switches, perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, configure static and dynamic addressing, and configure and secure a basic WLAN. This course uses the Cisco Networking Academy curriculum and is preparation for current industry certifications. May be repeated up to 8 credits.

Prerequisite/Corequisite: CIST 1411.

Learning Outcomes

1. Configure and troubleshoot VLANs and Inter-VLAN routing.
2. Configure and troubleshoot redundancy issues on switched networks using Spanning Tree Protocol and EtherChannel.
3. Explain how to support available and reliable networks [and configure] first-hop redundancy protocols.
4. Configure IPv4 and IPv6 static routing and dynamic addressing on network devices.
5. Configure WLANs using wireless routers and controllers.
6. Configure and apply security best practices to mitigate Layer 2 and Layer 3 network attacks.

CIST 1413. Network Administration Concepts
4 Credits (2+4P)

Students will learn to design, configure, and troubleshoot various types of networks, implement security measures to protect network assets, analyze network protocols and services, diagnose network issues, and monitor network performance. Students will engage in hands-on/virtual lab exercises, performance-based assessments, and written assessments to apply their knowledge and skills. Upon completion of this course, students will be equipped for a successful career in network administration. The course aligns with the domains and objectives of the CompTIA Network+ and TestOut Network Pro certification exams.

Prerequisite: CIST 1411.

Learning Outcomes

1. Implement security measures to protect network assets, including the use of firewalls, access controls, and encryption methods.
2. Apply network protocols and services such as TCP/IP, DNS, DHCP, and SMTP.
3. Execute network troubleshooting and optimization techniques by diagnosing and resolving network performance and optimizing issues, including problems, network operations for LAN, WAN, and wireless networks.
4. Apply network monitoring and maintenance procedures by monitoring network performance, implementing maintenance, and understanding the importance of backup and disaster recovery planning.
5. Employ virtualization and cloud technologies such as virtual networks, virtual servers, and cloud storage.

CIST 1605. Internet of Things
3 Credits (3)
Examines the evolution of the Internet and how the interconnection of people, processes, data, and things is transforming every industry. This hands-on IoT course addresses the main stages of digitization including identifying and communicating a business or social problem and designing and connecting IoT devices to interact with the physical world. Students will develop high-demand skills such as creative problem-solving, critical thinking, collaboration and communication in hands-on lab and hackathon experiences. May be repeated up to 6 credits.
Prerequisite: CIST 1605.
Learning Outcomes
1. Analyze the things and connections that make up the IoT.
2. Build sensor/actuator systems using the Arduino microcontroller.
3. Create programs in Python that provide IoT functionality to the Raspberry Pi single-board computer.
4. Create an end-to-end IoT system.
5. Design an IoT system that can solve a problem of interest to the student.

CIST 1611. Azure Fundamentals
0.5-3 Credits
This course will provide foundational level knowledge of cloud services and how those services are provided with Microsoft Azure including workloads, security, privacy, and support. Restricted to Community Colleges campuses only. May be repeated up to 6 credits.
Prerequisite/Corequisite: CIST 1121.
Learning Outcomes
1. Describe Cloud Concepts.
2. Explain Core Azure Services.
3. Compare and contrast core solutions and management tools on Azure.
4. Identify general security and network security features.
5. Describe identity, governance, privacy, and compliance features.
6. Compare Azure cost management and Service Level Agreements.

CIST 1680. Linux Essentials
3 Credits (3)
Introduces the Linux operating system with emphasis on command line application. Students will learn management of the Linux file system, processes, storage devices, users and groups. Learning objectives also include configuration of boot activity, network, and printers.
Learning Outcomes
1. Install and maintain Linux operating systems.
2. Locate Help resources in the Linux operating systems.
3. Use the package management utility to administer the Linux operating systems.
4. Explain the fundamental properties of the shell.
5. Administrate Linux operating systems using Command Line Interface (CLI) and Graphic User Interface (GUI).

CIST 1996. Topics in Computer Information Systems Technology
1-3 Credits (1-3)
Topics to be announced in the Schedule of Classes. May be repeated up to 6 credits.
Learning Outcomes
1. Varies.

CIST 2210. Introduction to SQL (Structured Query Language)
1-3 Credits (1-3)
Introduction to Structured Query Language (SQL) within the context of an Oracle database. Students will create basic and complex queries (joining, sub-queries, aggregate functions, grouping data) and learn to manipulate data using insert, update and delete statements. Students will create tables, views, and constraints and benefit by learning the industry standards while utilizing the latest database software and online training materials. This course also prepares students to pass the 1st Oracle Associate Certification Test. May be repeated up to 6 credits. Restricted to Community Colleges campuses only.
Prerequisite: CIST 2311.
Learning Outcomes
1. Create basic and advanced queries used to retrieve data from multiple tables utilizing proprietary and ANSI standard JOIN commands.
2. Construct queries with aggregate grouping functions.
3. Compose DML queries that manipulate, sort, and restrict data.
4. Build DDL queries that can create or alter tables and utilize transaction control for saving objects and data.
5. Construct advanced Queries: rollup, cube, set operators, merge, subqueries, and correlated subqueries.
6. Build, maintain, and execute views.

CIST 2211. Azure Administrator
1-3 Credits
An introduction to the skills and knowledge necessary for implementing, managing, and monitoring identity, governance, storage, compute, and virtual networks in a cloud environment, plus provision, size, monitor, and adjust resources, when needed. May be preparation for an industry certification exam. May be repeated up to 6 credits.
Prerequisite: CIST 1413.
Learning Outcomes
1. Explain Azure identities and governance.
2. Implement and manage storage.
3. Deploy and manage Azure compute resources.
4. Configure and manage virtual networking.
5. Monitor and back up Azure resources.

CIST 2237. Android Application Development with Java and Kotlin
1-3 Credits (1-3)
Focuses on advanced Java technologies. Course covers design, implementation and deployment of advanced programs based on Java which may include web programming, small device applications (Android, phones, pads, etc.), and related technologies including web services, advanced graphics, databases, multimedia, and other relevant technologies. May be repeated up to 6 credits.
Learning Outcomes
1. Install and use an Android IDE for developing android apps.
2. Use both Java and Kotlin Programming languages to code the assignments.
3. Integrate Android Material Design features.
4. Implement common Android features, for example: Shared Preferences, splash screens, fragments, multi-threading and SQLite Database.
5. Implement current programming techniques as they evolve, such as Jetpack's Navigation, Room Database API, etc.
6. Implement JUnit Testing.
7. Describe the steps in publishing an app.

CIST 2251. Python Programming II
1-3 Credits (1-3)

In this course, students will take Python machine learning ideas and create serverless web applications accessible by anyone with an Internet connection. Students will work through a series of common Python data science problems in an increasing order of complexity. Students will learn to create a web application around numerical or categorical predictions, Machine Learning tools like TensorFlow, understand the analysis of text, create powerful and interactive presentations, serve restricted access to data, and leverage web plugins to accept credit card payments and donations. May be repeated up to 6 credits.

Learning Outcomes

1. Demonstrate how to use Serverless Technologies.
2. Demonstrate how to use client-side intelligence using regression coefficients.
3. Demonstrate how to use Real-Time Intelligence with Logistic Regression.
4. Demonstrate how to use Pretrained Intelligence with Gradient Boosting Machine.
5. Demonstrate how to Support Both Web and Mobile Browsers.
6. Demonstrate how to Display Predictions with Google Maps.
7. Demonstrate how to Forecast with Naive Bayes and OpenWeather.
8. Demonstrate how to use Interactive Drawing Canvas and Digit Predictions Using TensorFlow.
9. Demonstrate how to display dynamic charts. 1
10. Demonstrate how to use Recommending with Singular Value Decomposition.

CIST 2275. C++ Programming II
1-3 Credits (1-3)

Continues coverage of C++ programming. Covers structures, enumerated data types, C++ function enhancements, classes and objects, inheritance, polymorphism and virtual functions. This advanced course provides a solid foundation in object oriented programming methods. May be repeated up to 6 credits.

Learning Outcomes

1. Construct and use a C++ Class that models a “real-world item or task” The class will include private members and public methods, including constructors, accessors and mutators, the class will demonstrate good OOP C++ programming practice.
2. Construct a C++ program that has (at least) two programmer-written classes that demonstrate the “has a” relationship of composition.
3. Construct a program that contains an array of programmer-written objects.
4. Construct a program with at least one class that overloads basic operators to perform conditional comparisons or object data updates.
5. Demonstrate the ability to pass objects between functions using pass by address using pointer and references.
6. Construct a C++ program that incorporates the principle of inheritance to derive new, customized classes where parent methods are called internally and other methods are overridden, access the derived classes polymorphically.

CIST 2311. Database Concepts and Principles
1-3 Credits (1-3)

A study of how relational databases are designed for maximum data manipulation is the first step in the field of data management and analytics. Topics covered include core database concepts, how to create database objects and manipulate data. May be preparation for an industry certification exam. May be repeated up to 6 credits.

Learning Outcomes

1. Discuss relational database concepts.
2. Select, insert, update and delete data in databases.
3. Explain data manipulation language (DML) and data definition language (DDL).
4. Choose data types, build tables, and create views.
5. Build primary, foreign, and composite keys.
6. Create stored procedures and functions and construct indexes.
7. Examine database security concepts.
8. Design database backups and restoration processes.

CIST 2321. Visual Analytics
3 Credits

This course explores the principles and practices of Business Intelligence (BI), which is a critical component of modern decision-making in organizations. Students will learn how to collect, analyze, and visualize data to support strategic and tactical business decisions.

Learning Outcomes

1. Explain the fundamentals of Business Intelligence.
2. Describe various BI tools and technologies.
3. Perform data extraction, transformation, and loading (ETL).
4. Create interactive dashboards and reports.
5. Analyze real-world BI case studies and applications.
6. Describe the ethical and legal considerations in BI.

CIST 2331. Predictive Analytics
3 Credits (3)

This course delves into the field of predictive analytics, equipping students with the skills to use historical data to make future predictions. Students will learn various predictive modeling techniques, data preprocessing, model evaluation, and the practical applications of predictive analytics in real-world scenarios. May be repeated up to 6 credits.

Learning Outcomes

1. Explain the fundamentals of predictive analytics.
2. Describe techniques for data preparation and feature engineering.
3. Explain how to build and evaluate predictive models.
4. Explore predictive analytics applications across industries.
5. Apply predictive modeling skills to real-world datasets.
6. Identify the ethical considerations in predictive analytics.

CIST 2411. Enterprise Networking
3-4 Credits (3-4)

This course describes the architecture and considerations related to designing, securing, operating, and troubleshooting enterprise networks. Topics include wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access and software-defined networking, virtualization, and automation concepts that support the digitalization of networks. Students configure and troubleshoot enterprise networks and learn to identify and protect against cybersecurity threats. Network management tools and key concepts of software-defined networking, including controller-based architectures and how application programming interfaces (APIs) enable network automation, are introduced. May be repeated up to 8 credits.

Prerequisite/Corequisite: CIST 1412.

Learning Outcomes

1. Configure single-area OSPFv2 in both point-to-point and multiaccess networks.

2. Explain how to mitigate threats and enhance network security using security best practices.
3. Implement access control lists (ACLs) to filter traffic and secure administrative access.
4. Explain techniques to provide address scalability and configure NAT services.
5. Explain QoS and how to optimize, monitor, and troubleshoot scalable network architectures.
6. Explain and implement network management protocols.
7. Explain how technologies such as virtualization, software defined networking, and automation affect evolving networks.

CIST 2611. Windows Hybrid Server Administration
3 Credits (3)
This course provides students with the skills to perform the following technical tasks: deploy and manage Active Directory Domain Services (AD DS) in on-premises and cloud environments; and manage Windows Servers and workloads in a hybrid environment. Students will also learn how to manage virtual machines and containers; implement and manage an on premises and hybrid networking infrastructure; and manage storage and file services.
Prerequisite/Corequisite: CIST 1116 or CIST 1611.
Learning Outcomes
1. Deploy and manage Active Directory Domain Services (AD DS) in on-premises and cloud environments.
2. Manage Windows Servers and workloads in a hybrid environment.
3. Manage virtual machines and containers.
4. Implement and manage an on-premises and hybrid networking infrastructure.
5. Manage storage and file services.

CIST 2620. Windows Server Administration
3 Credits (2+2P)
This course addresses the implementation and support needs of IT professionals that are planning to deploy and support Window Servers(s). It provides in-depth, hands-on training for IT professionals responsible for the planning, implementation, management, and support of Windows Server operating systems(s). Assists in preparation for the Microsoft certification.
Prerequisite/Corequisite: E T 120.
Learning Outcomes
1. Be able to manage back-ups, disks and volumes and storage pools.
2. Be able to manage basic networking, DNS, and DHCP services.
3. Be able to configure, deploy, and manage servers; manage files and folders, quotas and printing.
4. Be able to create and manage virtual hard disks and volumes, machines, switches, and storage.
5. Be able to create domain controllers and manage users, devices and organizational units using AD DS.
6. Be able manage domain policies, rights, and permissions.

CIST 2636. CLOUD Computing
1-3 Credits (1-3)
Investigation of technology skills related to maintaining and optimizing cloud infrastructure services. These skills include virtualization, configuration, maintenance, management, securing and troubleshooting of cloud infrastructure services. May be repeated up to 6 credits.
Prerequisite/Corequisite: CIST 1680.
Learning Outcomes
1. Analyze the different cloud models to design the best solution to support business requirements.
2. Manage and maintain servers, including OS configurations, access control and virtualization.
3. Analyze system requirements to successfully execute workload migrations to the cloud.
4. Maintain and optimize cloud environments, including proper automation and orchestration procedures, backup and restore operations, and disaster recovery tasks.
5. Troubleshoot capacity, automation, connectivity and security issues related to cloud implementations.

CIST 2811. Foundations of Security
3 Credits (3)
This course is a study of encryption technologies, system and network security, firewall implementation, intrusion detection and prevention. It also covers operating system, user account, and file resource security, assessing risk, auditing.
Prerequisite/Corequisite: CIST 1413. Restricted to Las Cruces campus only.
Learning Outcomes
1. Assess the security posture of an enterprise environment and recommend and implement appropriate security solutions.
2. Monitor and secure hybrid environments, including cloud, mobile, and Internet of Things (IoT).
3. Discuss applicable regulations and policies, including principles of governance, risk, and compliance.
4. Identify, analyze, and respond to security events and incidents.

CIST 2812. Fundamentals of Cybersecurity
3 Credits (3)
An introduction that explores various methods for attacking and defending a network, security concepts and attack methodologies. Topics may include Internet architecture, routing, addressing, topology, fragmentation and protocol analysis, and the use of various utilities to explore TCP/IP. May be preparation for an industry certification exam.
Prerequisite/Corequisite: MATH 1215. Restricted to Las Cruces campus only.
Learning Outcomes
1. Apply environmental reconnaissance techniques using appropriate tools and processes.
2. Implement or recommend the appropriate response and countermeasure.
3. Analyze the output resulting from a vulnerability scan and compare and contrast common vulnerabilities found in targets within an organization.
4. Explain the importance of communication during the incident response process.
5. Analyze common symptoms to select the best course of action to support incident response.
6. Explain the relationship between frameworks, common policies, controls, and procedures.
7. Review security architecture and make recommendations to implement compensating controls.
8. Compare and contrast the general purpose and reasons for using various cybersecurity tools and technologies.

CIST 2860. Digital Forensics and Incident Response
3 Credits (3)

This course offers students a structured approach to the field of computer forensics and the analysis of digital evidence. Through a combination of theoretical knowledge and hands-on practical exercises, students will develop the skills necessary to conduct effective computer forensic investigations. The course will cover various forensic investigation techniques and utilize standard forensic tools to successfully gather, preserve and analyze digital evidence. This class prepares students for a position as a cybersecurity incident handler.
Prerequisite/Corequisite: E T 120.

Learning Outcomes

1. Understand core concepts in digital forensics, incident response and chain of custody.
2. Execute data analysis for forensic or incident purposes.
3. Explain the relationship between digital forensics and incident response.
4. Conduct and report on system investigations across different platforms.
5. Apply cryptographic hash functions to forensic artifacts.
6. Employ steganography for data hiding and recovery in media files.

CIST 2881. Cybersecurity Fundamentals
3 Credits (3)

This course covers a range of topic including network and computer security, general security concepts, communication security, infrastructure security, operational and organizational security, encryption technologies, system and network security types of attacks, risk management, intrusion detection and prevention, assessing risk, auditing, and security control procedures. The course is designed to prepare students for an industry certification exam.
Prerequisite/Corequisite: E T 120.

Learning Outcomes

1. Identify and mitigate various types of security threats, such as malware, social engineering, and network attacks.
2. Utilize security technologies, including firewalls, intrusion detection and prevention systems, and VPNs, to secure a network.
3. Implement security principles and practices in the design and implementation of secure networks and systems.
4. Manage user authentication, authorization, and access control to secure sensitive data.
5. Respond to security incidents and have a disaster recovery plan in place.

CIST 2887. Ethical Hacking
3 Credits (3)

This course introduces the essential concepts and practices of ethical hacking. Students will learn to use various ethical hacking tools and techniques to assess the security posture of a network and identify potential vulnerabilities that could be exploited by malicious actors. The course is based on the EC Council Ethical Hacking ECH Version 12 and TestOut Ethical Hacker Pro certification exam domains/objectives. By the end of the course, students will have a solid understanding of network security threats and vulnerabilities, and the ability to perform a comprehensive security assessment of a network. The course is suitable for students interested in pursuing a career in cybersecurity or who want to improve their understanding of network security and ethical hacking.
Prerequisite: CIST 1411 and CIST 2881.
Prerequisite/Corequisite: E T 283.

Learning Outcomes

1. Apply vulnerability scanning tools to identify network security weaknesses.
2. Use penetration testing tools to assess network security and identify potential vulnerabilities.
3. Analyze the impact of various network security threats and recommend appropriate countermeasures.
4. Develop and implement appropriate security controls to protect a network from security threats.
5. Create a comprehensive security assessment report that presents findings and recommendations in a clear and concise manner.

CIST 2996. Topics in Computer Information Systems Technology
1-4 Credits (1-4)

Specific subject to be determined based upon student need. May be repeated up to 8 credits.

Learning Outcomes

1. Varies.

CIST 2998. Internship in Computer Information Systems Technology
1-3 Credits (1-3)

Work experience, directly related to a student's field of study, that provides an opportunity to explore career options while experiencing hands-on application, knowledge, and theory learned in the classroom. May be repeated up to 6 credits.
Prerequisite: (CIST 1409 or CIST 1121) AND (CIST 1680), AND (CIST 1411).

Learning Outcomes

1. Varies.

CIST 2999. Capstone in Computer Information Systems Technology
3-4 Credits (3-4)

Experiential hands-on learning applying skills and knowledge gained in computer and technology-related courses supporting contemporary workforce performance. May be repeated up to 8 credits.

Learning Outcomes

1. Varies.