COMPUTER INFORMATION TECHNOLOGY (CIT)

CIT 105 (3 credit hours)
Introduction to Computers
Provides an introduction to the computer and the convergence of technology as used in today's global environment. Introduces topics including computer hardware and software, file management, the Internet, e-mail, the social web, green computing, security and computer ethics. Presents basic use of application, programming, systems, and utility software. Basic keyboarding skills are strongly recommended. Lecture: 3 credits (45 contact hours).
Pre-requisite: Reading Placement Level of "Reading Corequisite or Reading Course" as outlined in the KCTCS Assessment and Placement Policy or above or completion of 12 credit hours of college-level courses with a 2.0 or better GPA.
Attributes: Digital Literacy, Course Also Offered in Modules
Components: LEC: Lecture

CIT 111 (4 credit hours)
Computer Hardware and Software
Presents a practical view of computer hardware and client operating systems. Covers computer hardware components; troubleshooting, repair, and maintenance; operating system interfaces and management tools; networking components; computer security; and operational procedures. Lecture: 4 credits (60 contact hours).
Pre-requisite: (CIT 105 and Quantitative Reasoning College-Readiness) orConsent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 120 (3 credit hours)
Computational Thinking
Promotes understanding of computer programming and logic by teaching students to think like a computer. Covers skills needed to develop and design language-independent solutions to solve computer-related problems. Covers development and design basics including use of variables, control and data structures, and principles of command-line and object-oriented languages. Lecture: 3 credits (45 contact hours).
Pre-requisite: Quantitative Reasoning College-Readiness or Consent of Instructor.
Pre- or co-requisite: CIT 105.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 124 (3 credit hours)
Introduction to Game Development
Presents an overview of the game development process including game development history, platforms, goals, genres, players, story and character development, gameplay, levels, interfaces, audio, development processes, development team roles, marketing, and maintenance. Offers students the opportunity to play and analyze games facilitating discussion on game design and function. Completion of partial game design will occur. Lecture: 3 credits (45 contact hours)
Co-requisite: CIT 221 or IMD 221.
Pre- or co-requisite: CIT 105 or IMD 100 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 125 (3 credit hours)
Intro to Digital Maps
Provides basic theories and concepts of geographical information systems including basic GIS capabilities, data analysis, data types, coordinate systems, cartography and mapping concepts. Introduces GIS software using industry-specific applications and technology to provide a conceptual base to build expertise in GIS. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 105 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 130 (3 credit hours)
Productivity Software
Utilizes current word processing, spreadsheet, database, and presentation application software to solve common business problems. Covers basic features of each software application. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 105 or OST 105 or IMD 100 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 140 (3 credit hours)
JavaScript I
Provides students with an overview of the JavaScript scripting language. Includes coding, testing, and debugging JavaScript programs; using variables, operators, and data types; creating dynamic web pages using JavaScript; controlling the behavior of forms, buttons, and text elements; and using control structures, pattern matching, objects, and application scripts. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 and (CIT 150 or CIT 155) or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 141 (3 credit hours)
PHP I
Explores the fundamentals of PHP, with emphasis on syntax, structure, and current usage. Includes dynamic generation of web pages, fluid forms, and web security. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 142 (3 credit hours)
C++ I
Introduces students to fundamental programming concepts using the C++ programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, and information and file processing. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 143 (3 credit hours)
C# I
Introduces students to fundamental programming concepts using the C# programming language. Includes data types, control structures, simple data structures, error-handling, object-oriented programming, graphical user interfaces, and modular programming. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 120 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 144 (3 credit hours)
Python I
Introduces students to fundamental programming concepts using the Python programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, object-oriented programming, graphical user interfaces and file processing. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 146 (3 credit hours)
Swift I
Introduces students to fundamental programming concepts using the Swift programming language. Includes data types, data structures, error-handling, event driven programming, and using Xcode. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 147 (3 credit hours)
Programming I: Language
Introduces students to fundamental programming concepts using an industry-specific or emerging programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, information and file processing, and uniqueness of the language used in the course. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 148 (3 credit hours)
Visual Basic I
Introduces students to fundamental programming concepts using the Visual Basic programming language. Includes data types, control structures, simple data structures, error-handling, modular programming, event-driven programming, graphical user interfaces, and file processing. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 149 (3 credit hours)
Java I
Introduces students to fundamental programming concepts using the Java programming language. Includes data types, control structures, simple data structures, error-handling, object-oriented programming, graphical user interfaces, and modular programming. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 120 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 150 (3 credit hours)
Internet Technologies
Provides students with a study of traditional and emerging Internet technologies. Covers topics including Internet fundamentals, Internet applications, Internet delivery systems, and Internet client/server computing. Provides a hands-on experience and some rudimentary programming in an Internet environment. Pre-requisite Or Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 105 OR Consent of Instructor.
Co-requisite: CIT 120.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 151 (3 credit hours)
Social Media I
Introduces students to the study of social media. Covers topics including the uses, basic tools, and impact of social media upon society. Examines the benefits for business to leverage the use of social media as well as employing social media policy. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: Digital Literacy or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 152 (3 credit hours)
Social Media Tools and Technologies
Introduces students to web-based social media tools. Explores and researches online applications, social networks, and web branding. Develops skills to leverage social media applications and niche markets to increase business presence. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 150 or Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory

CIT 155 (3 credit hours)
Web Page Development
Introduces web page design through the use of HTML and CSS. Uses text and/or web editors to create web documents with various formats and page layouts, multimedia, tables and forms. Emphasizes W3C web design and accessibility standards. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 105 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 157 (3 credit hours)
Web Site Design and Production
Introduces web site production processes with particular emphasis on design involving layout, navigation, interactivity, and using web production software. Lecture/Lab: 3.0 credits (60 contact hours).
Pre-requisite: CIT 105 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 160 (4 credit hours)
Intro to Networking Concepts
Introduces technical level concepts of non-vendor specific networking including technologies, media, topologies, devices, management tools, and security. Provides the basics of how to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure.
Pre-requisite: Quantitative Reasoning College-Readiness or Consent of Instructor.
Pre- or co-requisite: CIT 111 or Consent of Instructor Lecture: 4 credits (60 contact hours).
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 161 (4 credit hours)
Introduction to Networks
Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. Introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations. Helps students to be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Lecture: 4 credits (60 contact hours).
Pre-requisite: Quantitative Reasoning College-Readiness or Consent of Instructor.
Pre- or co-requisite: CIT 111 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 167 (4 credit hours)
Switching & Routing Essentials
Covers the architecture, components, and operations of routers and switches in a larger and more complex network. Helps students learn how to configure and troubleshoot routers and switches for advanced functionality including proper LAN design, configuring and troubleshooting routers and switches and resolving common issues with VTP, DTP, STP protocols, link aggregation protocols and dynamic routing protocols in both IPv4 and IPv6 networks. Lecture: 4 credits (60 contact hours).
Pre-requisite: CIT 161 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 170 (3 credit hours)
Database Design Fundamentals
Provides an overview of database and database management system concepts, internal design models, normalization, network data models, development tools, and applications. Lecture: 3 credits (45 contact hours).
Pre-requisite: [(CIT 105 or OST 105 or IMD 100) and Quantitative Reasoning College-Readiness] or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 171 (3 credit hours)
SQL I
Provides students with an extensive introduction to database manipulation techniques. Introduces students to SQL; will create and maintain database objects; and store, retrieve, and manipulate data using SQL. Lecture: 3 credits (45 contact hours).
Pre-requisite: (CIT 120 and CIT 170) or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 180 (3 credit hours)
Security Fundamentals
Introduces basic computer and network security concepts and methodologies. Covers principles of security; compliance and operational security; threats and vulnerabilities; network security; application, data, and host security; access control and identity management; and cryptography. Helps to prepare students for the COMPTIA Security+ examination. Lecture: 3 credits (45 contact hours).
Pre-requisite: (CIT 160 OR CIT 161) or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 182 (3 credit hours)
Perimeter Defense
Presents information and skills required to secure computers and networks from attacks with an emphasis on configuration of firewalls and intrusion-detection systems. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 180 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 184 (3 credit hours)
Attacks and Exploits
Provides knowledge and skills necessary to understand a variety of attacks and exploits against computers and networks. Teaches effective defensive techniques against real attacks. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 180 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 201 (3 credit hours)
Information Storage Management
Provides a comprehensive introduction to storage technology. Explores the architectures, features, and benefits of intelligent storage systems, networked storage technologies, long-term archiving solutions, information security, and the emerging field of storage virtualization and cloud technologies. Lecture: 1 credit (30 contact hours). Laboratory: 2 credits (30 contact hours).
Pre-requisite: [CIT 167 and (CIT 214 or CIT 217 or CIT262)] or Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 203 (3 credit hours)
Introduction to Virtualization
Provides an introduction to virtualization technologies including the architecture, its applications, and best practices. Utilizes VMware ESXi servers and VMware vCenter servers for creation and management of virtual machines, virtual switches and storage architectures including distributed resource scheduling, high availability, and fault tolerance. Satisfies the requirements for the vSphere Foundations exam and the VMware Certified Associate Data Center Virtualization (VCA-DCV). Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: [CIT 167 and (CIT 214 or CIT 217 or CIT 262)] or Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 204 (3 credit hours)
VMware Optimize and Scale
Provides advanced skills for configuring and maintaining a highly available and scalable virtualization infrastructure. Utilizes techniques to optimize resources in a virtualized data center to support infrastructure as a service (IaaS) architectures. Satisfies the VMware Certified Professional/Data Center Virtualization (VCP-DCV) course requirement. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: CIT 203 or Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 205 (3 credit hours)
Cloud Infrastructure and Services
Provides a comprehensive introduction to cloud computing deployment and service models, cloud infrastructure, and the key considerations in migrating to cloud computing. Examines the required technology essentials across all domains including server, storage, networking, applications, and databases to help develop a strong understanding of virtualization and cloud computing technologies. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: (CIT 201 and CIT 203) or consent of instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 206 (3 credit hours)
Amazon Web Services Practitioner
Introduces the fundamentals of the services available in Amazon Web Services (AWS). Teaches an overall understanding of AWS Cloud, independent of specific technical roles. Uses a hands-on approach to solution development using actual AWS cloud services. Provides a detailed overview of cloud concepts, AWS services, security, architecture, pricing, and support. Prepares students for the AWS Certified Cloud Practitioner exam. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: CIT 170 and (CIT 161 or CIT 160), or consent of the instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 207 (3 credit hours)
Amazon Web Services Architecting
Covers building IT infrastructure on Amazon Web Services (AWS). Teaches how to optimize use of the AWS platform by understanding AWS services and how those services fit into cloud-based solutions. Teaches how to develop and maintain a well-architected AWS cloud solution. Covers cloud solution reliability, efficiency, and cost-optimization strategies. Emphasizes best practices for the AWS cloud including the process of architecting optimal solutions. Offers a hands-on approach to solution development using actual AWS cloud services. Lecture: 2 credits (20 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: CIT 206 or consent of instructor.
Pre- or co-requisite: (CIT 227 and CIT 262) or consent of instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 208 (3 credit hours)
AWS Systems Operations
Covers the responsibilities, tasks required to build (create), test, deploy, monitor, maintain, and safeguard complex computing systems. Provides an overview of the development of reusable infrastructure templates, which are then tested, deployed, monitored, maintained, and safeguarded, including the development of reusable infrastructure templates. Describes the create systems operations activity. Prepares students to pass the associate-level AWS Certified SysOps Administrator Associate Exam. Pre or Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 206 or consent of instructor.
Co-requisite: (CIT 227 and CIT 262) or consent of instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 212 (4 credit hours)
Connecting and Scaling Networks
Covers WAN technologies and network services required by converged applications in a complex network. Enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Helps students to develop the knowledge and skills needed to implement virtual private network (VPN) operations in a complex network. Develops skills in network security using OSPFv2, ACLs, NAT. Covers network automation, troubleshooting and virtualization. Lecture: 4.0 credits (60 contact hours).
Pre-requisite: CIT 167 OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 213 (3 credit hours)
Microsoft Client Configuration
Covers installation and configuration of the current Microsoft Windows client operating system. Helps prepare students for exams in the Microsoft certification exam series. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: (CIT 111 AND (CIT 160 OR CIT 161)) OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 217 (3 credit hours)
UNIX/Linux Administration
Developed in 1969, the UNIX operating system shaped the development of the Internet and is still used extensively in servers, workstations, and mobile devices. Learn the fundamental skills necessary to install UNIX/Linux and maintain a UNIX/Linux system on a day-to-day basis. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: [CIT 111 and (CIT 160 or CIT 161)] or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 218 (3 credit hours)
UNIX/Linux Net Infrastructure
Establishing secure networking environments is a key strength of the UNIX/Linux operating system. Explores naming, messaging, file transfer, remote login, routing, address assignment, distributed file systems, web, and email services in a standard UNIX/Linux server environment. Lecture/Lab: 3.0 credits (60 contact hours)
Pre-requisite: CIT 217 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 219 (3 credit hours)
Internet Protocols
Provides an in-depth exploration of the components of the TCP/IP protocol suite and the associated underlying technologies required to support them. Includes design, installation, configuration, management, and troubleshooting of TCP/IP networks. Lecture/Lab: 3.0 credits (60 contact hours).
Pre-requisite: (CIT 160 OR CIT 161OR CIT162) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 221 (3 credit hours)
Computer Graphics
Introduces basic computer graphics with an emphasis on graphics for game design. Instructs students in practical aspects of graphics such as color, ray tracing, rasterization, shading, mapping, light, and shadow. Lecture: 3 credits (45 contact hours).
Co-requisite: CIT 124 or IMD 124.
Pre- or co-requisite: CIT 105 or IMD 100 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 222 (3 credit hours)
3D Modeling for Video Games
Instructs students in the use of industry-standard 3D modeling software specific to the video-game industry. Emphasizes both architectural and character modeling. Familiarizes the student with key 3D modeling concepts and methods, workflow, and the creation and preparation of 3D assets for use specifically in a video-game application. Allows students to create a variety of 3D assets. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT/IMD 221 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 223 (3 credit hours)
3D Animation for Video Games
Exposes students to the specialized process of animating 3D assets for gaming applications. Familiarizes students with animating both organic and inorganic assets, lighting scenes, rendering and producing cut-scenes, and preparing character assets for in-game motion. Allows students to acquire the necessary skills and techniques to integrate audio with their animations using basic sound-engineering software and processes. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT/IMD 124 AND CIT/IMD 222 OR Consent of Instructor.
Co-requisite: CIT 273 OR IMD 273.
Attributes: Technical
Components: LEC: Lecture

CIT 225 (3 credit hours)
GIS Data Analysis
Explores Geographical Information System extensions. Introduces and identifies popular advanced extensions used for image analysis, spatial analysis, and 3D analysis. Collection and analysis of field data utilizing GPS devices and data collection applications. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 125 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 227 (3 credit hours)
Introduction to UNIX/Linux Administration
Examines the fundamental skills necessary to install UNIX/Linux and maintain a UNIX/Linux system on a day-to-day basis. Includes installation, networking, file systems, virtualization, and system log files. Lecture: 2 credits (30 contact hours). Laboratory: 1 credit (30 contact hours).
Pre-requisite: (CIT111 AND an Approved Level I Networking Course) OR Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 228 (3 credit hours)
Advanced UNIX/Linux Administration
Provides a deeper understanding of UNIX/Linux administration skills, including storage configuration, security management, task control, and installation and deployment of UNIX/Linux. Lecture: 2 credits (30 contact hours) Laboratory: 1 credit (30 contact hours).
Pre-requisite: CIT 227 OR Consent of Instructor.
Attributes: Technical
Components: LAB: Laboratory, LEC: Lecture

CIT 229 (3 credit hours)
Selected Topics in GIS
Explores selected topics in Geographical Information Systems such as homeland security, agriculture, government applications, remote sensing, spatial modeling, GPS techniques, or cartography. (Course may be repeated with different topics to a maximum of six credit hours.) Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 125 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 232 (3 credit hours)
Help Desk Operations
Introduces a variety of tools and techniques to provide user support in help desk operations. Explores help desk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations and software, needs analysis, facilities management, and other topics related to end user support. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 111 OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 234 (3 credit hours)
Advanced Productivity Software
Uses advanced functions of word processing, presentation, and email software. Includes working with complex documents creating and preparing data distribution on the web. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 130 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 236 (3 credit hours)
Adv Data Organization Software
Uses advanced functions of databases and spreadsheets. Explores complex databases and spreadsheets for the creation and preparation of data distribution on the Web. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 130 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 237 (3 credit hours)
iOS Programming
Introduces students to fundamental IOS mobile application development concepts. Prepares students to design, code, test, and publish IOS mobile applications for iOS platforms. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 146 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 238 (3 credit hours)
Android Programming I
Introduces students to fundamental Android mobile application development concepts. Prepares students to design, code, test, and publish Android mobile applications for a variety of mobile device platforms. Includes secure coding learning modules for Java and Android. Lecture: 3 credits (45 contact hours)
Pre-requisite: CIT 149 or INF 120 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 241 (3 credit hours)
PHP II
Explores the dynamic features of PHP and how it can interact to form spontaneous websites and dynamic feature rich content. Lecture: 3.0 (45 contact hours).
Pre-requisite: CIT 141 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 242 (3 credit hours)
C++ II
Introduces students to advanced programming concepts using C++. Includes advanced data structures, concurrency, innovative algorithms, advanced file processing, and topics that are unique to C++. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 142 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 243 (3 credit hours)
C# II
Provides students with an extensive overview of designing and developing advanced object-oriented applications using the C# programming language. Includes advanced graphical user interfaces, event-driven programming, advanced data types and structures, concurrency, file and data base processing, mobile computing, and other advanced topics. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 143 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 244 (3 credit hours)
Python II
Provides students with an extensive overview of designing advanced computer applications using the Python programming language. Includes graphical user interfaces, event-driven programming, modular programming, advanced object-oriented programming, advanced data types and structures, input validation, error-handling, database processing, and client/server programming. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 144 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 247 (3 credit hours)
Programming II: Language
Introduces students to advanced programming concepts using an industry-specific or emerging programming language. Includes advanced features of the language studied, such as, advanced data structures, concurrency, innovative algorithms, advanced file processing, and topics that are unique to the language studied. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 147 (for the same programming language) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 248 (3 credit hours)
Visual Basic II
Provides students with an extensive overview of designing advanced computer applications using the Visual Basic programming language. Includes graphical user interfaces, event-driven programming, modular programming, object- orientated programming, advanced data types and structures, input validation, error-handling, and file and database processing. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 148 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 249 (3 credit hours)
Java II
Provides students with an extensive overview of designing and developing advanced object-oriented applications using the Java programming language. Includes input and output streams (file processing), polymorphism, inheritance, multithreading, recursion, and other advanced topics. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 149 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 251 (3 credit hours)
Social Media II
Provides students with skills, knowledge, and experience to respond to the challenges of a rapidly changing world through the implementation of social media strategies. Examines social media plans for building social profiles, selecting appropriate audiences, and effective communication through identified social media tools. Covers additional trends, case studies, and research on the creation on utilization of web and social media technologies and practices. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 151 or Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 253 (3 credit hours)
Data Driven Web Pages: (Topic)
Provides students with the knowledge and skills to design, implement, and manage a database-driven web site. Includes the study of databases and web servers in e-commerce, transaction processing, and client-side and server-side Web scripting. Includes the creation of a database-driven Web site. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: ((CIT 150 OR CIT 155 OR CIT 157) AND CIT 170 AND Approved Level I Programming Language) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 255 (3 credit hours)
Web Server Administration
Provides an in-depth study of the functions required to run a safe and stable web server. Considers multiple web services on multiple platforms from installation to configuration, availability, and security. Requires hands-on experiences with web services. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: [(CIT 150 OR CIT 155 OR CIT 157) AND (CIT 214 OR CIT 228 OR CIT 262) AND CIT 219 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 257 (3 credit hours)
Applied Internet Technologies
Provides a framework for integrating the content of the Internet Technologies Web Programming track into a complete and functioning web site. Creates a portfolio of a fully functional web site to aide in student employment within the Web Programming field. Lecture: 3.0 credits (45 contact hours).
Pre- or co-requisite: CIT 253 or Co-Requisite of CIT 255 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 258 (3 credit hours)
Internet Technologies Seminar
Incorporates research, study, and discussion of current and emerging topics, issues, and trends in Internet technologies. Requires participation in class presentations, as well as individual and/or group projects involving Internet technologies. Lecture: 3.0 credits (45 contact hours).
Pre- or co-requisite: CIT 253 or Co-Requisite of CIT 255 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 260 (3 credit hours)
Network Hardware Installation and Troubleshooting
Provides students with the knowledge and skills necessary to design, install, configure, and troubleshoot cabling systems and equipment used to connect a local area network. Lecture: 2 credits (30 contact hours); Laboratory: 1 credit (30 contact hours).
Pre-requisite: CIT 160 OR CIT 161 OR Consent of Instructor.
Components: LAB: Laboratory, LEC: Lecture

CIT 261 (3 credit hours)
MS Active Directory Services
Provides students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows Directory Services. Focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers. Assists in prepping students for exams in the Microsoft certification exam series. Prerequisite: (CIT 111 AND (CIT 160 OR CIT 161)) OR Consent of Instructor. Lecture: 3.0 credits (45 contact hours).
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 262 (3 credit hours)
MS Network Infrastructure
Provides students with the knowledge and skills necessary to install, configure, manage, and support a network infrastructure using a Microsoft Windows server operating system. Assists in prepping students for exams in the Microsoft certification exam series. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: (CIT 111 AND (CIT 160 OR CIT 161)) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 264 (3 credit hours)
Microsoft Server Management
Focuses on the concepts and skills required to manage and maintain Microsoft Windows Servers. Topics include configuration and management of storage solutions, deployment images, Hyper-V implementations, and Windows containers. Lecture: 3 credit hours (45 contact hours).
Pre-requisite: CIT 262 OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 267 (3 credit hours)
UNIX/Linux Network Services
Focuses on installing and managing network services in a UNIX/Linux environment. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT 228 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 270 (3 credit hours)
Microsoft 365 Endpoint Administration
Covers deploying, configuring, protecting, managing, and monitoring devices and apps in a Microsoft 365 environment. Prepares students for exams in the Microsoft certification exam series. Prerequisite(s): CIT 160 or CIT 161 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: LEC: Lecture

CIT 271 (3 credit hours)
SQL II
Provides an extensive overview of SQL using programming to create, query, manage and maintain databases. Uses advanced features of SQL, including stored procedures and triggers, to design and interface with a database and other applications. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 171 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 273 (3 credit hours)
Game Production
Provides students with the opportunity to produce a fully playable 3D video game using assets and materials created in previous courses. Offers students the opportunity to employ an industry-standard game engine to meld 3D content, audio, narrative, character, and environment into a professional and enjoyable video game experience. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT/IMD 124 AND CIT/IMD 222 OR Consent of Instructor.
Co-requisite: CIT 223 or IMD 223.
Attributes: Technical
Components: LEC: Lecture

CIT 274 (3 credit hours)
Seminar in Game Development
Encompasses the three phases of game design and development: conception, creation, and marketing in this project-oriented seminar. Requires participation in class presentations, individual and group projects, development of a game, and creation of a portfolio. Lecture: 3 credits (45 contact hours).
Pre-requisite: CIT/IMD 223 AND CIT/IMD 273 or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 275 (3 credit hours)
Administering Windows Server Hybrid Core Infrastructure
Provides students with the knowledge of administering, managing, securing, optimizing high availability and migrations of Microsoft Servers in on-premise and hybrid cloud environments. Helps prepare students for exams in the Microsoft certification exam series. Prerequisite(s): CIT 160 or CIT 161 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: LEC: Lecture

CIT 277 (3 credit hours)
Programming III: Language
Introduces students to complex programming concepts using an industry-specific or emerging programming language. Includes complex features of the language not previously covered in Programming I and Programming II. Comprehensive projects will be developed that model work performed in a corporate environment. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 247 (for the same programming language) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 278 (3 credit hours)
Visual Basic III
Provides students with the knowledge and skills to design, develop, and implement distributed and Web client applications using the Visual Basic programming language. Includes advanced application and user interface design, custom libraries, ActiveX Objects, stored procedures, and distributed applications. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 248 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 279 (3 credit hours)
Configuring Windows Server Hybrid Advanced Services
Provides students with the knowledge of securing, implementing and managing high availability, implementing disaster recovery, migrating servers and workloads, and monitoring and troubleshooting environments running Windows Server in on-premise and hybrid cloud environments. Helps prepare students for exams in the Microsoft certification exam series. Prerequisite(s): CIT 275 or Consent of Instructor. Lecture: 3 credits (45 contact hours).
Components: LEC: Lecture

CIT 284 (3 credit hours)
Computer Forensics
Provides basic knowledge on methods and processes for computer forensics, intrusion detection, evidence collection, disk imaging, and report writing. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 180 OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 285 (3 credit hours)
MS Windows OS Security
Provides students the knowledge and skills necessary to secure the Windows operating system. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 180 AND (CIT 214 OR CIT 262) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 286 (3 credit hours)
UNIX/Linux OS Security
Provides students the knowledge and skills necessary to secure the UNIX/Linux operating system and to utilize the UNIX/Linux operating system for security functions. Emphasizes use of freely available security tools. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: (CIT 180 AND CIT 228) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 287 (3 credit hours)
Cisco OS Security
Provides students with comprehensive understanding of network security concepts. Includes installation, troubleshooting and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices. Covers implementation of hosts and perimeter edge device firewalls and defense in-depth prevention systems. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: CIT 167 OR CIT 212 OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 288 (3 credit hours)
Network Security
Provides students with the knowledge and skills necessary to understand and defend against a variety of computer and network attacks. Focuses on both the offensive techniques used to launch attacks and the defensive techniques required to defend computers and networks. Lecture/Lab: 3.0 credits (60 contact hours).
Pre-requisite: (CIT 180 AND Level 1 Network Technologies Specialization Sequence) OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 290 (3 credit hours)
Internship
Provides on-the-job experience in computer and information technologies, requiring a minimum of 120 clock hours of appropriate experience approved by the faculty member (40 clock hours per credit); requires a learning contract, signed by the student, faculty member, and supervisor. Note: Course is offered on pass-fail basis only. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 291 (3 credit hours)
CIT Capstone
Apply acquired techniques, knowledge, and skills to successfully analyze, design, and plan a CIT project. Develop key project management and system analysis deliverables in a portfolio. Lecture: 3.0 credits (45 contact hours).
Pre-requisite: 36 credit hours of CIT Courses OR Consent of Instructor.
Attributes: Course Also Offered in Modules, Technical
Components: LEC: Lecture

CIT 293 (1 credit hours)
CIT Employability Studies
Creates an error-free portfolio of employment documents, using computer technology to assist with composition, proofreading, and formatting. Demonstrate proper interviewing skills through mock interviews. Complete a Career Path Employability Assessment. Lecture: 1 credit (15 contact hours).
Pre-requisite: (Sophomore Standing and 18 credit hours of CIT courses) or Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 295 (1-3 credit hours)
Independent Problems in CIT: Topic
Explores concepts and/or skills from special areas of interest in Computer & Information Technologies. Topics vary from semester to semester. May be repeated up to two times with different topics to a maximum of 6 credit hours. Lecture: 1.0 - 3.0 credits (15 - 45 contact hours).
Pre-requisite: Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 297 (3 credit hours)
CIT Professional Preparation
Prepares CIT students approaching the major career transition from college to work to demonstrate a professional image. Requires an error-free portfolio of employment documents using computer technology to assist with composition, proofreading, and formatting. Instructs students on proper interviewing skills through mock interviews. Includes completion of a Career Path Employability Assessment. Lecture: 3 credits (45 contact hours).
Pre-requisite: Sophomore Standing AND 18 credit hours of CIT courses) OR Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 299 (1-3 credit hours)
Special Topics in CIT: (Topic)
Explores concepts and/or skills from special areas of interest in computer and information systems. May be repeated with different topics to a maximum of 6 credit hours. Lecture: 1.0 - 3.0 credits (15-45 contact hours).
Pre-requisite: Consent of Instructor.
Attributes: Technical
Components: LEC: Lecture

CIT 1051 (0.5 credit hours)
Computer Basics
Provides an introduction to the computer and the convergence of technology including computer hardware and software, the social web, green computing, security and computer ethics. Lecture: 0.5 credits (7.5 contact hours).
Pre-requisite: RDG 20 OR Consent of Instructor.
Components: LEC: Lecture