# CIT - COMPUTER INFORMATION TECHNOLOGY

**CIT 107 - Databases** **Units: 1**
This beginning course is designed for people who are at an entry level and want to learn a general overview of current office database software, as well as be productive with simple tasks. Topics include creating and using a database, querying a database, maintaining a database, sharing data among applications, and creating reports and forms.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: Fall*

**CIT 112 - Network +** **Units: 3**
This course covers basic networking terminology, network components, transmission media and protocols. It focuses on the OSI model of network computing. Course serves as preparation for the CompTIA Network+ exam.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: Spring and Fall*

**CIT 114 - IT Essentials** **Units: 4**
This course is a comprehensive overview of the primary operating systems and the support of hardware devices. The class will also demonstrate the integration between hardware and software. Emphasis is on installing, configuring, troubleshooting and upgrading a PC and working with computer users as an IT technician.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: Spring and Fall*

**CIT 128 - Introduction to Software Development** **Units: 4**
This is the first course in programming and software development, and assumes no prior programming experience. The course introduces the basic syntax of a programming language and stresses the principles of good software engineering. The course also introduces HTML (the language of the Web), Web scripting (dynamic Web content), and SQL (Structured Query Language), which is used to access relational databases.
*Transferability: May not transfer towards an NSHE bachelor's degree*

**CIT 130 - Beginning Java** **Units: 3**
Java is a general-purpose, object-oriented programming language used in many different ways. This course is on Java, and the primary emphasis will be on general purpose, object-oriented programming. Topics covered include: primitive and reference data types, control structures, methods, arrays, custom classes, and composition.
*Term Offered: Spring*

**CIT 134 - Beginning C# Programming** **Units: 3**
C# is a general-purpose, object-oriented programming language best known for its ability to create single-source solutions capable of running on a variety of devices (via the .NET platform). This course is the first semester of C# programming, and will include exposure to the .NET platform, but the primary emphasis will be on general-purpose object-oriented programming.
*Term Offered: Fall*

**CIT 135 - Introduction to Swift Coding** **Units: 3**
This introductory course is designed to help students build a solid foundation in programming fundamentals using Swift as the language. Students get practical experience with the tools, techniques, and concepts needed to build a basic iOS app.
*Transferability: May not transfer towards an NSHE bachelor's degree*

**CIT 136 - Application Development with Swift** **Units: 3**
Students get practical experience with the tools, techniques, and concepts needed to build a basic iOS app from scratch. They'll also learn user interface design principles, which are fundamental to programming and making great apps. They'll examine how to design, prototype, and architect an app of their own design.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Pre-requisites: CIT 135 - Introduction to Swift Coding*

**CIT 151 - Beginning Web Development** **Units: 3**
This course introduces students to HTML5 and XHTML coding and Web page development. Topics cover creating and managing a Web site and developing/ designing Web pages, including tables and forms. Students will also learn to enhance Web pages with cascading style sheets, multimedia, and JavaScript. Web Standards and best practices are emphasized. No prior HTML experience is necessary.
*Term Offered: Spring and Fall*

**CIT 152 - Web Script Language Programming** **Units: 3**
This course concentrates on client-side scripting. Client-side technologies are used to validate form data, as well as to provide ways of interacting with visitors. This class builds upon the information presented in CIT 151- Beginning Web Development (HTML5, XHTML and JavaScript), and will also provide an introduction to server-side scripting.
*Enrollment Requirements: Prerequisite: CIT 151 with a C or better.*
*Term Offered: Fall*

**CIT 173 - Introduction to Linux** **Units: 3**
An introduction to the Linux Operating System. Topics include Linux origin, file systems, user commands and utilities, graphical user interfaces, text editors, manual pages and shells. Students are expected to have basic computer literacy prior to enrolling in this course.
*Term Offered: Spring and Fall*

**CIT 174 - Linux System Administration** **Units: 3**
This course covers a variety of topics: installing and configuring a Linux Server, managing users and groups, securing the system and much more. Students should complete CIT 173 or have knowledge of Linux fundamentals before attending this course.
*Term Offered: Spring and Fall*

**CIT 176 - Linux Shell Programming** **Units: 3**
This course teaches the student how to customize the shell's configuration and create custom programs (shell scripts) that increase productivity by automating mundane tasks and extending the Linux command set.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 173.*
*Term Offered: Spring*

**CIT 180 - Database Concepts and SQL** **Units: 3**
This class is targeted for people with little or no SQL knowledge. The objective of this course is to familiarize students with the database concepts that they will need to be effective programmers. Although this course utilizes MySQL because of its open source nature, the topics presented in this course are fundamental and should apply to all relational databases. Course accents hands-on learning in a Structured Query Language (SQL) and SQL procedures.
*Term Offered: Spring*

**CIT 198 - Special Topics in CIT** **Units: 1-6**
Various short courses and experimental classes covering a variety of subjects in the general Computer and Information Technology area. This class will have variable credit of 1 to 6 depending on the course content and number of contact hours required. This course may be repeated for up to six credits.
*Transferability: May not transfer towards an NSHE bachelor's degree*

**CIT 201 - Word Certification Preparation** **Units: 3**
This course is designed to prepare students for the entry-level Microsoft Word certification exam. Students will create documents using formatting basics, tables, graphics, citations, mail merges, tables of contents, and custom features.
*Term Offered: Fall*

**CIT 202 - Excel Certification Preparation** **Units: 3**
This course is designed to prepare students for the entry-level Excel certification exam. Students will create and edit workbooks, format and manage worksheets using formulas, charts, pictures and shapes.
*Term Offered: Spring*

**CIT 211 - MCITP/MCTS Windows Workstation OS** **Units: 3-5**
This course provides students with the knowledge and skills necessary to perform administration tasks in a peer to peer network or a workstation based system using Microsoft Windows. This course is suitable for people with no prior experience in system administration.
*Term Offered: AS NEEDED*

**CIT 212 - MCITP/MCTS Windows Server OS** **Units: 3-5**
This course is intended for new-to-product support professionals who will be responsible for installing and configuring Microsoft Windows Server products and for those who are on the Microsoft Certified Systems Administrator (MCSA) or Microsoft Certified Systems Engineer (MCSE) certification tracks. It provides the knowledge and skills necessary to install and configure Windows Server products to create file, print and terminal servers.
*Enrollment Requirements: Prerequisite or corequisite: CIT 211.*
*Term Offered: Spring and Fall*

**CIT 213 - MCITP/MCTS Network Infrastructure** **Units: 3-5**
This course is designed to provide support professionals with the infrastructure knowledge and skills necessary to install and configure the Microsoft Windows Server and Microsoft Windows workstation operating system products.
*Enrollment Requirements: Prerequisite: CIT 212.*
*Term Offered: Fall*

**CIT 214 - MCITP Application Infrastructure** **Units: 3-5**
This course is designed to provide students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows server services. The course also focuses on implementing Group Policies and understanding the Group Policy tasks required to centrally manage users and computers. This course may be repeated.
*Enrollment Requirements: Prerequisite: CIT 212.*
*Term Offered: Spring*

**CIT 215 - MCITP Active Directory** **Units: 3-5**
This course teaches a topic which is selected form Microsoft's Windows electives used in its certification programs. Topics will be selected based on current standards in computer networking and industry demands in training. Topics will include, but not be limited to, active directory design, infrastructure design, security design, SQL design, implementation and administration, SNA implementation, Exchange Server design, implementation and administration, Proxy Server design, implementation and administration, as well as implementation of new utilities and programs as developed. This course may be repeated under different topics up to 50 times.
*Term Offered: AS NEEDED*

**CIT 216 - Server+** **Units: 3**
The Server+ course covers system hardware, software, storage, best practices in an IT environment, disaster recovery and troubleshooting. This class prepares the successful student to take and pass CompTIA's Server+ certification which is a globally accepted certification.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 114*

**CIT 217 - Security +** **Units: 3**
This is a basic IT security course that covers the current objectives of the CompTIA Security+ certification exam. Topics will include general security concepts, communications security, infrastructure security, basics of cryptography, and operational/organizational security.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 112 or CSCO 120 or instructor approval.*
*Term Offered: AS NEEDED*

**CIT 230 - Advanced Java** **Units: 3**
This course builds upon the foundation constructed in Beginning JAVA. Since JAVA works behind the scenes to power Internet applications, this class will focus more heavily upon application development with an emphasis on client-side and server-side techniques. Example topics include, but are not limited to, inheritance, interfaces, exception handling, javafx, input and output to files and databases, data structures, generics, and searching and sort algorithms.
*Enrollment Requirements: Prerequisite: CIT 130 with a 'C' or better.*
*Term Offered: Fall*

**CIT 234 - Advanced C# Programming** **Units: 3**
This course is the second semester of C# programming, and will include exposure to the .NET platform, but the primary emphasis will be on some of the more advanced features of the language including: windows forms, inheritance, interfaces, abstraction, dynamic data structures, reusable data structures, and use of existing collections.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 134 with a grade of 'C' or better.*
*Term Offered: Spring*

**CIT 235 - Fluent Entity Framework in C#** **Units: 3**
This course is the third semester of C# programming, and will include exposure to the Entity Framework of the .NET platform. The primary emphasis will be on the "code first" and "data first" approaches to using the Entity Framework and the Fluent API.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 234 and CIT 180 with a grade of C or better.*

**CIT 236 - Common Programming Patterns** **Units: 3**
This course will cover some basic and common patterns used in solving programming problems. The emphasis will be on the generally accepted patterns that solve these problems. Students will be able to turn in their work using either the C# or JAVA programming language.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 230 or CIT 234 with a grade of C or better.*

**CIT 237 - Test-Driven Development** **Units: 3**
This course will cover the methods used to create software by writing Unit Tests before development begins. It will be taught in both JAVA and C#, so the student can choose which language to use. Topics covered will include: unit test fundamentals, unit test frameworks, designing unit tests, building a test-driven project, and other topics.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 230 or CIT 234 with a grade of C or better.*

**CIT 251 - Advanced Web Development** **Units: 3**
This course prepares students to use server-side web technologies. The course covers the concepts, design and basic coding of advanced web applications, and is currently using PHP with MySQL Database.
*Enrollment Requirements: Prerequisite: CIT 151 and CIT 152*
*Term Offered: Spring*

**CIT 257 - Web Languages** **Units: 3**
This course explores a variety of emerging technologies that are used in sophisticated Web sites. Students will explore advanced Internet topics that may include dynamic Web site content, database integration, e-commerce, security, server-side configurations, scripting, common gateway interfaces and Web application development.This particular course extends web programming with the introduction of MITs App Inventor, a visual programming environment used to create mobile applications for the Android smart phone operating system.
*Enrollment Requirements: Prerequisite: CIT 152 or instructor approval.*
*Term Offered: Spring*

**CIT 263 - Project Management** **Units: 3**
The purpose of this course is to help students gain the knowledge required to effectively plan, implement and complete IT projects across the organization. Topics will include business practices, interpersonal skills and management process.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: CIT 114 or instructor approval.*
*Term Offered: Spring*

**CIT 274 - Ethical Hacking** **Units: 3**
Explains basic IT security concepts and models. Introduces concepts of penetration testing to validate security measures and identify vulnerabilities; formulate a basic security policy; demonstrate basic penetration attacks; assess risks and countermeasures; explain legal and ethical concerns as they apply to penetration testing; explores methods to gain access to computer resources and methods to prevent/reduce vulnerabilities and will prepare students to take the ECCouncil's Certified Ethical Hacker core certification exam.
*Transferability: May not transfer towards an NSHE bachelor's degree*

**CIT 280 - Introduction to Blockchain Concepts** **Units: 3**
Course offers an introduction to blockchain technology, which is a type of distributed ledger technology: what blockchain is, how blockchain was developed, how blockchain works, and the primary issues, challenges, and opportunities blockchain faces. Students will engage in hands-on work, such as contextualized code exercises, to lay a strong foundation for blockchain development.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: Math 124 or higher.*

**CIT 281 - Intermediate Blockchain Concepts** **Units: 3**
Builds on the concepts introduced in CIT 280 to address intermediate concepts related to blockchain, including the concepts of access, privacy, and integrity. This course also provides an overview of the practical landscape for the blockchain workforce, including industry-specific applications, different types of blockchain, common project types, and limitations and opportunities that might define blockchain in the future.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Enrollment Requirements: Prerequisite: Math 124 and CIT 280*

**CIT 290 - Internship in CIT I** **Units: 1-6**
Work and study in participating and approved business organizations. Department approval required before acceptance of student into course. Department review of student's activities and development on the job required. This class will have variable credit of one to six depending on the work hours required. This course may be repeated.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: AS NEEDED*

**CIT 291 - Internship in CIT II** **Units: 1-6**
Available to students who have completed most Core and Emphasis requirements and have a 2.5 GPA. Work and study in participating and approved business organizations. Department approval required before acceptance of student into course. Department review of student's activities and development on the job required. This class will have variable credit of one to six depending on the work hours required. This course may be repeated.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: AS NEEDED*

**CIT 298 - Advanced Special Topics in CIT** **Units: 1-6**
Various short courses and workshops covering a variety of subjects in the advanced general Computer and Information Technology area. This class will have variable credit of one to six depending on the course content and number of contact hours required. This course may be repeated for up to six credits.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: AS NEEDED*

**CIT 299 - Independent Study in CIT** **Units: 1-6**
The student will do a special project involving a subject or skill related to the CIT curriculum. The project will be designed with a faculty advisor. This class will have variable credit of one to six depending on the course content and number of contact hours required. This course may be repeated. It may be substitute for another course with special permission of the Division. This course may repeated for up to six credits.
*Transferability: May not transfer towards an NSHE bachelor's degree*
*Term Offered: AS NEEDED*