Certificate
CISCO Network Administration with Cybersecurity

McLENNAN COMMUNITY COLLEGE

2023-2024

Degree Description

This one-year certificate program teaches students introductory networking, operating systems, and cybersecurity skills to prepare them to enter the industry.

Students have the opportunity to earn multiple industry certifications including the CompTia A+ (first exam), Security+, Linux+ (first exam), and the CISCO CCENT certifications. McLennan Community College is a CISCO Local Academy.

Marketable Skills

1. Understand and apply computing terminology and concepts used in the workplace- Critical Thinking/Communication.

2. Apply fundamentals of computer programming in structured design concepts- Critical Thinking/Communication.

3. Configure, use, and troubleshoot computer operating systems and/or application software Critical Thinking.

4. Use the Internet to locate, transfer, research and publish information at a level appropriate for the academic and work environment. Critical Thinking/Communication.

5. Install and evaluate desktop and network security protocols and principles- Critical Thinking.

Semester I	Hours
BCIS 1305 Business Computer Applications	3 hours
ITCC 1314 CCNA 1: Introduction to Networks [3]	3 hours
ITSY 1342 Information Tech Security	3 hours
ITSC 1325 Personal Computer Hardware [1]	3 hours
ITSC 1305 Introduction to PC Operating Systems	3 hours
	15 hours

Semester II	Hours
ITCC 1344 CCNA 2: Switch/Rout/Wireless Essen [3]	3 hours
ITSE 2309 Database Programming	3 hours
ITSC 1316 Linux Installation and Configuration [5]	3 hours
ITSY 2342 Incident Response and Handling [4]	3 hours
	12 hours

Total hours: **27 hours**

[1] This course prepares students for the DoD Approved 8570 Baseline Comptia A+ Hardware Certification.

[2] This course prepares students for the DoD Approved 8570 Baseline CompTia Security+ Certification.

[3] MCC is a local CISCO Academy. This is one of three courses leading up to the CISCO Certified Network Administrator certification.

[4] This course prepares students for the DoD Approged 8570 Baseline CompTia CySA+ Certification.

[5] This course prepares students for the first of two CompTia Linux+ Core Professional Certification (two exams).

Course Descriptions

BCIS 1305 Business Computer Applications

Introduces and develops foundational skills in applying essential and emerging business productivity information technology tools. The focus of this course is on business productivity software applications, including word processing, spreadsheets, databases, presentation graphics, data analytics, and business-oriented utilization of the internet. (BCIS 1305 is included in the Business Field of Study.) Semester Hours 3 (2 lec/2 lab)

ITCC 1314 CCNA 1: Introduction to Networks

Covers networking architecture, structure, and functions; introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media and operations to provide a foundation for the curriculum. Semester Hours 3 (2 lec/3 lab)

ITSY 1342 Information Tech Security

Instruction in security for network computer hardware, software, virtualization, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. Topics may adapt to changes in industry practices. Students will learn to ensure the physical security of file servers and other network components using best practices; develop backup procedures to provide for data security; use network operating system features to implement network security; describe the nature of computer viruses, their methods of spreading, and means of protecting networks from viruses; use relevant tools to provide for network security; and use encryption techniques to protect network data. Semester Hours 3 (2 lec/2 lab)

ITSC 1325 Personal Computer Hardware

Studies current personal computer hardware including personal computer assembly and upgrading, setup and configuration, and troubleshooting. The student will assemble/set-up and upgrade personal computer systems, diagnose and isolate faulty components, optimize system performance, and install/connect peripherals. Semester Hours 3 (2 lec/2 lab)

ITSC 1305 Introduction to PC Operating Systems

Introduction to personal computer operating systems, including installation, configuration, file management, memory and storage management, control of peripheral devices and use of utilities. Semester Hours 3 (2 lec/2 lab)

ITCC 1344 CCNA 2: Switch/Rout/Wireless Essen

Describes the architecture, components, and operations of routers and switches in small networks and introduces wireless local area networks (WLAN)and security concepts; provides an in-depth understanding of how routers and switches operate and are implemented in the LAN environment. Prerequisite: ITCC 1314 Semester Hours: 3 (2 lec/ 3 lab)

ITSE 2309 Database Programming

Database development using database programming techniques emphasizing database structures, modeling, and database access. Students develop database applications using a structured query language, create queries and reports from database tables, and create appropriate documentation. Semester Hours 3 (2 lec/2 lab)

ITSC 1316 Linux Installation and Configuration

Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux. Semester Hours 3 (2 lec/2 lab)

ITSY 2342 Incident Response and Handling

In-depth coverage of incident response and, incident handling, including identifying sources, of attacks and security breaches; analyzing, security logs; recovering the system to normal;, performing postmortem analysis; and implementing, and modifying and modifying security measures., , Prerequsisites: Take ITSY 1342 with a minimum, grade of C or better., , Semester Hours 3 (2 lec/2 lab)