

COMPUTER NETWORK ENGINEERING

This program is designed to prepare students for careers in computer networking and cybersecurity.

Graduates will be qualified for technological roles in network design, network infrastructure, network security, and network installation and maintenance.

This program offers several courses that prepare students for achieving the requirements to take the examinations of various industry certifications including: A+, Network+, Security +, Cisco Certified Network Associate (CCNA).

The Associate in Science in Computer Networking and Cybersecurity degree (AS in Computer Networking and Cybersecurity) provides students with foundational knowledge to design, configure, manage, troubleshoot, and secure networks, using the latest concepts, technologies, and techniques.

Program Cost and Outcome

For planning purposes, the website below provides information on the cost of attendance, program length (assuming a student attends full-time), financing options and historical student completion rates: <http://www.sbccc.edu/financialaid/gainfulemployment> (<http://www.sbccc.edu/financialaid/gainfulemployment/>)

Programs of Study

Associate Degree

- Computer Networking and Cybersecurity, Associate of Science (AS) (<https://catalog.sbccc.edu/academic-departments/computer-network-engineering/computer-networking-and-cybersecurity-as/>)

Certificate of Achievement

- Computer Networking and Cybersecurity, Certificate of Achievement (C) (<https://catalog.sbccc.edu/academic-departments/computer-network-engineering/computer-networking-and-cybersecurity-certificate-achievement/>)

Skills Competency Award

- Cisco Networking Associate, Skills Competency Award (SCA) (<https://catalog.sbccc.edu/academic-departments/computer-network-engineering/cisco-networking-associate-skills-competency-award/>)

Credit Courses

Computer Network Engineering (CNEE)

CNEE 101 Introduction to Computers and Networks (4 Units)

Hours: 72 (72 lecture)

Technical introduction to computers and networks. It provides a thorough understanding of basic computer and network components and how they are implemented in a system. Topics include computer hardware and software, standards, protocols, terminology and concepts.

Transfer Information: CSU Transferable, UC Transferable

CNEE 102 A+ Computers and Network Support (4 Units)

Hours: 108 (54 lecture, 54 lab)

Technical introduction to managing and maintaining PC hardware, peripherals, mobile devices and network equipment. Prepares for A+ Certification exams. Includes hands-on lab activities.

Transfer Information: CSU Transferable

C-ID: ITIS 110.

CNEE 109 Introduction to Internet of Things (IoT) (3 Units)

Hours: 54 (54 lecture)

Theoretical introduction to the Internet of Things. Identifying, designing, prototyping, and presenting an IoT solution that securely solves a current problem. Data analysis theories and practice- analytics of IoT sensors and Artificial Intelligence.

Transfer Information: CSU Transferable, UC Transferable

CNEE 110 Networking Essentials (4 Units)

Course Advisories: CNEE 102.

Hours: 108 (54 lecture, 54 lab)

Introduction to networking components and systems including networking standards, protocols, operating systems, security, media and hardware. Prepares students for CompTIA N+ Certification.

Transfer Information: CSU Transferable

C-ID: ITIS 150.

CNEE 120 Introduction to Cybersecurity (4 Units)

Course Advisories: CNEE 110.

Hours: 108 (54 lecture, 54 lab)

Fundamentals of Cybersecurity principles and implementation. Covers authentication, attacks and malicious code, threats and countermeasures, security topologies, intrusion detection, cryptography, firewalls and physical security concepts.

Transfer Information: CSU Transferable

CNEE 125 CCNA-Introduction to Switching and Routing (5 Units)

Course Advisories: CNEE 110.

Hours: 126 (72 lecture, 54 lab)

First half of CCNA certification preparation. Networking concepts, switching, static and dynamic routing.

Transfer Information: CSU Transferable

CNEE 126 CCNA II Advanced Routing and Switching (5 Units)

Course Advisories: CNEE 125.

Hours: 126 (72 lecture, 54 lab)

Second half of CCNA certification preparation. Advanced routing and switching concepts.

Transfer Information: CSU Transferable

CNEE 146 CCNA Security - Firewalls and VPNs (4 Units)

Course Advisories: CNEE 125.

Hours: 108 (54 lecture, 54 lab)

An advanced networking course on installation, configuration and operation of network security on Cisco routers and ASA firewalls, including AAA, access control, intrusion detection, NAT, and VPNs.

Transfer Information: CSU Transferable

CNEE 148 CCNA Cybersecurity Operations (4 Units)

Course Advisories: CNEE 125.

Hours: 108 (54 lecture, 54 lab)

Advanced cybersecurity course. network security concepts, and techniques used in a Security Operations Center (SOC) to find threats on a network using a variety of popular security tools. Prepares for CCNA Cyber Ops certification.

Transfer Information: CSU Transferable

CNEE 206 MS Windows Network Infrastructure (3 Units)

Course Advisories: CNEE 110 and CIS 206.

Hours: 72 (45 lecture, 27 lab)

Introduction to MS Windows network infrastructure. Installation, configuration, management and support of DHCP, DNS, Active Directory, security and Internet services. Includes hands-on lab activities.

Transfer Information: CSU Transferable

CNEE 295 Internship In Computer Network Engineering And Electronics (4 Units)

Hours: 210 (210 lab)

Structured internship program in which students gain experience with community organizations related to the discipline.

Transfer Information: CSU Transferable