



# Bachelor of Science Information & Cybersecurity Technology

## Department of Technology Systems

### Description of the Program

The information & computer technology curriculum prepares students for a career in computer networking, information technology, and technical management. Coursework provides a sound base of information technology fundamentals and advanced work in internetworking and client-server information systems. Under the **Red Hat Academy and through utilization of Microsoft 365**, all students gain in-depth experience in configuring and maintaining operating systems and server applications. Under the **Cisco Networking Academy**, students gain an in-depth understanding of inter-network technology and experience hands-on practice with Cisco routers and switches. During the program, all students are required to sit for **CCNA** certification.

For specialization, students choose between three concentrations, Cloud Technologies, Computer Networking, and Cybersecurity. Students who choose the Computer Networking concentration are prepared for the **CCNP** certification. They obtain jobs as network engineers and network administrators, among others. Students that choose the Cybersecurity concentration learn in-depth procedures to ensure the secure storage and transmission of information. They also learn how to employ countermeasures, test the security of systems, and examine risk. In addition, they develop business continuity and disaster recovery plans. Students are prepared to sit for the **CompTIA Security+** exam. They obtain jobs as Network security officers and Security Analysts. Students that choose the Cloud Technologies concentration take courses that focus on cloud network services and virtualization. They learn to employ concepts related to Software as a Service (SaaS), Platform as a Service (PaaS), and infrastructure as a Service (IaaS). Students will take courses under the **Amazon Web Services (AWS) academy**. Students obtain jobs as a cloud architect, cloud developer, and cloud administrator.

In addition to the ICT technical courses, the curriculum emphasizes communication, how to work in teams and manage projects. Students take courses in project management, technical writing, regulations & policies, industrial psychology and more. This foundation will provide the needed skills to advance in a technology-based career.

This program is for you if you want to:

- Set up and configure computers and systems that allow computers to communicate both locally and over long distances on site or via the cloud.
- Learn the fundamentals of information technology and technical management. Students develop the background to rise to management positions.
- Begin a computer systems career that does not require multiple courses on computer theory and languages.
- Learn how to design, configure, secure, and maintain computer networks and information systems.

### Required Coursework (120 hours)

#### Information & Computer Technology Core:

- Information & Cybersecurity Tech Fundamentals with Lab
- Network Fundamentals (CCNA) with Lab
- Digital Communication Systems (CCNA) with Lab
- Computer Network Technology (CCNA) with Lab
- Network Environment I (MCP) with Lab
- Network Environment II (RHCSA) with Lab
- Cloud Fundamentals with Lab
- Scripting for Information Technology
- Fundamental Network Security with Lab (Sec+)
- Regulations and Policies
- ICT Internship
- Senior Capstone Design Project I & II
- Wireless Communication with Lab
- Technical Presentations
- Technical Writing
- Technology Project Management



#### Concentrations Areas – choose one:



##### Cloud Technologies Concentration:

- Cloud Management with Lab
- Virtualization Technologies with Lab
- Cloud Infrastructure Services with Lab
- Cloud Operations with Lab

##### Computer Networking Concentration:

- Internetwork Routing Technology (CCNP) with Lab
- Implementing Cyberinfrastructure Sec (Palo Alto) with Lab
- Network Automation and Programming (CCNP) with Lab
- Implementing Enterprise Wireless Networks (CCNP) with Lab

##### Cybersecurity Concentration:

- Implementing Cyberinfrastructure Security with Lab
- Ethical Hacking and Penetration with Lab
- Intrusion Detection Technologies with Lab
- Cyberinfrastructure Security Management with Lab

#### General Education and Cognates:

##### English (6 hours)

Composition I & II

##### Social Science (9 hours)

Introductory Psychology  
Personnel and Industrial Psychology  
Social Science elective

##### Humanities & Fine Arts (9 hrs)

At least one in Humanities  
At least one in Fine Arts  
Hum/Fine Arts to total 9 hours

##### Any General Ed Elective (3 hrs)

##### Math (6 hours)

College Algebra  
Statistics or Intro to SPC

##### Science (7 hours)

General Physics I with Lab  
General Physics II

##### Health & Exercise (2, 1 hours)

##### Cognates (3 hours)

Cost & Capital Project Analysis  
or Intro to SPC or Statistics

##### Approved Electives (15 hours)

#### Program Academic Advisor:

**Email:** joynersa21@ecu.edu

#### Program Coordinator:

**Email:** varnellk18@ecu.edu

#### Program Website:

Sarah Joyner

**Phone:** (252) 328-9301

Dr. Page Varnell

**Phone:** (252) 737-5228

cet.ecu.edu/techsystems