

NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

Computer Science and Information Technology Education

Grade: Grade 9 - 12

Course: Cybersecurity Essentials **New**

NCCTE.2020.BC10 - Cybersecurity Essentials

NCCTE.2020.BC10.01.00 - Understand the foundations of cybersecurity.

NCCTE.2020.BC10.01.01 - Identify the cybersecurity landscape and how vulnerabilities impact enterprise level IT infrastructure systems.

NCCTE.2020.BC10.01.02 - Identify the roles performed by major threat actors in modern cyberattacks and their primary motivations.

NCCTE.2020.BC10.01.03 - Compare various cyberattack types and techniques.

NCCTE.2020.BC10.01.04 - Explain how DDOS, Wifi exploits, and advanced threat actions are used to perform cyberattacks.

NCCTE.2020.BC10.01.05 - Compare compliance and security.

NCCTE.2020.BC10.01.06 - Identify the fundamentals of perimeter-based and Zero Trust network security models.

NCCTE.2020.BC10.01.07 - Explain how virtualized data center security differs from physical data center security.

NCCTE.2020.BC10.01.08 - Explain cloud computing security and how it impacts organizational networks.

NCCTE.2020.BC10.01.09 - Compare various network security devices.

NCCTE.2020.BC10.02.00 - Understand the cybersecurity gateway.

NCCTE.2020.BC10.02.01 - Demonstrate knowledge of interconnected technology in daily communication.

NCCTE.2020.BC10.02.02 - Identify systems that need protection.

NCCTE.2020.BC10.02.03 - Examine cybersecurity landscape environments, attack threat vectors, exposure vulnerabilities, and risk factors.

NCCTE.2020.BC10.02.04 - Demonstrate knowledge of physical, logical, and virtual addressing using subnet mask schemes.

NCCTE.2020.BC10.02.05 - Explain the TCP/IP Model and correctly identify the functions of the specific layers including packet encapsulation and lifecycle.

NCCTE.2020.BC10.02.06 - Understand common use of cloud, virtualization, storage, backup, and recovery procedures.

NCCTE.2020.BC10.02.07 - Apply knowledge and skills to plan, design, implement, troubleshoot, and maintain network infrastructure environments.

NCCTE.2020.BC10.03.00 - Understand cybersecurity essentials.

NCCTE.2020.BC10.03.01 - Formulate an industry-standard design to protect infrastructure against cybersecurity threats.

NCCTE.2020.BC10.03.02 - Apply advanced filtering methodologies to protect against all known



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and unknown attack vectors.Â

NCCTE.2020.BC10.03.03 - Understand the basics of cryptography.

NCCTE.2020.BC10.03.04 - Demonstrate the ability to assess and harden endpoints based on security policies.

NCCTE.2020.BC10.03.05 - Identify uses of advanced malware research and analysis to provide enhanced protection for enterprise networks.

NCCTE.2020.BC10.03.06 - Understand mobile and cloud-based connection technologies.

