

## NET Networking

### NET 101 Orientation to Cybersecurity Careers (1-1) 1 cr.

Provides an overview of the cybersecurity industry and the different careers and work roles in the field. Learn the major skills and knowledge required for cybersecurity professions and associate employment skills and knowledge sets to specific classes in the Harper College Cybersecurity AAS Degree and certificate programs. Covers issues facing the cybersecurity industry, cybersecurity professional organizations, and industry credentials. Includes cybersecurity workforce competencies, review of academic degrees, certificates, and credentials. Covers navigating the college environment, learning and academic strategies, and career development.

### NET 105 Information Technology Fundamentals (2-2) 3 crs.

Provides students with the skills required to identify and explain the basics of computing, IT, infrastructure, application and software, software development, database fundamentals and security. Contains basic computer maintenance and support principles. Includes computer science related topics including programming concepts and principles of software development and database design. Aligns to the CompTIA IT (ITF +) Fundamentals certification.

### NET 111 A+ Hardware (2-2) 3 crs.

Provides students with experience installing, configuring, maintaining, upgrading, diagnosing, troubleshooting, and networking recent and current personal computer hardware.

**Prerequisite:** NET 105 with a grade of C or better or concurrent enrollment.

### NET 112 A+ Operating Systems Technologies (2-2) 3 crs.

Provides students with experience installing, configuring, upgrading, diagnosing, troubleshooting, and networking recent and current personal computer operating systems.

**Prerequisite:** NET 105 with a grade of C or better or concurrent enrollment.

### NET 121 Computer Networking (2-2) 3 crs.

Provides students with hands-on experience implementing and maintaining computer networks. Includes networking standards, architecture, models, protocols, operations, security and troubleshooting using current network operating systems. Introduces IP addressing and Ethernet fundamentals. Course prepares students to build simple local area networks (LANs) that integrate IP addressing schemes and foundational network security. Aligns to the CompTIA Network+ certification.

**Prerequisite:** CIS 101, NET 105, or WEB 110 with a grade of C or better. NET 105 can be taken concurrently with NET 121.

### NET 122 Internet Protocols (2-2) 3 crs.

Provides students with a detailed examination of Internet addressing and protocols. Includes IP addressing, routing, IP, ICMP, ARP, TCP, UDP, DHCP, DNS, HTTP, FTP, and SMTP. Uses protocol analyzers to monitor and examine network traffic.

**Prerequisite:** CIS 101 or NET 105 or WEB 110 with a grade of C or better.

### NET 201 Service Desk and Service Management (2-2) 3 crs.

Provides a comprehensive introduction to service desk and IT service management concepts. Includes service desk operations, roles and responsibilities, processes and procedures, service strategy, service design, service transition, service operation and continual service improvement. Emphasizes communication and teamwork skills through collaborative hands-on assignments and activities.

**Prerequisite:** NET 105 with a grade of C or better.

### NET 240 Linux Server Administration (2-2) 3 crs.

Provides students with a comprehensive introduction to Linux Server administration. Includes installation, configuration, and administration of a Linux Server environment. Covers user management, hardware and software configuration, and security as well as network services configuration. Includes creating simple shell scripts, booting into different run levels, controlling services, identifying processes, and virtual machines. Aligns to the CompTIA Linux+ Certification.

**Prerequisite:** NET 121 with a grade of C or better.

### NET 260 Windows Server Administration (2-2) 3 crs.

Provides students with a comprehensive introduction to Windows Server Administration. Includes installation, configuration, administration, and security of a Windows Server environment. Learn to configure network services including DNS, DHCP, ADS, printing, and network routing. Implement and manage Active Directory Domain Services (AD DS) in on-premises and hybrid networking infrastructure and manage storage and file services. Aligns to the Microsoft Administering Windows Server Hybrid Core Infrastructure Certification.

**Prerequisite:** NET 121 with a grade of C or better.

### NET 262 Windows 365 Administration (2-2) 3 crs.

Provides students with the skills necessary to deploy and manage a Microsoft 365 tenant. Implement and manage identity and access systems. Administer, manage and monitor security, threats and compliance in Microsoft 365 and hybrid environments. Includes identity synchronization, and security and compliance. Aligns to the Microsoft 365 Administrator Certification.

**Prerequisite:** NET 121 with grade of C or better.

### NET 270 Cisco Networking (2-2) 3 crs.

Provides students with a comprehensive introduction to Cisco networking, switches, and routers. Includes network access, IP connectivity, IP services, security, and management automation.

**Prerequisite:** NET 121 with a grade of C or better.

### NET 280 Cybersecurity Fundamentals (2-2) 3 crs.

Provides students with a hands-on foundation of essential cybersecurity concepts, principles, trends, practices, technologies, and compliance. Includes topics related to threats, attacks, vulnerabilities, risk, emerging technologies, security architecture and design, identity, and access management, risk management, cryptography, and secure communications. Aligns to the CompTIA Security+ Certification.

**Prerequisite:** NET 121 or NET 122 with a grade of C or better.

### NET 281 Enterprise and Network Security (2-2) 3 crs.

Provides students with basic network security protocols and advanced enterprise security strategies with an emphasis on practical, real-world applications. Includes security concepts, principles, and practices. Covers host, end devices, servers, networks, wireless and mobile devices, virtual systems, and cloud-based systems. Prepares students with the skills to identify, prevent, and mitigate security threats in network environments and enterprise settings. Aligns to the ISC2 Systems Security Certified Practitioner Certification.

**Prerequisite:** Prior or concurrent enrollment in NET280 with a grade of C or better.

### NET 282 Cybersecurity Governance, Risk Management, and Compliance (2-2) 3 crs.

Provides students with an overview of the critical aspects of cybersecurity governance, risk management, and compliance. Equips students with knowledge of current cybersecurity laws, regulations, and best practices. Explores various frameworks and standards used in information security management. Covers regulatory acts. Includes active monitoring techniques and security auditing, compliance, and network monitoring tools. Aligns to the ISACA Certified Information Security Manager Certification.

**Prerequisite:** NET280 with a grade of C or better.

**NET 283 Ethical Hacking and Penetration Testing (2-2) 3 crs.**

Provides students with hands-on skills required of an ethical hacker using a variety of penetration testing tools. Focuses on hacking techniques and technology from an offensive perspective. Covers advanced security concepts, hacking techniques, exploits, automated programs, and defensive recommendations. Includes both passive and active reconnaissance techniques, identifying vulnerabilities across networks, systems, and applications. Explore ethical and legal considerations as well as implications. Aligns to the CompTIA PenTest+ Certifications.

**Prerequisite:** NET 240 and NET 280 with grades of C or better.

**NET 284 Digital Forensics (2-2) 3 crs.**

Provides students with hands-on experience preserving, identifying, extracting, documenting and interpreting computer data. Examine computer data for evidence of a crime or violations of corporate policy. Includes performing forensic investigation on Windows, Unix and Linux file systems. Covers evidence handling, chain of custody, collection, and recovery of computer data using forensic software and methods. Align to the EC-Council Computer Hacking Forensic Investigator (CHFI) Certification.

**Prerequisite:** LINUX SERVER ADMINISTRATION with a grade of C or better.

**NET 290 Cloud Computing (2-2) 3 crs.**

Provides students with hands-on experience in cloud computing. Examines cloud applications, security protocols as well as associated services and deployment models. Reviews system virtualization and its relation to cloud-based computing. Covers managing cloud resources, from planning, provisioning, implementing and deploying cloud based applications. Introduces cloud system disaster recovery. Includes best practices for cloud migration, governance, and networking. Aligns to the CompTIA Cloud+ Certification.

**Prerequisite:** Prior or Concurrent enrollment in NET 240 or NET 260 or NET 280 with grades of C or better.

**NET 298 Cybersecurity Capstone (0-4) 2 crs.**

Provides students with the opportunity to demonstrate their knowledge of cybersecurity theory, principles, best industry practices, methodologies, tools, and technologies. Expects students to use scholarly research methods and leverage their investigative, problem solving, and research skills to study and design a cybersecurity project that addresses a real-world issue or challenge. Guidance and support are provided along with graded evaluation and feedback from their faculty throughout the semester.

**Prerequisite:** CIS 226, NET 280, NET 282, NET 283, NET 284 with grades of C or better.