

Advanced Systems Management and Cybersecurity

PROGRAM OBJECTIVES

The Advanced Systems Management and Cybersecurity program will provide students with the skills and knowledge to pursue certifications and careers in computer and network-related administration. Students receive training on popular operating systems including Microsoft Windows, Microsoft Windows Server and Linux. Moreover, students learn how to configure computer and network technologies such as Cisco routers and switches, Microsoft Exchange Server, Microsoft SQL server, as well as how to automate administration using PowerShell scripts. The program also covers the procedures and technologies that can be used to secure access to data and respond to security breaches.

Students will also learn how to communicate effectively and manage time and IT-related projects within a corporate infrastructure.

CERTIFICATIONS

Students who successfully complete this program will be eligible to write certification exams leading to the following designations: CompTIA A+, CompTIA Network+, CompTIA IT Project+, CompTIA Linux+, CompTIA Cybersecurity Analyst; Cisco CCNA, Microsoft Desktop Administrator Associate (MDAA): Windows 10; MCSA: Server 2016. Students who obtain both the Windows Server 2016 MCSA and Exchange Server 2016 certifications will automatically receive the MCSE: Productivity designation from Microsoft

In total, the program covers 14 individual certification examinations. Students are provided with 14 exam vouchers to write the certifications they wish to pursue.

CAREER OPPORTUNITIES

In addition to careers in PC and Networking Administration, opportunities for successful graduates include Windows Server Administrator, Active Directory Administrator, Windows Network Administrator, Smartphone Administrator, Messaging Administrator, Email Server Administrator, Linux Administrator, Open Source Specialist, and Data Mining Specialist.

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PREREQUISITES

Grade 12 or equivalent or mature student status. If a student does not have Grade 12 or equivalent, he/she must achieve a score of 16 on the Wonderlic Test.

GRADUATION REQUIREMENTS

A student must attain an overall average in each module of at least 70% in order to graduate and receive a diploma. A student must complete all requirements of Student Success Strategies as well as the Field Placement requirements for this program.

PROGRAM OVERVIEW

| Course | Hours |
|---|-----------|
| Student Success Strategies | 20 |
| Software Lab – Computer Fundamentals | 40 |
| A+ | 100 |
| Windows 10 Administration & PowerShell Scripting | 140 |
| Technology Management for IT Professionals | 80 |
| Network, Mobile & Cisco Technologies | 160 |
| Installing and Configuring Windows Server (70-740) | 80 |
| Windows Server Administration (70-741) | 80 |
| Configuring Advanced Windows Server Services (70-742) | 80 |
| Microsoft Exchange Server Administration | 80 |
| SQL Server Administration | 80 |
| Enterprise Smartphone Administration | 80 |
| Linux Administration | 140 |
| Security and Ethical Hacking | 100 |
| Career Planning and Preparation Level I | 20 |
| Career Planning and Preparation Level II | 20 |
| Advanced Systems Management and Cybersecurity | |
| Field Placement | 16 weeks |
| TOTAL WEEKS | 81 |

COURSE OVERVIEW

Student Success Strategies

In this orientation module, emphasis is placed on thinking about achieving success from Day One. This module stresses the importance of developing non-technical skills to enhance personal, academic, and career success. This includes understanding learning styles and honing practical study skills, such as memory, reading, note-and test-taking techniques. Personal exercises will focus on teamwork, decision making and problem solving skills, setting SMART goals and maintaining a positive attitude; techniques for managing change, stress and conflict will also be explored.

Software Lab - Computer Fundamentals

Through a combination of theory and hands-on-practice, this module examines the role and use of the computer in today's workplace. Emphasis is placed on those computers outfitted with the Microsoft Windows operating system. Students will review basic computer concepts, Windows OS usage, and complete hands-on training exercises in business-standard software applications, including Microsoft Outlook and Microsoft Word. Keyboarding skills are also honed via daily keyboarding exercises and drills.

A+

This course introduces the essential operating system skills required of a computer support technician, and covers the skills necessary to achieve the 1000-series A+ Certification (exams 220-1001 and 220-1002). More specifically, students learn how to use, configure, upgrade, troubleshoot and maintain computer hardware alongside the Windows family of operating systems, as well as basic configuration of Linux, MacOS, and mobile operating systems.

Windows 10 Administration & PowerShell Scripting

This course introduces the skills and knowledge necessary to install, configure, administer, and support Microsoft Windows 10. In addition, you will learn about the various tools for administering, configuring, and troubleshooting Windows 10, as well as how to deploy and upgrade to Windows 10, configure disks, users, drivers, printers, network interfaces and security. The course also introduces students to the structure, function, and usage of Windows PowerShell for Windows administration. Students will learn how to use PowerShell to perform key system tasks as well as how to create and modify existing PowerShell scripts to automate system administration and provide reports. This course is a prerequisite for all other Microsoft courses and covers the material tested on the MD-100 and MD-101 certification exams required to obtain the Modern Desktop Administrator Associate (MDAA) designation.

Technology Management for IT Professionals

Communication as well as time and project management skills are vital for success in today's IT industry. Through the use of examples, demonstrations, projects and group activities, students will examine various communication, time and project management strategies and techniques that are commonly used within the IT industry. Moreover, this course introduces students to the concepts necessary to achieve the CompTIA IT Project+ certification (PK0-004).

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Network, Mobile & Cisco Technologies

In this course students will learn the theory and concepts required to successfully administer and troubleshoot TCP/IP-based networks. Students will then expand their knowledge of TCP/IP-based networks by learning the configuration and support of mobile devices that use the ActiveSync protocol, as well as Cisco routers, switches and services. Additionally, in addition this course provides the conceptual foundation for later networking courses and introduces the concepts covered on the Comptia Network+ certification exam (N10-007) and Cisco Certified Network Associate (CCNA) certification exam (200-125).

Installing and Configuring Windows Server (70-740)

The goal of this course is to provide individuals who have successfully completed an introduction to Windows with an in depth look at the different installation and configuration tasks necessary to manage Windows Server 2016. These tasks include Windows Server deployment, storage configuration, Hyper-V virtualization configuration, as well as fault tolerance, maintenance and monitoring. Additionally, this course covers the material on the Microsoft Certified Solutions Associate (MCSA) certification exam 70-740: Installation, Storage, and Compute with Windows Server 2016.

Windows Server Administration (70-741)

This course focuses on the configuration of networking and network services within Windows Server 2016. More specifically, students will learn how to configure IPv4 and IPv6, manage IP addressing and DNS name resolution services, as well as provide for remote connectivity. Additionally, this course covers the material on the Microsoft Certified Solutions Associate (MCSA) certification exam 70-741: Networking with Windows Server 2016.

Configuring Advanced Windows Server Services (70-742)

This course focuses on configuration and administration of Windows Server Active Directory. Moreover, this course covers the configuration and management of Group Policy, certificates and identity access on Windows networks. Additionally, this course covers the material on the 70-742 certification exam required alongside 70-740 and 70-741 to obtain the Windows Server 2016 Microsoft Certified Solutions Associate (MCSA) designation.

Microsoft Exchange Server Administration

This course introduces the skills and knowledge necessary to design, install, configure, administer, and support the Exchange Server 2016 messaging server within an enterprise environment. Additionally, this course covers the concepts tested on the Microsoft certification exam 70-345: Designing and Deploying Microsoft Exchange Server 2016.

SQL Server Administration

This course introduces the concepts and skills required to administer Microsoft SQL Server, including how to install/upgrade SQL Server, as well as create, manage, monitor, and optimize databases. Additionally, students will explore automation, security, replication, backup/restore, snapshots, log shipping and clustering.

Enterprise Smartphone Administration

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This course introduces students to the concepts and procedures used to implement, configure, secure and support enterprise smartphones. More specifically, students will learn how to configure both Microsoft ActiveSync and BlackBerry Enterprise Server for Microsoft Exchange. In addition, focus will be placed on smartphone security and provisioning processes used within organizations today.

Linux Administration

In this course, students will learn how to install, configure, and administer the basic services of a Linux system. More specifically, they will gain a solid working knowledge of how the Linux operating system works, experience in navigating within the file structure, system and network administration skills, security tools and practices, and more. At course completion, students will have covered the topics covered on the CompTIA Linux+ (Powered by LPI) certification exam.

Security and Ethical Hacking

This course introduces students to the concepts and procedures used to implement and configure security within an enterprise environment. More specifically, students will learn the procedures and technologies that can be used to secure access to data and respond to security breaches, as well as the procedures and technologies used to perform a penetration test and vulnerability assessment. Additionally, this course covers the concepts tested on the CompTIA Security+ certification exam (SY0-501) and CompTIA Cyber Security Analyst+ certification exam (CS0-001).

Career Planning and Preparation Level I

This module introduces tools for planning and preparing for a successful job search, so that students can maintain a career-focused approach throughout their education program. Students will learn about the "Hidden" Job Market and ways to access it in their upcoming job search, how to research opportunities and network for industry contacts, and use appropriate etiquette when communicating with prospective employers. Students will identify their personal skills, values and preferences for the workplace, begin preparation of a professional resume and references, and organize proof documents for their career portfolio. Class discussions on various self-management topics introduced in Student Success Strategies will round out this module, which is a pre-requisite for Career Planning and Preparation - Level II.

Career Planning and Preparation Level II

This module continues to build on the concepts and skills introduced in Career Planning and Preparation - Level I. Students will learn how to conduct an effective job search and identify various methods of applying for work with today's technology. Students will create a personal list of "Top Employers" and target current industry opportunities, while finalizing their professional resume, portfolio and career correspondence. Students will learn to identify the different types and forms of interviews, practice responding to typical questions, and practice follow-up, evaluation and negotiation techniques they can use to ensure success. Self-management topics from Career Planning and Preparation - Level I will be reviewed, with a focus towards on-the-job success in both learner placements and post-graduate employment.

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Advanced Systems Management and Cybersecurity Field Placement

At the successful completion of the classroom hours of this program, students will be placed on an internship at an outside organization. Students will have the opportunity to apply their new and developed skills in a real-world environment. Hosts include small, medium, and large organizations that have an Information Technology department, or organizations that provide technology and technology services.

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