

IT Systems Administrator

PROGRAM OBJECTIVES

The IT Systems Administrator 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.

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+, 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 15 individual certification examinations. Students are provided with 15 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, Windows Systems Engineer, Smartphone Administrator, Messaging Administrator, Email Server Administrator, Linux Administrator, Open Source Specialist, Database Administrator, SQL Server Administrator, and Data Mining Specialist.

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PREREQUISITES

Grade 12 or equivalent or mature student status.

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
Software Lab – Word Fundamentals	20
Software Lab – Excel Fundamentals	20
Software Lab – PowerPoint Fundamentals	20
Software Lab – Access Fundamentals	20
A+	80
Network+	100
Cisco CCNA	120
Mobile Device Support	20
Technology Management for IT Professionals	80
Windows 10 Administration	140
Windows PowerShell Scripting	20
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 and Design (70-345)	160
Linux Administration	120
Querying Microsoft SQL Server 2012 (70-461)	80
Administering Microsoft SQL Server 2012 (70-462)	80
SharePoint Essentials	40
Career Planning and Preparation Level I	20
Career Planning and Preparation Level II	20
Field Placement	16 weeks
TOTAL WEEKS	95

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.

Software Lab – Word Fundamentals

This course consists of online training and assessment in Microsoft Word and builds on the skills first introduced in Computer Fundamentals. Focus is on basic Word Processing skills, with emphasis on formatting text and paragraphs, inserting and modifying tables, inserting and modifying pictures, header and footer content, and page set-up features.

Software Lab – Excel Fundamentals

This course consists of online training and assessment in Microsoft Excel. Focus is on spreadsheet basics, with emphasis on creating, formatting and printing worksheets, creating formulas, sorting and filtering data, creating and modifying charts, creating and modifying pivot tables, and using basic mathematical and logical functions.

Software Lab – PowerPoint Fundamentals

This course consists of online training and assessment in Microsoft PowerPoint. Students are introduced to essential tools for creating attractive, professional looking slideshow presentations, with a focus on creating and formatting slides, tables, charts, and shapes, as well adding animations and transitions to slideshows.

Software Lab – Access Fundamentals

This course consists of online training and assessment in Microsoft Access. Students are introduced to database concepts and review basic functionality for the end-user, including creating and modifying database tables, queries, reports and forms.

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A+

This course provides the essential skills required of a microcomputer hardware and software service technician and covers the concepts necessary to achieve the CompTIA A+ Certification (Exams 220-901 and 220-902). More specifically, students learn the features of various hardware devices, as well as their configuration, maintenance, and troubleshooting practices. In addition, students learn how to use, configure, upgrade, troubleshoot and maintain the Windows family of operating systems.

Network+

In this course, students will learn the theory and concepts required to successfully administer and troubleshoot TCP/IP-based networks. 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).

Cisco CCNA

This course introduces students to the configuration of Cisco technologies. More specifically, this course allows students to expand their understanding of the TCP/IP switching and routing concepts learned in Network+ to apply Cisco technologies. In addition, this course covers the concepts tested on the Cisco Certified Network Associate (CCNA) certification exam (200-125).

Mobile Device Support

This course introduces students to the structure and function of ActiveSync and the BlackBerry Infrastructure, as well as the concepts and procedures required to support BlackBerry and non-BlackBerry smartphones in corporate and non-corporate environments.

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).

Windows 10 Administration

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. 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.

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Windows PowerShell Scripting

This course provides students with the knowledge and skills necessary to write and maintain PowerShell scripts to automate all aspects of system administration for computers running the Microsoft Windows operating system. In addition to basic PowerShell concepts such as Cmdlets, Scripts and Pipelining, this course covers the interfaces built into the Windows operating system (eg. Windows Management Instrumentation - WMI and Active Directory Services Interfaces - ADSI) which scripts must call in order to manipulate the operating system. This course has been designed for system administrators and does not require an extensive background in programming.

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 and Design (70-345)

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.

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Linux Administration

In this course, students learn how to install, configure, and administer the basic services of a Linux system. More specifically, students will gain a solid working knowledge of how the Linux operating system works, experience in navigating within the file structure, system & network administration skills, security tools and practices, and more. At course completion, students will have covered the topics covered on the CompTIA Linux+ (XKO-004) certification exam.

Querying Microsoft SQL Server 2012 (70-461)

This course introduces students to the Structured Query Language (SQL) using Microsoft SQL Server 2012. More specifically, students will learn how to perform SQL Queries on sample databases, mine for specific types of data, as well as use specific programs that can help mine for data and produce reports. Additionally, this course covers the material tested on the Microsoft certification exam 70-461.

Administering Microsoft SQL Server 2012 Databases (70-462)

This course introduces the concepts and skills required to administer Microsoft SQL Server 2012. More specifically, students will learn how to install/upgrade to SQL Server as well as create, manage, monitor, and optimize databases. Additionally, students will explore additional management tasks such as automation, security, replication, backup/restore, snapshots, log shipping and clustering. At course completion, students will have covered the material tested on the Microsoft certification exam 70-462.

SharePoint Essentials

This course will provide students with the knowledge and skills to configure and manage a Microsoft SharePoint Server 2013 environment. This course will teach students how to configure SharePoint Server 2013, as well as provide guidelines, best practices, and considerations that will help them optimize their SharePoint server deployment.

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

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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.

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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