Program Overview
The first year of the Information Technology - Systems Administration Specialist program provides students with a foundation in computer systems along with strong LAN networking skills. These skills will allow students to support and manage computer systems and the networks connecting them.

The second year of the program focuses on server administration, database administration, virtualization and cloud computing concepts. Students learn how to securely install, configure and manage servers in a virtualized environment. The curriculum provides skills to help prepare students for the Microsoft Technology Associate (MTA), VMware Certified Professional (VCP), EMC Storage Administrator, CompTIA A+, Network+, Linux+, and Server+ certifications.

Special Features
WITC is affiliated with the following industry partners providing students with access to a variety of materials and software: Cisco, CompTIA, Microsoft, and VMware.

Admission Requirements
Students in this program must:
• Complete application form and submit with fee (fee waiver may apply if previously submitted)
• Complete Accuplacer entrance assessment to determine placement (waiver may apply with acceptable alternative test scores and/or postsecondary degree completion)
• Review and sign Functional Ability Statement of Understanding
• Complete admissions meeting with a WITC counselor (above requirements should be completed prior to meeting)

Program Outcomes
Employers will expect graduates of the Information Technology - Systems Administration Specialist program to be able to:
• Manage information technology hardware
• Manage software
• Support computer networks
• Provide end user support
• Solve information technology problems
• Demonstrate customer service skills as an IT professional

Employability essentials and indicators will also be addressed to develop personal awareness, career effectiveness, and professionalism. See page 5 of the college catalog for a list of employability essentials and indicators.

Career Outlook
The use of computers in business and industry has led to a strong demand for systems administration specialists. Job opportunities after graduation include:
• Systems Administrator
• Microsoft Server Administrator
• Network Technician
• VMware vSphere Administrator
• Database Administrator
• Cloud Technician

With additional education and/or work experience, graduates may find employment as:
• Network Administrator
• Information Security Analyst
• Data Center Manager

Curriculum

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General Studies Courses
• 10801136 English Composition 1 | 3 |
• 10801196 Oral/Interpersonal Communication or 3 |
• 10801198 Speech | 3 |
• 10801197 Technical Reporting | 3 |
• 10801123 Math with Business Applications or 3 |
• 10041133 College Technical Mathematics 1A or 3 |
• 10041133 Mathematics and Logic | 3 |
• 10089166 Introduction to Ethics: Theory and Application or 3 |
• 10809172 Introduction to Diversity Studies | 3 |
• 10809195 Economics | 3 |
• 10809198 Introduction to Psychology | 3 |

Electives
3

Program Requirements
70

Career Pathway Options
Career Pathways connect progressive levels of coursework to allow students to build upon their education. Each step in the pathway connects with employment options and provides the opportunity for advancement to higher levels. The Information Technology - Systems Administration Specialist program includes the following pathway option:
• 30-150-4 IT Network Technician Technical Diploma

Career Pathways

| Technical Diploma (less than one-year) | IT - Systems Administration Specialist |
| IT – Network Technician | Tech-1-2 |
10150111 Cisco CCNA 1 Introduction to Networks - Credits: 3
Cisco CCNA 1 Introduction to Networks (ITN) covers networking architecture, structure, and functions. The course introduces IPv4 and IPv6 addressing structure and design, the fundamentals of Ethernet concepts, media, and operations, the OSI and TCP/IP models and associated protocols to set a strong networking foundation. Wireshark is used to examine protocols on the network. Students configure and troubleshoot routers (IOS), switches and clients for a basic network. PREREQUISITE: Established skills assessment or COREQUISITE: 10834104 Introduction to Reading.

10150113 Cisco CCNA 2 Routing and Switching Essentials - Credits: 3
This course covers the components, and operations of routers and switches in a small network. Students learn how to configure, device management, switch ports, security, VLANs, Static and Dynamic routing, DHCP (v4 and v6), NAT and ACLs on routers and switches. At the completion of this course student may achieve a discount voucher for the CCENT certification exam. PREREQUISITE: 1050111 Cisco CCNA 1 Introduction to Networks.

10150117 MS LAN Admin - Infrastructure - Credits: 3
This course provides students with training in the configuration of services in a Microsoft Server environment. Students will learn how to setup and troubleshoot DHCP, DNS, printing, file sharing, and remote access services. Microsoft file permissions will be examined. DHCPP, DNS, printing, and file sharing will be introduced. DHCPs include Windows Firewall, Network Access Protection, and IPv6. PREREQUISITE: 10514149 Windows Operating Systems.

10150118 MS LAN Administration - Active Directory - Credits: 3
This course provides the students with the concepts and techniques necessary to implement, secure and administer Microsoft’s Active Directory Services. Students will learn how to use administrative tools, integrate DNS and Active Directory, manage user and group accounts, configure system policies, and configure multiple Active Directory sites. PREREQUISITE: 10514149 Windows Operating Systems.

10150121 Hardware/Software Installation - Credits: 2
This course will prepare students to install hardware and software. You will learn to properly install various types of hardware and software on an IBM-compatible personal computer. This lecture- and lab-based course will use both group and individual activities. PREREQUISITE: 10514149 Windows Operating Systems.

10150139 IT Essentials - Credits: 2
The IT Essentials (ITE) course introduces students to the fundamentals of computer hardware and software, mobile devices, security and networking concepts, and the responsibilities of an IT professional. The latest release includes mobile devices, Linux, and client-side virtualization, as well as expanded information about Microsoft Windows operating systems, security, networking, and troubleshooting. This course covers materials on the CompTIA A+ certification exam.

10152100 Database Concepts and SQL - Credits: 3
This course is a comprehensive introduction to database concepts. The interaction between software applications and databases will be discussed. Database terminology will be introduced. Students will learn how to manage, design, and construct relational databases. Structured Query Language (SQL) will be used to define and access databases. Other topics include normalization, entity relationship diagrams, foreign key constraints, and indexes.

10154103 Linux Operating Systems - Credits: 3
In this course the Linux operating system is examined in-depth with emphasis on features, capabilities, tools, and configuration including an introduction to network configurations. Additional topics will examine other operating systems like MacOS.

10154141 VMware Certified Professional - Credits: 3
This course is an introduction to Enterprise virtualization using VMware vSphere, ESXi and vCenter. Students learn the role of VMware vSphere in their environment and how to configure and manage the vSphere virtualization environment. Students also learn to design, implement, and manage VMware vSphere, ESXi and vCenter. Students receive hands-on experience in the installation, configuration and management of VMware. This course also covers storage and networking concepts important to virtualization. This course also fulfills the VMware vSphere: Install, Configure, Manage requirement to take the VCP certification exam. PREREQUISITE: 10150113 Cisco CCNA 2 Routing and Switching Essentials.

10154142 Linux Storage Concepts - Credits: 2
Storage Concepts - Credits: 2
This course will address the challenges and solutions for data storage and data management. Topics include RAID implementation and comparison, intelligent storage systems and LIN configuration, storage area networks (Fibre Channel SAN, iSCSI SAN, Network-Attached Storage), business continuity, backup and recovery, and storage security. PREREQUISITES: 10150117 MS LAN Admin – Infrastructure and 10154103 Linux Operating Systems.

10154143 IT Scripting - Credits: 3
Scripting technologies are used to automate system management tasks and create system management utilities. Students will learn basic programming logic concepts to develop scripts. Windows PowerShell is utilized to administer and automate tasks in Microsoft network environments. PREREQUISITES: 10150117 MS LAN Admin – Infrastructure and 10154103 Linux Operating Systems.

10154146 Ethical Hacking - Credits: 3
Ethical hacking students will test, test and secure their own systems. Students in the lab environment will apply practical experience to implement essential security for systems. This course covers ethical hacking students will test, test and secure their own system. The processes of escalating privileges, Intrusion Detection, Policy Creation, Social Engineering, DoS’s, Attacks, Buffer Overflows and Virus will be studied from an ethical and defense point of view to help secure resources in the information technology. PREREQUISITES: 10150117 MS LAN Admin – Infrastructure and 10154103 Linux Operating Systems.

10154147 Database Administration - Credits: 3
This course covers basic concepts of database administration including setting up and securing users, tuning operations, database security, and backups. This course also covers web server administration and software deployment as well as basics of SharePoint administration. PREREQUISITE: 10150118 MS LAN Admin – Active Directory and 10152100 Database Concepts and SQL.

10154146 Cloud Computing - Credits: 3
This course will examine how storage and virtualization technologies are making possible the enormous rise of cloud computing. The course will look at the impact that cloud computing is having on traditional datacenters. It will also discuss security and disaster recovery from a cloud computing perspective. PREREQUISITE: 10154141 VMware Certified Professional.

10154147 Capstone Project - Credits: 2
This course is the capstone work-based experience for the IT - Systems Administration Specialist program. Learners will design, develop, and perform a project either in an actual work experience or a simulated project. The project will be designed to utilize skills typical of a graduate in the field. Weekly simulated timesheets, job progress reports, and oral reports to management will be used to track project progress. Successful completion will require project documentation. COREQUISITE: 10154146 Cloud Computing.

10154148 IT Field Experience - Credits: 1
Provides work experience in IT Field related to course work within the program. The experience should complement program courses to implement practical application of skills students obtain. By consent of instructor, a special project(s) may be substituted for the field experience. COREQUISITE: 10154146 Cloud Computing.

10154149 Windows Operating Systems - Credits: 3
A review of the most common command line operations and study of more advanced commands necessary to configure the Windows operating system(s). Topics to be studied include creating directories, batch files, menus, custom configurations, file management, multi-tasking, windowing, security, and disk management utilities. There will be an introduction to usage, configuration, and tools of the Windows operating system. PREREQUISITE: Successful scores on placement test or 74858745 ABE Reading Level 4.

10890105 Job Quest - Credits: 1
This course is designed to enhance the student’s ability to seek, obtain, and retain employment. Assessment of personal characteristics, job-seeking and retention skills, preparation of employment-related documents, and interviewing strategies are included.

Graduate Employment Information
(WITC Graduate Survey Responses 2014-2015; for most recent data, go to witic.edu)

| Number of graduates | 6 |
| Number of responses | 6 |
| Number available for employment | 4 |
| Number employed | 4 |
| Percent employed | 100% |
| Employed in related field | 4 |
| % employed in WITC district | 50% |
| Range of yearly salary | $28,400-$36,231 |
| Average yearly salary | $32,463 |

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