GREAT PLAINS TECHNOLOGY CENTER
COURSE OF STUDY

Career Cluster: Information Technology (IT)

Career Pathway: Network Systems (IT001)

Career Major: Network Technician Associate (Server Emphasis) (IT0010115)

Career Major Hours: Adult Students: 1050 Hours

Instructor:
Name: Nicholas Alexander
Office Number: (580) 351-6702
E-Mail Address: nalexander@greatplains.edu

Academic Credit: Adult Students: Transcript

Prerequisites: None

Career Major Description:
This major builds skills in the development, installation, operation, and management of medium-sized networks which include components such as routers and switches. Curriculum will also cover wireless networking concepts and comprehensive network security measures. In addition, students learn to install, configure, maintain and manage a server environment. This career major builds knowledge and technical skills required for obtaining industry certifications in Cisco Certified Entry Level Technician, Cisco Certified Network Associate, CCNA Security, as well as Microsoft Certified Technology Specialist (MCTS), Microsoft Certified IT Professional: Server Administrator and Microsoft Technology Associate (MTA).

Career Major Goals:
Students enrolled in this career major will obtain skills necessary to design, implement and troubleshoot a Microsoft Windows Server Active Directory service and network infrastructure. Students enrolled in this career major will be given the opportunity to develop skills and attitudes necessary for successful entrance into the Server and Network Technology field within the confines of their abilities, individual application, and resourcefulness. Students will prepare for the CCNA Security certification and Cisco System's CCENT (Cisco Certified Entry Networking Technician) and CCNA (Cisco Certified Network Associate) certifications as well as Microsoft's MCP (Microsoft Certified Professional) and MTA (Microsoft Technology Associate) examinations.

Upon achieving the goals of this career major, students will:
- Student will become competent in the fundamental skills of the Information Technology, Server Management and Networking Technology fields.
- Student will become qualified for further related education and/or entry into the job market.
- Students will demonstrate competence in their knowledge and technical skills.
- Students will demonstrate critical and troubleshooting skills in the field of networking and server management.
- Students will exhibit professionalism.
- Students will demonstrate communication skills necessary to effectively interact with clients and other IT professionals.
Related Career Opportunities:
- Network Systems Technician Associate
- Network Security Specialist (Networking Emphasis)
- Network Security Professional (Networking Emphasis)
- Technology Specialist
- Lead Network Technician
- Senior Technician, Help Desk
- Information Systems Technician
- IT/Network Support Technician
- Network and Computer Systems Administrator

Career Major Objectives:
After successful completion of this career major, the student will be able to:
- Understand network hardware, routers, switches, wireless, local area networks (LANs).
- Demonstrate proper care, maintenance, and use of networking software, tools and equipment.
- Perform network management
- Implementing Firewall Technologies, Intrusion Prevention, and Virtual Private Networks.
- Install and maintain selected operating systems, networks and software applications.
- Advise users on Disk Operating System, networking and simple software solutions.

DESCRIPTION OF COURSES

The Instructor will ascertain the network competency level of each student in order to designate whether the student takes the Network Security Awareness course or the CCNA Network course.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>ADT</th>
<th>ADL</th>
<th>Total</th>
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<tbody>
<tr>
<td>BT00257</td>
<td>Windows Server Administration Fundamentals</td>
<td>80</td>
<td>40</td>
<td>120</td>
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<td></td>
<td>Candidates for this course are seeking to prove Windows Server administration knowledge and skills. Candidates should have a solid foundational knowledge of the topics outlined in this preparation guide. It is recommended that candidates become familiar with the concepts and the technologies described here by taking relevant training courses. Candidates are expected to have some hands-on experience with Windows Server, Windows-based networking, Active Directory, account management, and system recovery tools and concepts.</td>
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<tr>
<td>BT00052</td>
<td>Network and Routing Fundamentals</td>
<td>100</td>
<td>50</td>
<td>150</td>
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<td>Students will prepare for positions related to the installation, configuration, and troubleshooting of network hardware peripherals and protocols. Students will learn the basics of networking by exploring the OSI model, network topologies, cabling techniques, network communications protocols, and hardware. Students will cover curriculum pertaining to networking basics and routers/routing basics, which is the first half of four courses leading to the Cisco Certified Network Associate Routing &amp; Switching (CCNA R+S) designation. Practicum is provided through the assignment of &quot;hands-on&quot; community service projects.</td>
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<tr>
<td>BT00104</td>
<td>Server Infrastructure Design</td>
<td>80</td>
<td>40</td>
<td>120</td>
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<td>This course provides students with the knowledge and skills to design a Microsoft Active Directory service and network infrastructure for a Microsoft Windows Server 2012r2 environment. The course is intended for systems engineers who are responsible for designing directory service and/or network infrastructures.</td>
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Students will perform server installation, configuration, and administration duties and provide support for network users in various work environments.

Students will cover curriculum pertaining to switching basics, intermediate routing, and WAN technologies, which is the second half of four courses leading to the Cisco Certified Network Associate Routing & Switching (CCNA R+S) designation. Practicum is provided through the assignment of "hands-on" community service projects.

This course provides students with the knowledge and skills to successfully plan, implement, and troubleshoot a Microsoft Windows Server Active Directory service infrastructure. The course focuses on a Windows Server directory service environment, including forest and domain structure; Domain Name System (DNS); site topology and replication; organizational unit structure and delegation of administration; Group Policy; and user, group, and computer account strategies.

Students will demonstrate knowledge and competency in PC, Server, and Internet Security. Students will utilize these skills in preparation for positions related to the maintenance of computers and computer-related equipment through hands-on and project-based learning, textbook assignments, and Internet research. The focus of this course is in the hardware area. (*Note: The instructor will designate if the student takes this course or the CCNA Network Security course).

Students will install, troubleshoot, and monitor network devices to maintain integrity, confidentiality and availability of data and devices. (*Note: The instructor will designate if the student takes this course or the Network Security Awareness course).

Internships, project-based instruction and additional industry certifications will be utilized in this course to reinforce skills obtained within any Business, Marketing, and Information Technology Career Major. Students will make final preparations for industry certifications as they master outlined competencies. Students may also undertake special projects, cross-train, or participate in workplace learning opportunities to enhance skills in accordance with industry demands.

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<tr>
<th>Career Major Total:</th>
<th>Theory</th>
<th>Lab</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Student:</td>
<td>700</td>
<td>350</td>
<td>1050</td>
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</table>

**Evaluation Policy:**

**Employability Grades (100 points per week; 30% of final grade)**

The employability skills grade is based on 20 points per day (which may include: attitude, attendance, safety, punctuality, cooperation, participation, clean-up, class preparation, school/classroom rules, and time management). Points will be deducted if these responsibilities are not met at the instructor's discretion. Students will be allowed to make up unearned
employability points for **excused** absences only. Full credit will be given for assignments/tests that have been made up (see Student Handbook).

**Test Grades (30% of final grade)**
- Test grades will be based on a 100-point scale.
- Test grades include written and/or skills tests.
- A test will be given for each unit of instruction.
- Tests are to be taken as a unit is completed.
- Tests must be completed within allotted time.

**Lab Grade (40% of final grade)**
- Virtual labs
- Physical labs

**Final Grade (9 Weeks Period)**
9-weeks grade will be calculated by averaging grades in each category and summing each category according to their assigned weight. Progress reports will be sent to home schools at six and twelve-week intervals each semester as required or requested. Grades are accessible online at [http://sonisweb.greatplains.edu/studsect.cfm](http://sonisweb.greatplains.edu/studsect.cfm)

**Grading Scale:**
The grading scale as adopted by the Board of Education is as follows:

- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 60 – 69
- F = Below 60
- W = Withdrawn
- I = Incomplete
- N = No Grade (Refer to Student Handbook)

**Make-Up Work Policy:**
**All Make-Up Work Is The Responsibility Of The Student.** Make-up work will be handled as specified in the Student Handbook. Please be sure to read and understand all student policies, especially make-up of assignments, tests and employability due to absences. Students should always arrange for any make-up work with the instructor as per the Student Handbook. Students should keep track of his or her progress and grades.

**Attendance Policy:**
For specific information related to attendance and tardiness refer to the Student Handbook. Students should keep a written record of their absences and tardiness.

**Course Requirements and Expectations:**
The general course requirements and expectations include:
- The Network Technician Associate career major is part of the Information Technology Cluster at the Great Plains Technology Center. Students are encouraged to continue their training in the additional career majors offered in Information Technology.
- Teaching methods are primarily lab and hands on activities with lecture
Career Tech Student Organizations (CTSOs) offer outstanding opportunities for development of leadership and social skills. CTSO membership is part of the curriculum. Therefore, all students are members of their CTSO and are expected to participate in CTSO activities.

All students must adhere to the policies and procedures outlined in the Great Plains Technology Center Student Handbook.

Students will work in groups of two or more assigned by the instructor and that lab partner(s) will remain constant for the assigned period of time.

Each student will need to have a notebook in class every day to record classroom lectures and lab notes.

Lab books are to be brought every day to class.

Students who need to make-up time will do the make-up work when the instructor is available and on appointment only.

**Student Behavior Includes:**

- Students and equipment safety will be the number one priority in the classroom.
- All students will wear appropriate safety apparel while working in computer lab and in the classroom.
- Closed toed shoes are to be worn every day. No flip flops allowed
- Food or drinks will not be allowed in the classroom or lab area.
- Ear and eye protection will be used when labs have need for them at all time.
- Students will not handle equipment without antistatic protection
- Any student who is approached by Great Plains Technology Center faculty, staff, or other student with a computer problem or repair request will refer the person to the instructor.
- Students will keep and enter daily notes in their notebook.
- Students are not to bring personal laptops tablets or other electronic devices unless the instructor has given prior approval.

**NOTE:** For additional information or questions regarding the GPTC School policies and procedures, please refer to the Student Handbook and/or the Instructor.

**Industry Alignments:**

- Cisco
- Microsoft

**Certification Outcomes:**

**Tier 1** – Certifications Recognized, Administered and/or Endorsed by Industry

- Certiport MTA: Networking Fundamentals (1150)
- Certiport MTA: Security Fundamentals (1718)
- Certiport MTA: Windows Server Administration Fundamentals (0695)
- Cisco: Interconnecting Cisco Networking Devices Part 1 (1114)
- Cisco: Interconnecting Cisco Networking Devices Part 2 (1125)
- MCSA: Installing and Configuring Windows Server 2012 (0213)
- MCSA: Administering Windows Server 2012 (0224)
- MCSA: Configuring Advanced Windows Server 2012 (0218)

**Tier 7** – National Career Readiness Certificate in Applied Mathematics, Locating Information and Reading for Information:

- Platinum Level – 6 or above in all three areas
- Gold Level – 5 or above in all three areas
• Silver Level – 4 or above in all three areas
• Bronze Level – 3 or above in all three areas

**CIP Code and SOC Code Crosswalk:**
• CIP Code – 11.0901
• SOC Code – 15-1143.00

**Instructional Materials and Supplies:**
*Students are required to purchase the following list of textbooks and/or supplemental materials. The prices listed are approximate and subject to change. All books should be current as of the class start date.*

**eLearning Curricula:**


**Textbooks:**

*Cisco Network Academy Introduction to Networks Course Booklet and Lab Manuals – CCNA 1*

*Cisco Network Academy Switching Essentials Course Booklet and Lab Manuals – CCNA 2*

*Cisco Network Academy Switching Essentials Course Booklet and Lab Manuals – CCNA 3*

*Cisco Network Academy Switching Essentials Course Booklet and Lab Manuals – CCNA 4*
Cisco Networking Academy CCNA Security Course


Additional Textbooks:


