

**GREAT PLAINS TECHNOLOGY CENTER  
COURSE OF STUDY**

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| <b><u>Career Cluster:</u></b>  | Information Technology (IT)   |
| <b><u>Career Pathway:</u></b>  | Network Systems (IT001)   |
| <b><u>Program:</u></b>         | Network and Computer Systems Administrator (IT0010115)  |
| <b><u>Program Hours:</u></b>   | Adult Students: 1050 Hours  |
| <b><u>Instructor:</u></b>      | Name: Nicholas Alexander<br>Office Number: (580) 351-6702<br>E-Mail Address: nalexander@greatplains.edu |
| <b><u>Academic Credit:</u></b> | Adult Students: Transcript  |
| <b><u>Prerequisites:</u></b>   | None  |

**Program Description:**

This program develops skills in the design, develop, management, and maintenance of enterprise environments that encompass integral network infrastructure components such as client stations, routers, switches, and firewalls. In addition, students learn to install, configure, and manage midsize to enterprise level desktop support environments. Comprehensive network security measures will be integrated throughout the course for purposes of hardening networks and end devices. Course curriculum will expose individuals to collaborative video/voice end devices and wireless devices. This program builds knowledge and technical skills required for obtaining eight industry certifications.

**Program Goals:**

Students enrolled in this program will obtain skills necessary to design, implement and troubleshoot an enterprise level Microsoft Windows Desktop Environment and its supporting network infrastructure. Exposure to Microsoft Windows Server 2012/2016 will also be present in the curriculum. Security training included in coursework will align with the Department of Defense's 8570.01-M standard to obtain the Comptia Security+ certification.

Students enrolled in this program 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 applications, and resourcefulness. Students will prepare for the Cisco CCENT, Cisco CCNA R&S, Comptia Security+, Microsoft Certified Solutions Associate in Windows 10, and Microsoft Technology Associate examinations.

Upon achieving the goals of this program, students will:

- Student will become competent in advance skills for route/switch networks, enterprise desktop environments, and fundamental skills in Security and Windows Server.
- Students will become qualified for further related education and/or entry into the job market
- Student will demonstrate competence in their knowledge and technical skills.
- Students will demonstrate critical thinking and practical troubleshooting techniques in the field of networking infrastructure and enterprise desktop management.
- Students will exhibit professionalism.

- Students will demonstrate communication skills necessary to effectively interact with clients and other Information Technology professionals

**Related Career Opportunities:**

- Junior & Senior Network Systems Engineer
- Senior Desktop Support Technician
- Junior Systems Administrator
- Network Administrator
- Entry Security Analyst

**Program Objectives:**

After successful completion of this program, the student will be able to:

- Understand network hardware, routers, switches, wireless, and telephony for Local and wide area networks.
- Demonstrate proper care, maintenance and use of networking software, tools and equipment.
- Perform enterprise coverage management of network systems
- Implementing best practice for core networking devices in the environment such as Firewalls, Intrusion Prevention, and Virtual Private Networks.
- Install and maintain proprietary network operating systems and Windows based operating systems for primarily clients.
- Advise users on operating systems operation and deliver decisive and simple software solutions to customer needs.

**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.

| <b><u>Course #</u></b> | <b><u>Course Name</u></b>  | <b><u>ADT</u></b> | <b><u>ADL</u></b> | <b><u>Total</u></b> |
|------------------------|--|-------------------|-------------------|---------------------|
| <b>BT00264</b>         | <b>Windows Operating System Fundamentals (8250)</b>  | <b>27</b>         | <b>13</b>         | <b>40</b>           |
|                        | The Microsoft Technology Associate (MTA) Windows Operating System Fundamentals course certification validates basic knowledge needed to begin a career using Microsoft technologies. Candidates for course should understand fundamental Windows 7 operating system concepts including installing, upgrading, configuring and maintaining systems; managing applications; managing files and folders; and managing devices.  |                   |                   |                     |
| <b>BT00192</b>         | <b>Network Security Awareness (8223)</b>   | <b>53</b>         | <b>27</b>         | <b>80</b>           |
|                        | Students will demonstrate knowledge and competency in PC, Server, and Internet Security. Students will utilize these skills in preparation for entry positions related to the maintenance of computers and computer-related equipment through theory and project-based learning, textbook assignments, and Internet research.  |                   |                   |                     |
| <b>BT00052</b>         | <b>Network and Routing Fundamentals <small>Routing &amp; Switching I</small> (8125)</b>  | <b>167</b>        | <b>83</b>         | <b>250</b>          |
|                        | Students will cover authorized Cisco Networking Academy curriculum pertaining to the basics of networking for routed and switched networks. The first two courses of the Cisco Academy will lead to taking of the Cisco Certified Technician (640-692) certification. This is a pre-requisite certification required to attempt/obtain the Cisco Certified Network Associate Routing & Switching offered in the third and fourth course of the Cisco Academy taught in Routing, Switching, and Wan Technologies. |                   |                   |                     |

**BT001GP Installing and Configuring Windows 10** **80 40 120**

This course provides students with the knowledge and skills to implement Windows from installation through to post-installation configuration in enterprise environments. Students will also learn about the configuration of Windows 10 networking settings, disk storage and remote access management. After the completion of the installation and configuration phases of the training, the course focuses on the management and maintenance of Windows 10 to include analyses of Event Viewer logs, PC performance and the integrated virus protection application, Defender. Training in this course will prepare students to take the Microsoft certification exam.

**BT00018 Routing, Switching, and WAN Technologies** Routing & Switching II (8126) **167 83 250**

Students will cover curriculum pertaining to intermediate routing and switching technologies that operate over both Local Area Networks and extend to more advanced wide area network technologies. Coursework is the second half of four course leading to the Cisco Certified Network Associate in Routing & Switching (CCNA R+S). Training in this course will prepare students to take the Cisco Certified Network Associate (CCNA 200-301) certification exam.

**BT002GP Configuring Windows Device** **80 40 120**

This course provides students with the knowledge and skills to manage windows identity, plan desktop/device deployment, utilize the Intune application, and configure windows networking settings. Students will also learn how to manage data access, data protection, remote access, applications, Windows updates and OS recovery. Training in this course will prepare students to take the Microsoft certification exam.

**BT00257 Windows Server Administration Fundamentals (8244)** **27 13 40**

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. This course will align and lead to taking the Microsoft Technology Associate Server Fundamentals (98-365) industry certification.

**BT00110 Program Capstone (8106)** **100 50 150**

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 program. Students will make final preparations for industry certifications as they master outlined competencies. Students will select from various project options to finalize portfolios that highlight skills and certifications. Students may also undertake special projects, cross-train, or participate in workplace learning opportunities to enhance skills in accordance with industry demands. Training in this course will prepare students to take the CCNP 300-401 certification exam.

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|                       |               |            |              |
|-----------------------|---------------|------------|--------------|
| <b>Program Total:</b> | <b>Theory</b> | <b>Lab</b> | <b>Total</b> |
| Adult Student:        | 701           | 349        | 1050         |

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## **Evaluation Policy:**

### **Employability Grades (100 points per week; 20% 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 (35% 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 (45% 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 on-line at <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 program is part of the Information Technology Cluster at the Great Plains Technology Center. Students are encouraged to continue their training in the additional programs offered in Information Technology.
- Teaching methods are lecture, lab and hands on activities.
- 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.
- 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
- Comptia
- Wireshark

### **Certification Outcomes:**

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

- Certipoint MTA: Networking Fundamentals – 98-366 (1150)
- Certipoint MTA: Security Fundamentals – 98-367 (1718)
- Cisco: Interconnecting Cisco Networking Devices Part 1 – 100-105 (1114)
- Cisco: Interconnecting Cisco Networking Devices Part 2 – 200-105 (1125)
- Cisco: Certified technician 640-692 (1114)
- Cisco: Certified Network Associate (CCNA) 200-301 (1125)
- Cisco: Certified Network Professional (CCNP) 300-401

### **CIP Code and SOC Code Crosswalk:**

- CIP Code – 11.0901
- SOC Code – 15-1143

### **OCAS program code:**

- 9547 – Networking (first year)
- 9548 – Networking (second year)

### **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:**

Empson, Scott. CCNA Routing and Switching Portable Command Guide. 4<sup>th</sup> ed. 978-1587205880. Indianapolis: Cisco Press, 2013. (\$26.00)