HYT 310 – Network+

FALL 2014 SYLLABUS

Instructor Contact Information	Course Information
Instructor Name: Telephone: Email: Office Hours:	**Start Date:** TBD **Completion Date:** TBD **Schedule:** M-F (8 hours daily) **Location:** Largo Campus **Course Contact Hours:** 55.5 **Course Length:** 8 days

Lecture:

Laboratory:

E-Module:

Prerequisites:
None

PART 1: COURSE INFORMATION

Course Description

The Network Plus certification confirms a technician's critical knowledge of media and topologies, protocols and standards, network implementation and network support. The exams also cover domains such as security, safety and environmental issues and communication and professionalism.

Students will learn the knowledge and skills needed to install, manage and troubleshoot a variety of networks on any platform. Our Network Plus training course follows the CompTIA objectives, ensuring you receive the training and knowledge needed to succeed.

Required Textbook

CompTIA Network+ Certification All-in-One Exam Guide, 5th Edition (Exam N10-005) / Edition 5
ISBN 978-0-07-178922-7
MHID 0-07-178922-7

Other Required Course Materials

An introductory course in a Windows operating system, or equivalent skills and knowledge, is required. Such as: Windows 7 or Windows 8.1 CompTIA A+ certification, or the equivalent skills and knowledge, is helpful but not required.

Network Tool Kit
Box Cat5e Cable
Router
Switch
Wireless Access point

Required Technology Accounts

To be successful in this course, students must have access to the following technology accounts:

- PGCC Owl Mail Email Account
- PGCC Blackboard Account
- TestOut Account
- PGCC NetLab Account
- Broadblast Account
- Mobileblast Account

Details on how to setup and access the technology accounts for this course can be found in the Student Handbook for this course.

Instructor Contact

The best way to reach your instructor via email and telephone.

Course Structure

This course is designed to provide a hybrid experience, including a blend of face-to-face and online activities.

Face-to-face sessions will be held on the Largo campus location TBD. The course will meet on M-F 8am to 4:30pm. Face-to-face activities will consist of classroom lecture, group activities, and physical labs.

Online sessions will be a blend of self-pace, group, and instructor guided activities using interactive Blackboard modules, Testout.com, NetLab, Broadblast, and online a Mobile Application. Online activities will consist of Simulations, lab exercises, interactive eLearning Modules, practice exams, emails and Broadblast.

Technology Requirements
Computer/internet access and mastery of basic computer skills are considered to be the student's responsibility. To be successful in this course, students must have access to:

- A Pentium-class or Mac computer with at least 256 MB RAM
- Broadband (DSL, Cable, FIOS) is highly recommended
- An Internet Service Provider (ISP)
- Your PGCC Owl Mail student email address
- Firefox version 22 (or higher), Chrome version 30 (or higher), or Internet Explorer 8 (or higher)
- Microsoft Word (word processing software)
- Video player and speakers for multimedia content

Technical Support
For technical support in this course, contact the Help Desk at 301-546-0637, Bladen Hall, Room 106.

Assignment Submission
Assignments for this course will be submitted online with Blackboard, Testout.com, Netlab, the online Mobile application. Assignments must be submitted by the stated deadline or special permission must be requested from instructor before the due date. Extensions will not be given beyond the next assignment except under extreme circumstances.

Disability Support Services
Students requesting academic accommodations are required to contact the college's Disability Support Services Office (B-124) or call (301) 546-0838 (voice) or (301) 546-0122 (TTY) to establish eligibility for services and accommodations. Students with documented disabilities should discuss the matter privately with their instructors at the beginning of the semester and provide a copy of the completed Student/Faculty Accommodation Form.

PART 2: COURSE OBJECTIVES

Networking Concepts
- Compare the layers of the OSI and TCP/IP models.

- Classify how applications, devices, and protocols relate to the OSI model layers.
- Explain the purpose and properties of IP addressing.
- Explain the purpose and properties of routing and switching.
- Identify common TCP and UDP default ports.
- Explain the function of common networking protocols.
- Summarize DNS concepts and its components.
- Given a scenario, implement the following network troubleshooting methodology:
- Identify virtual network components.

Network Installation and Configuration
- Given a scenario, install and configure routers and switches.
- Given a scenario, install and configure a wireless network.
- Explain the purpose and properties of DHCP.
- Given a scenario, troubleshoot common wireless problems.
- Given a scenario, troubleshoot common router and switch problems.
- Given a set of requirements, plan and implement a basic SOHO network.

Network Media and Topologies
- Categorize standard media types and associated properties.
- Categorize standard connector types based on network media.
- Compare and contrast different wireless standards.
- Categorize WAN technology types and properties.
- Describe different network topologies.
- Given a scenario, troubleshoot common physical connectivity problems.
- Compare and contrast different LAN technologies.
- Identify components of wiring distribution.

Network Management
- Explain the purpose and features of various network appliances.
- Given a scenario, use appropriate hardware tools to troubleshoot connectivity issues.
- Given a scenario, use appropriate software tools to troubleshoot connectivity issues.
- Given a scenario, use the appropriate network monitoring resource to analyze traffic.
- Describe the purpose of configuration management documentation.

Network Security
- Given a scenario, implement appropriate wireless security measures.
- Explain the methods of network access security.
- Explain methods of user authentication.
- Explain common threats, vulnerabilities, and mitigation techniques.
- Given a scenario, install and configure a basic firewall.

- Categorize different types of network security appliances and methods.

By the end of this course, students who successfully complete classroom and online activities will be able to:
- Compare the layers of the OSI and TCP/IP models.
- Classify how applications, devices, and protocols relate to the OSI model layers.
- Explain the purpose and properties of IP addressing.
- Explain the purpose and properties of routing and switching.
- Identify common TCP and UDP default ports.
- Explain the function of common networking protocols.
- Summarize DNS concepts and its components.
- Identify virtual network components.
- Install and configure routers and switches.
- Install and configure a wireless network.
- Explain the purpose and properties of DHCP.
- Troubleshoot common wireless problems.
- Troubleshoot common router and switch problems.
- Plan and implement a basic SOHO network.
- Categorize standard media types and associated properties.
- Categorize standard connector types based on network media.
- Compare and contrast different wireless standards.
- Categorize WAN technology types and properties.
- Describe different network topologies.
- Troubleshoot common physical connectivity problems.
- Compare and contrast different LAN technologies.
- Identify components of wiring distribution.
- Explain the purpose and features of various network appliances.
- Use appropriate hardware tools to troubleshoot connectivity issues.
- Use appropriate software tools to troubleshoot connectivity issues.
- Use the appropriate network monitoring resource to analyze traffic.
- Describe the purpose of configuration management documentation.
- Explain different methods and rationales for network performance optimization.
- Implement appropriate wireless security measures.
- Explain the methods of network access security.
- Explain methods of user authentication.
- Explain common threats, vulnerabilities, and mitigation techniques.
- Install and configure a basic firewall.
- Categorize different types of network security appliances and methods.

Part 3: Grading Policy

Teaching Strategies

o Lecture/Presentation/Discussion/Demonstration/Q & A's

o Testout.com Network+ Pro

o Lab Activities

o PGCC Netlab Activities

o Blackboard E-Module Activities

Homework/Out of Class Time Summary

Reading:	**10** Hours per week
E-Modules:	**5** Hours per week
Test Preparation:	**4** Hours per week

Graded Course Activities	
Attendance	10%
PGCC Blackboard	10%
PGCC NetLab Completion	10%
TestOut Completion	15%
TestOut Section Exams	10%
TestOut Practice Exams	25%
Class Examinations	20%
TOTAL	100%

Graded Point Value		
Grade	**Percentage**	**Quality Points**
A	95 to 100	4.0
A-	90 to 94	3.7
B+	87 to 89	3.3
B	83 to 86	3.0
B-	80 to 82	2.7
C+	78 to 79	2.5
C	73 to 77	2.3
C-	70 to 72	2.0
Fail	69 or below	0.0
Total	100%	

PART 2: COURSE OBJECTIVES

By the end of this course, students who successfully complete classroom and online activities will be able to:

Operational Procedures
- o Given a scenario, use appropriate safety procedures
- o Explain environmental impacts and the purpose of environmental controls
- o Given a scenario, demonstrate proper communication and professionalism
- o Explain the fundamentals of dealing with prohibited content/activity

PC Hardware
- o Configure and apply BIOS settings
- o Differentiate between motherboard components, their purposes and properties
- o Compare and contrast RAM types and features
- o Install and configure expansion card
- o Install and configure storage devices and use appropriate media
- o Differentiate among various CPU types and features and select the appropriate cooling method
- o Compare and contrast various connection interfaces and explain their purpose
- o Install an appropriate power supply based on a given scenario
- o Evaluate and select appropriate components for a custom configuration, to meet customer specifications or needs
- o Given a scenario, evaluate types and features of display devices
- o Identify connector types and associated cables
- o Install and configure various peripheral devices

Networking
- o Identify types of network cables and connectors
- o Categorize characteristics of connectors and cabling
- o Explain properties and characteristics of TCP/IP
- o Explain common TCP and UDP ports, protocols and their purpose
- o Compare and contrast wireless networking standards and encryption type
- o Install, configure, and deploy a SOHO wireless/wired router using appropriate settings
- o Compare and contrast Internet connection types and features
- o Identify various types of network
- o Compare and contrast network devices, their functions and features
- o Given a scenario, use appropriate networking tool

Laptop
- o Install and configure laptop hardware and components
- o Compare and contrast the components within the display of a laptop
- o Compare and contrast laptop features

Printers

- o Explain the differences between the various printer types and summarize the associated imaging process
- o Given a scenario, install and configure printers
- o Given a scenario, perform printer maintenance
- o Operational Procedures
- o Given a scenario, use appropriate safety procedures
- o Explain environmental impacts and the purpose of environmental controls
- o Given a scenario, demonstrate proper communication and professionalism
- o Explain the fundamentals of dealing with prohibited content/activity

Part 3: Grading Policy

Teaching Strategies

o Lecture/Presentation/Discussion/Demonstration/Q & A's

o Testout.com PC Pro A+ and CompTIA 220-801

o PGCC Hardware Lab Activities

o PGCC Netlab Activities

o Blackboard E-Module Activities

Homework/Out of Class Time Summary

Reading: **1-5** Hours per week
E-Modules: **1-5** Hours per week
Test Preparation: **1-5** Hours per week

Graded Course Activities	
Attendance	10%
PGCC Blackboard Module Tests	10%
PGCC NetLab Completion	10%
Testout.com Completion	10%
Testout.com Section Exams	20%
Testout.com 220-801 Practice Exams	30%
Class and Hardware Lab Participation	10%
TOTAL	100%

Graded Point Value		
Grade	**Percentage**	**Quality Points**
A	95 to 100	4.0
A-	90 to 94	3.7
B+	87 to 89	3.3
B	83 to 86	3.0
B-	80 to 82	2.7
C+	78 to 79	2.5
C	73 to 77	2.3
C-	70 to 72	2.0
Fail	69 or below	0.0
Total		100%

Description of Graded Course Activities

Class Examinations
There will be a short examination every day of class. This grade will be 20% of the student grade.

Class Examinations PGCC NetLab Completion
The completion all assigned Netlab will be 10% of the Grade. Each student will submit a screenshot showing the completion of each assigned Netlab Exercise.

PGCC Blackboard Module Test
At the end of each Blackboard Module there will be a module test. The average of the individual module test score will be 10% of the grade.

TestOut Section Examinations
The average score of all the TestOut Section examinations will be 10% of the study Grade.

Attendance
Daily in class attendance will be recorded on a signing sheet and will account for 10% of the Grade.

Practice Exams
The practice examination at the end of TestOut Modules will be 25% of the Grade

Part 4: Course Policies

Classroom Policy

Our goal is to build a respectful learning and work environment that allows for positive communication and teamwork. To promote this all students must abide by academic policies related to attendance, behavior and professional conduct as published in the current institutional catalog.

Online Netiquette Rules

Rules for interacting with others online:

- Unless directed otherwise by your instructor, you should write email and discussion board postings in standard written English (the kind of language you would expect to find in a workplace). Messages should be short and to the point.
- Make sure that you use a meaningful subject line for email and discussion messages so that your readers will have a clear idea of who sent the message and what the message contains.
    - o Good example - "Subject: XXX 000, J Smith, My feedback on the Taylor article."
    - o Poor example - "Subject: Interesting Stuff."
- Use all capital letters sparingly. Capitalize words only to highlight an important point or to distinguish a title or heading. Capitalizing whole words that are not titles is generally seen as SHOUTING and is often offensive to the reader.
- Be courteous about what you say about others in an electronic format. Never say anything in an email or on a discussion board that you would not want to see printed in the newspaper.
- When reacting to someone else's message, address the ideas, not the person.
- Be careful when using sarcasm and humor. Without face-to-face communications your joke may be viewed as criticism.
- Be respectful of other, diverse opinions. Don't assume that everyone shares the same views or background.
- Don't share copyrighted materials. Most things on the Internet are NOT "fair use." Instead of copying a relevant article or web page, provide a link to the material along with a short description of its significance. *(Netiquette rules based on materials developed by World Campus, Penn State)*

Technology Accessibility Statements

Blackboard is fully committed to ensuring that the platform contains no barriers for users with disabilities and is both usable and accessible by everyone, regardless of age, ability, or situation. Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government. For full Blackboard accessibility information, visit
https://help.blackboard.com/en-us/Learn/9.1_2014_04/Administrator/030_Accessibility .

TestOut does not claim to be fully compliant for 508 and ADA guidelines. All the videos include closed captioning and video transcripts to accommodate any needs for the hearing impaired. However, TestOut has not found a feasible way to deliver our labs to work for the visually impaired. If a student needs accommodations while using the TestOut system, please contact the College's Disability Support Services office in Bladen Hall, Room 124 or via phone at 301-546-0838.

The **BroadBlast,** Inc. system is Section 508 compliant and ADA compliant ensuring equal accessibility to all. The system automatically detects TTY/TDD devices, converts the speech into a text version of the message and sends the converted message over a normal phone line to the individuals with TTY/TDD devices. Individuals with TTY/TDD devices and their numbers do not need to be pre-designated by the client. BroadBlast offers additional features that are included which makes communicating with the hearing impaired easy; which include SMS Text Messaging, Customized Caller ID, Email Messaging and MMS Messaging.

Technology Privacy Statements

This course requires students to create accounts on external websites. Below are links to the privacy policy for each external website used in this course that requires a username and password. Please read and use the privacy information to safeguard your accounts.

Blackboard is committed to protecting the privacy of its users. Because Blackboard gathers certain types of information about the users of the Services, we believe you should fully understand the terms and conditions surrounding the use of the information we collect. The following discloses our information gathering and dissemination practices for the Services: http://www.blackboard.com/Footer/Privacy-Policy.aspx

TestOut will not sell, share, or otherwise distribute your personal data to third parties except as provided in this Privacy Policy. There are two instances in which data collected from you may be transferred to a third party. The first is in the event that the business of this site and the customer data connected with it is sold, assigned or transferred, in which case we would require the buyer, assignee or transferee to treat personal data in accordance with this Privacy Policy. The second instance in which personal data may be disclosed to a third party is if we are required to do so because of an applicable law, court order or governmental regulation, or if such disclosure is otherwise necessary in support of any legal or criminal investigation.

Broadblast's mission in implementing this privacy policy is to first, protect your information, and second, use it only to provide you with the highest quality, most personalized information services available – exclusively on your behalf. The privacy and security of your information is of paramount importance to us. That is why we never sell, lease, share, rent, or barter ANY of your personal information to anyone outside of BroadBlast, Inc., EVER. We value the trust you place in BroadBlast. That's why we're committed to providing a website with a secure environment and unparalleled customer service.