

PLANNED COURSE CURRICULUM GUIDE

CISCO IT Essentials™ I: PC Hardware & Software v3.1

- I. **COURSE DESCRIPTION AND INTENT:** IT Essentials™ I is sponsored by the Hewlett-Packard Company. This curriculum presents and in-depth exposure to computer hardware and operating systems, as well as maintenance and safety issues. Through hands-on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included.

The curriculum is taught online, with lessons, work sheets, labs, study guides, and chapter tests available to the students in fourteen separate modules on the CISCO Academy Network website: <http://cisco.netacad.net>

This course is an excellent tool for preparation in a computer technician career or continuing study in a CISCO Networking course. This course also prepares students for the CompTIA A+ Certification Part I Exam.

II. **INSTRUCTIONAL TIME:**

Class Periods: 180 days; 120 clock hours
Length of Class Periods (minutes): 42
Length of Course: One Full School Year
Unit of Credit: 1.00
Course Weight: 1.04

A GREAT PLACE TO LEARN!



PINE GROVE AREA SCHOOL DISTRICT
PINE GROVE, PENNSYLVANIA

PINE GROVE AREA SCHOOL DISTRICT
Pine Grove, Pennsylvania 17963

PLANNED COURSE ADAPTATIONS/MODIFICATIONS
Introduction

The instructional adaptations that follow are provided as suggestions to be implemented with all students, particularly with those in need of special education services including the gifted. This listing is in no way intended to be exhaustive. Rather, it is reflective of some major considerations in the area of curriculum adaptations/modifications.

These instructional adaptations will work with any student, but are especially beneficial to those in need of learning support. Some may argue that these modifications are simply *good teaching*. Indeed, modifications of this type do represent good teaching. These principles of good teaching become instructional modifications whenever: (1) certain students in a particular class require such modifications *above and beyond* what is typically required by *most* students in that class and (2) without these modifications, these same students would not succeed.

Note: Standards and performance expectations listed in this curriculum is based on the National Business Education Standards (NBEA). As of the date of the curriculum writing, the PA Department of Education's standards for Business and Vocational Education have not been finalized.

The NBEA *Information Technology* Standards are cross-referenced with the PA *Science and Technology* Academic Standards in the curriculum.

PREFACE

Users and information seekers should familiarize themselves with the purpose and terminology of this **Planned Course Curriculum Guide (PCCG)**. We suggest that you first read the following:

- **PCCG PURPOSE AND INTENT**
- **PCCG DEFINITIONS**

The PCCG specifies the unit lesson outcome, essential content, standards, activities, resources, and evaluation of student performance. This sector provides the means to initiate the learning activities to attain the program goal as identified in the course description and intent.

The standards and outcomes are minimal expectations; further embellishment of the course is discretionary with the instructor depending upon the capability of the students.

This PCCG is designed as an ACTIVE document capable of technological modification as required.

The instructional delivery of this curriculum is quality controlled through the lesson plan development of the teacher.

PLANNED COURSE CURRICULUM GUIDE (PCCG) PURPOSE AND INTENT

The Planned Course Curriculum Guide (PCCG) is a multi-purpose document:

- All staff, particularly new teachers, can understand instructional expectations through the WRITTEN curriculum
- A continuing district-wide instructional process and scope and sequence of subject matter are enhanced. The WRITTEN curriculum is delivered through the TAUGHT curriculum (instructional content and learning activities) and is evaluated through the TESTED curriculum (expected levels of student achievement - learning outcomes)
- Priority student-centered outcomes are identified and attained through suggested learning activities and content designed to help insure a balanced and comprehensive basic curriculum
- Essential content and course standards provide an efficient basis for selecting appropriate instructional materials and resources
- Staff development areas for curriculum improvement are provided
- The PCCG conforms with current Pennsylvania Department of Education curriculum regulations and serves the dual feature of providing both an administrative document and an instructional guide
- Content and subject format remain flexible and adaptable to modification - an "active" document
- Special Pennsylvania Department of Education (PDE) legislation is identified
- Parents and students are provided with an overview of the instructional program and each course in particular

PLANNED COURSE CURRICULUM GUIDE (PCCG) DEFINITIONS

- **Course Description and Intent**: a brief overview of the course and program goals
- **Instructional Time**: frequency of class meetings and time/appropriate credit at the secondary level
- **Special Notes**: emphatic features or highlights and identification of Department of Education mandates found in the course
- **Unit Lesson Outcome**: describes the knowledge, skills, attitudes, student performance behaviors and areas of study that have been identified as appropriate to help the student attain the rigorous standards of a quality education
- **Teaching-Learning Activities**: suggested activities designed to help all students achieve the learning outcomes and standards
- **Standards**: statements establishing the minimal knowledge, skills, performance behaviors, and essential learning (content) a student must attain. A standard defines what students should know and be able to do
- **Expected Levels of Achievement (Learning Outcomes)**: what students will be expected to do as a result of the application of teaching-learning activities and content
- **Evaluation Criteria (Actual Level of Attainment)**: student performance level achieved and measured through specified evaluation criteria

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # II: Computer Architecture: Describe current and emerging computer architecture; configure, install, and upgrade hardware; diagnose and repair hardware problems.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.C Evaluate the computer operations and concepts as to their effectiveness to solve specific problems.</p>	<p>3.7.12.C -- I. Module I: Information Technology Basics</p> <p>A. Describe the different computer systems, programs, and computer types. B. Identify and navigate the Windows Desktop environment. C. Use the features of Microsoft Windows, including creating shortcuts and adjusting display properties. D. Define relevant computer terminology that is used in digital math. E. Perform number conversions, including decimal, binary, and hexadecimal.</p>	<p>3.7.12.C -- Worksheets: 1.3.8 Windows Navigation & Settings 1.5.9 Number Systems Exercises 1.6.6 Lab Safety Checklist</p> <p>Labs: 1.3.8 Getting to Know Windows 1.5.3 Boolean Operations 1.5.9 Converting Numbers Overview</p> <p>Module One Study Guide Packet</p> <p>Module One Presentation Guided Notes</p>	<p>3.7.12.C -- CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module One PPT Presentation & Guided Notes & Key</p> <p>Module One Pre-test, Post-test, & Keys</p> <p>Module One Instructor'</p> <p>CISCO Academy Website</p>

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.C Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p>	<p>3.6.12.C --</p> <p>I. Module II: How Computers Work</p> <p>A. Define and understand the computer's four basic functions: input, processing, output, and storage.</p> <p>B. Understand the actions of the boot sequence, which initializes and tests the system hardware.</p> <p>C. Distinguish the features and functions of the hardware components that make the computer work.</p> <p>D. Identify the components of portable computers as they relate to their desktop counterparts. Understand the system resources including IRQs, CMA, and I/O.</p>	<p>3.6.12.C --</p> <p>Worksheets:</p> <ul style="list-style-type: none"> 2.3.2 PC Power Supply 2.3.8 BIOS/ROM 2.3.9 Expansion Slots 2.4.2 RAM & RAM Sockets 2.5.2 Video Cards 2.7.1 Floppy Drive 2.7.2 Hard Drive Identification 2.7.3 CD-ROM Identification <p>Labs:</p> <ul style="list-style-type: none"> 2.3.6 Motherboard Identification 2.3.8 Identifying ROM & BIOS Chips 2.3.9 Identifying Computer Expansion Slots 	<p>3.6.12.C --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Two PPT Presentation & Guided Notes & Key</p> <p>Module Two Pre-test, Post-test, & Keys</p> <p>Module Two Instructor's Unit</p> <p>CISCO Academy Website</p>

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.C Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p>	<p>3.6.12.C –</p> <p>Activities: Module Two Presentation & Lecture Module Two Online Reading</p>	<p>3.6.12.C --</p> <p>Labs: 2.4.2 Identifying RAM & RAM Sockets 2.5.2 Video Card Identification</p> <p>Module Two Study Guide Packet</p> <p>Module Two Presentation Guided Notes Module Two Notebook Module Two Online Quiz Module Two Pre-Quiz & Pre-test Module Two Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p>	<p>3.6.12.C --</p> <p>Module Two Notebook Handouts: BIOS/Boot Sequence Hardware Map PC vs. Laptop Configuration Hardware Notebook Outline IRQ Listing Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p>

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.C Evaluate the computer operations and concepts as to their effectiveness to solve specific problems.</p>	<p>3.7.12.C --</p> <p>I. Module III: Assembling a Computer</p> <p>A. Understand the ESD and safety precautions that must be taken prior to the assembly of the computer.</p> <p>B. Create an inventory to ensure that the components required to assemble the computer are available.</p> <p>C. Prepare the motherboard and its components for installation.</p> <p>D. Install and secure the floppy drive, hard drive, and CD-ROM drive in the computer case.</p> <p>E. Install and secure the video card in the computer case.</p> <p>F. Perform the final steps and boot the system.</p> <p>G. Determine the BIOS configuration and CMOS setup, and remedy POST errors.</p>	<p>3.7.12.C --</p> <p>Worksheets:</p> <p>3.2.2 Inventory Checklist</p> <p>3.3.4 Power Supplies</p> <p>3.9.1 What is BIOS?</p> <p>Labs:</p> <p>3.3.4 Computer Case & Power Supply</p> <p>3.5.3 Motherboard Installation</p> <p>3.6.4 Floppy, Hard, CD-ROM , and DVD Drives Installation</p> <p>3.7.1 Video Card Installation and System Booting</p>	<p>3.7.12.C --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Three PPT Presentation & Guided Notes & Key</p> <p>Module Three Pre-test, Post-test, & Keys</p> <p>Module Three Instructor's Unit</p> <p>CISCO Academy Website</p>

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.E. Assess the effectiveness of computer communications systems.</p>	<p>3.7.12.C & 3.7.12.E. -- I. Module IV: Operating System Fundamentals</p> <p>A. Explain the three basic elements that make up the major design components of any operating system.</p> <p>B. Understand the components and functions of the operating system</p> <p>C. Modify DOS commands with switches.</p> <p>D. Create a DOS boot disk, which is used to boot a computer to the DOS prompt.</p> <p>E. Use system memory tools to help simplify the task of placing TSRs into upper memory.</p> <p>F. Resolve memory conflicts that can lead to general protection faults.</p>	<p>3.7.12.C & 3.7.12.E. -- Worksheets: 4.1.3 Operating System Fundamentals 4.2.3 DOS Commands 4.2.7 DOS</p> <p>Labs: 4.2.3 Basic DOS Commands 4.2.4 Creating a DOS Boot Disk</p>	<p>3.7.12.C & 3.7.12.E. -- CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Four PPT Presentation & Guided Notes & Key</p> <p>Module Four Pre-test, Post-test, & Keys</p> <p>Module Four Instructor's Unit</p> <p>CISCO Academy Website</p>

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ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.E. Assess the effectiveness of computer communications systems.</p>	<p>3.7.12.C & 3.7.12.E. --</p> <p>I. Module VII: Windows XP Operating System</p> <p>A. Understand the different versions of Windows XP OS.</p> <p>B. Determine the hardware requirements for the installation.</p> <p>C. Review the installation of Windows XP.</p> <p>D. Compare the features of Windows XP to previous versions of Windows.</p> <p>E. Evaluate the requirements for upgrading and creating a dual-boot environment.</p>	<p>3.7.12.C & 3.7.12.E. --</p> <p>Worksheets: None</p> <p>Labs: 7.3.2 Installation Demonstration of Windows XP OS 7.5.2 Using Simple File Sharing for Sharing Files 7.5.3 Remote Desktop Connection 7.5.3 Internet Connection Firewall 7.5.5 Using Windows XP Start Menu and Windows Explorer</p>	<p>3.7.12.C & 3.7.12.E. --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Seven PPT Presentation & Guided Notes & Key</p> <p>Module Seven Pre-test, Post-test, & Keys</p> <p>Module Seven Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # III: Operating Systems, Environments, and Utilities: Identify, evaluate, select, install, use, upgrade, customize, and diagnose and solve problems with various types of operating systems, environments, and utilities.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.E. Assess the effectiveness of computer communications systems.</p> <hr/> <p>All Standards & Performances up to this point in school Year</p>	<p>3.7.12.C & 3.7.12.E. --</p> <p>Activities: Module Seven Presentation & Lecture Module Seven Online Reading</p> <hr/> <p>All objectives to this point in school year.</p>	<p>3.7.12.C & 3.7.12.E. --</p> <p>Module Seven Study Guide Packet Module Seven Presentation Guided Notes Module Seven Notebook Module Seven Online Quiz Module Seven Pre-Quiz & Pre-test Module Seven Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p> <hr/> <p>Modules 1-7 Midterm</p>	<p>3.7.12.C & 3.7.12.E. --</p> <p>Module Seven Notebook Handouts: ERD Flowchart Windows XP Versions Comparison Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p> <hr/> <p>CISCO IT Essentials™ I Midterm & Key</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # II: Computer Architecture: Describe current and emerging computer architecture; configure, install, and upgrade hardware; diagnose and repair hardware problems.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.D Evaluate the effectiveness of computer hardware to solve specific problems.</p> <p>3.7.12.E. Assess the effectiveness of computer communications systems.</p>	<p>3.7.12.D & 3.7.12.E. --</p> <p>I. Module VIII: Multimedia Capabilities</p> <p>A. Understand the hardware requirements for multimedia.</p> <p>B. Install or upgrade the video and sound cards.</p> <p>C. Configure the video capture and video capture boards.</p> <p>D. Uninstall the hardware components and remove associated drivers.</p> <p>E. Install and configure the CD-ROM and DVD drives.</p> <p>F. Understand the differences between recordable and rewriteable CDs and DVDs.</p>	<p>3.7.12.D & 3.7.12.E. --</p> <p>Worksheets:</p> <p>8.1.6 Multimedia Devices</p> <p>8.2.5 Video Accelerators</p> <p>8.3.3 Sound Cards</p> <p>8.4.7 CD and DVD Terminology</p> <p>Labs:</p> <p>8.2.3 Upgrading the Video Accelerator</p> <p>8.3.4 Sound Card Installation</p>	<p>3.7.12.D & 3.7.12.E. --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Eight PPT Presentation & Guided Notes & Key</p> <p>Module Eight Pre-test, Post-test, & Keys</p> <p>Module Eight Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # II: Computer Architecture: Describe current and emerging computer architecture; configure, install, and upgrade hardware; diagnose and repair hardware problems.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.7.12.D Evaluate the effectiveness of computer hardware to solve specific problems.</p> <p>3.7.12.E. Assess the effectiveness of computer communications systems.</p>	<p>3.7.12.D & 3.7.12.E. --</p> <p>Activities: Module Eight Presentation & Lecture Module Eight Online Reading</p>	<p>3.7.12.D & 3.7.12.E. --</p> <p>Module Eight Study Guide Packet Module Eight Presentation Guided Notes Module Eight Notebook Module Eight Online Quiz Module Eight Pre-Quiz & Pre-test Module Eight Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p>	<p>3.7.12.D & 3.7.12.E. --</p> <p>Module Eight Notebook Handouts: CD and DVD Label Descriptions Sound Card Specifications Video Card Specifications Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XI: Communications and Networking Infrastructures: Develop the skills to design, deploy, and administer networks and communications systems.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ©</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.A Apply advanced tools, materials, and techniques to answer complex questions.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C . --</p> <p>I. Module IX: Advanced Hardware Fundamentals for Servers</p> <p>A. Install and configure hard drives in a TAED array, external peripherals, external drive subsystems, and processors for a server.</p> <p>B. Upgrade adapters, internal and external devise, system-monitoring agents, and service tools as they relate to a server.</p> <p>C. Increase memory to improve network server performance.</p> <p>D. Document the configuration for upgrading and troubleshooting purposes.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C . --</p> <p>Worksheets:</p> <p>9.1.4 RAID Arrays</p> <p>9.4.3 Adding Processors</p> <p>Labs:</p> <p>9.1.2 Basic Disk to Dynamic Disk Conversion</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C . --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Nine PPT Presentation & Guided Notes & Key</p> <p>Module Nine Pre-test, Post-test, & Keys</p> <p>Module Nine Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XI: Communications and Networking Infrastructures: Develop the skills to design, deploy, and administer networks and communications systems.

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.A Apply advanced tools, materials, and techniques to answer complex questions.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C . --</p> <p>Activities: Module Nine Presentation & Lecture Module Nine Online Reading</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C . --</p> <p>Module Nine Study Guide Packet</p> <p>Module Nine Presentation Guided Notes</p> <p>Module Nine Notebook</p> <p>Module Nine Online Quiz</p> <p>Module Nine Pre-Quiz & Pre-test</p> <p>Module Nine Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C . --</p> <p>Module Nine Notebook Handouts: RAID Arrays Comparison Chart Configuration Charts/Topology Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XI: Communications and Networking Infrastructures: Develop the skills to design, deploy, and administer networks and communications systems.

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.A Apply advanced tools, materials, and techniques to answer complex questions.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C, & 3.7.12.E</p> <p>--</p> <p>I. Module X: Networking Fundamentals</p> <p>A. Perform basic administrative duties that are needed to maintain a computer network.</p> <p>B. Select a network interface card based on considerations regarding the type of network, type of media, and type of system bus.</p> <p>C. Understand network topology and the overall structure of a computer or communications system known as the architecture.</p> <p>D. Define protocols and the OSI model.</p> <p>E. Compare the TCP/IP model and the OSI model.</p> <p>F. View configuration information and troubleshoot problems.</p> <p>G. Explain synchronous and asynchronous serial transmissions.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C, & 3.7.12.E --</p> <p>Worksheets:</p> <p>10.2.5 Types of Networks</p> <p>10.4.2 Network Topology</p> <p>10.6.5 OSI Models, TCP/IP, Protocols</p> <p>10.8.7 Connecting to the Internet</p> <p>Labs:</p> <p>10.3.1. NIC Installation</p> <p>10.3.3 Configuring the NIC to Work with the DHCP Server</p> <p>10.7.2 Troubleshooting the NIC with the ping Command</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C, & 3.7.12.E --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Ten PPT Presentation & Guided Notes & Key</p> <p>Module Ten Pre-test, Post-test, & Keys</p> <p>Module Ten Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XI: Communications and Networking Infrastructures: Develop the skills to design, deploy, and administer networks and communications systems.
NBEA Information Technology Academic Content Standard # XV: Risk Management: Design and implement risk management policies and procedures for information technology.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>All the above Academic Standards on preceding page plus:</p> <p>3.8.12.B. Apply the use of ingenuity and technological resources to solve specific societal needs and improve the quality of life.</p> <p>3.8.12.C Evaluate the consequences and impacts of scientific and technological solutions.</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C, 3.7.12.E --</p> <p>Activities: Module Ten Presentation & Lecture Module Ten Online Reading</p> <p>3.8.12.B. & 3.8.12.C. --</p> <p><i>Cyber Protect</i> Software – A simulation lesson on Network Security</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C, & 3.7.12.E -- Module Ten Study Guide Packet</p> <p>Module Ten Presentation Guided Notes</p> <p>Module Ten Notebook</p> <p>Module Ten Online Quiz</p> <p>Module Ten Pre-Quiz & Pre-test</p> <p>Module Ten Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p> <p>3.8.12.B. & 3.8.12.C. -- Student's performance using the application <i>Cyber Protect</i> from the US Department of Defense</p>	<p>3.6.12.B, 3.7.12.A, 3.7.12.C, & 3.7.12.E -- Module Ten Notebook Handouts: Network Terminology OSI Model TCP/IP Model</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p> <p>3.8.12.B. & 3.8.12.C. -- <i>Cyber Protect</i> Software/ Department of Defense/ Supplied to me by Professor Loreen Powell of Bloomsburg University</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XII: Network Applications: Use, evaluate, and deploy communications and networking applications.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ☺</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.D Evaluate the effectiveness of computer software to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.D, & 3.7.12.E -- I. Module XI: Printers and Sharing A. Understand the basic types of printers that are used with the PC. B. Understand the major components of popular printer types and know how they work. C. Understand how different types of printers operate and know the processes that they use to place images on paper. D. Understand considerations when buying a printer. E. Troubleshoot printer problems and replace defective components, install various types of printers on a PC. F. Explain the different types of printer connections and their configurations. G. Understand appropriate safety measures when servicing printers.</p>	<p>3.6.12.B, 3.7.12.D, & 3.7.12.E --</p> <p>Worksheets: 11.6.1 Paper Jams</p> <p>Labs: 11.3.7 Adding an Inkjet Printer to a Computer 11.4.4 Setting Up Printing Capabilities 11.5.4 Managing Files in a Printer Queue</p>	<p>3.6.12.B, 3.7.12.D, & 3.7.12.E -- CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Eleven PPT Presentation & Guided Notes & Key</p> <p>Module Eleven Pre-test, Post-test, & Keys</p> <p>Module Eleven Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XII: Network Applications: Use, evaluate, and deploy communications and networking applications.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ©</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.D Evaluate the effectiveness of computer software to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.D, & 3.7.12.E --</p> <p>Activities: Module Eleven Presentation & Lecture Module Eleven Online Reading</p>	<p>3.6.12.B, 3.7.12.D, & 3.7.12.E --</p> <p>Module Eleven Study Guide Packet</p> <p>Module Eleven Presentation Guided Notes</p> <p>Module Eleven Notebook</p> <p>Module Eleven Online Quiz</p> <p>Module Eleven Pre-Quiz & Pre-test</p> <p>Module Eleven Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p>	<p>3.6.12.B, 3.7.12.D, & 3.7.12.E --</p> <p>Module Eleven Notebook Handouts: Printer Comparisons Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XIV: Technical Support and Training: Develop the technical and interpersonal skills and knowledge to support the user community.

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful)©</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.C, & 3.7.12.E --</p> <p>I. Module XII: Preventive Maintenance</p> <p>A. Document the procedures for preventive maintenance and for keeping the maintenance log.</p> <p>B. Follow the appropriate environmental guidelines for the proper disposal of computer components.</p> <p>C. Protect against electrostatic discharge.</p> <p>D. Perform a preventive maintenance on computer components.</p> <p>E., Run software utilities and antivirus software to maintain system integrity.</p> <p>F. Understand the power issues that affect computer systems.</p>	<p>3.6.12.B, 3.7.12.C, & 3.7.12.E --</p> <p>Worksheets:</p> <p>12.1.4 Environmental Conditions</p> <p>12.2.1 Electrostatic Discharge</p> <p>12.3.5 Preventive Maintenance for Computers</p> <p>Labs:</p> <p>12.1.2 Using a Digital Millimeter</p> <p>12.3.5 Cleaning Computer Components</p> <p>12.4.1 Using the Scandisk and Defrag Utilities</p>	<p>3.6.12.B, 3.7.12.C, & 3.7.12.E --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software: Companion Guide Textbook Engineering Journal & Workbook Study Guide Workbook</p> <p>Module Twelve PPT Presentation & Guided Notes & Key</p> <p>Module Twelve Pre-test, Post-test, & Keys</p> <p>Module Twelve Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

**NBEA Information Technology Academic Content Standard # XIV: Technical Support and Training:
Develop the technical and interpersonal skills and knowledge to support the user community.**

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ©</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.C, & 3.7.12.E --</p> <p>Activities: Module Twelve Presentation & Lecture Module Twelve Online Reading</p>	<p>3.6.12.B, 3.7.12.C, & 3.7.12.E -- Module Twelve Study Guide Packet</p> <p>Module Twelve Presentation Guided Notes Module Twelve Notebook Module Twelve Online Quiz Module Twelve Pre-Quiz & Pre-test Module Twelve Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p>	<p>3.6.12.B, 3.7.12.C, & 3.7.12.E -- Module Twelve Notebook Handouts: Beep Codes Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

NBEA Information Technology Academic Content Standard # XIV: Technical Support and Training: Develop the technical and interpersonal skills and knowledge to support the user community.

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<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.D Evaluate ht effectiveness of computer software to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.C, 3.7.12.D, & 3.7.12.E</p> <p>--</p> <p>I. Module XIII: Troubleshooting PC Hardware</p> <p>A. Use the steps in the troubleshooting cycle.</p> <p>B. Gather correct data from the user to properly troubleshoot the computer problems.</p> <p>C. Isolate hardware problems from the software problems.</p> <p>D. Troubleshoot hardware components.</p> <p>E. Identify the most common failure points of computer components.</p> <p>F. Identify common field-replaceable units.</p>	<p>3.6.12.B, 3.7.12.C, 3.7.12.D, & 3.7.12.E --</p> <p>Worksheets:</p> <p>13.1.2 Troubleshooting Basics</p> <p>13.3.2 Troubleshooting Printers</p> <p>13.3.4 Troubleshooting Hardware</p> <p>Labs:</p> <p>13.1.7 Steps in the Troubleshooting Cycle</p> <p>13.2.2 Identifying POST Errors</p>	<p>3.6.12.B, 3.7.12.C, 3.7.12.D, & 3.7.12.E --</p> <p>CISCO Networking Academy Program HP IT Essentials™ I: PC Hardware & Software:</p> <p>Companion Guide Textbook</p> <p>Engineering Journal & Workbook</p> <p>Study Guide Workbook</p> <p>Module Thirteen PPT Presentation & Guided Notes & Key</p> <p>Module Thirteen Pre-test, Post-test, & Keys</p> <p>Module Thirteen Instructor's Unit</p> <p>CISCO Academy Website</p>

LEARNING STANDARDS AND CONTENT ACTIVITIES

Statement of student learning expectations achieved through suggested teaching-learning activities and selected content to help reach standards and graduation requirements.

**NBEA Information Technology Academic Content Standard # XIV: Technical Support and Training:
Develop the technical and interpersonal skills and knowledge to support the user community.**

ESSENTIAL CONTENT PERFORMANCE STANDARD	CONTENT & INSTRUCTIONAL ACTIVITIES/STRATEGIES WITH CORRECTIVES AND EXTENSIONS <i>(individually created teaching activities may be used to achieve the standards; however, listed below are activities which may be helpful) ©</i>	ACTUAL LEVEL OF ATTAINMENT (EVALUATION CRITERIA) ASSESSMENT	RESOURCES AND MATERIALS
<p>PA ACADEMIC STANDARD & ASSESSMENT ANCHOR</p> <p>3.6.12.B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding.</p> <p>3.7.12.C Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</p> <p>3.7.12.D Evaluate the effectiveness of computer software to solve specific problems.</p> <p>3.7.12.E Assess the effectiveness of computer communications systems.</p>	<p>3.6.12.B, 3.7.12.C, 3.7.12.D, & 3.7.12.E</p> <p>--</p> <p>Activities: Module Thirteen Presentation & Lecture Module Thirteen Online Reading</p>	<p>3.6.12.B, 3.7.12.C, 3.7.12.D, & 3.7.12.E --</p> <p>Module Thirteen Study Guide Packet</p> <p>Module Thirteen Presentation Guided Notes Module Thirteen Notebook Module Thirteen Online Quiz Module Thirteen Pre-Quiz & Pre-test Module Thirteen Post-test</p> <p>Students' questions, answers, and discussion during lesson/presentation.</p>	<p>3.6.12.B, 3.7.12.C, 3.7.12.D, & 3.7.12.E --</p> <p>Module Thirteen Notebook Handouts: Troubleshooting Cycle Common Hardware Failure Points Terminology</p> <p>Computer Projector Smartboard™ Internet Access Academy License Microsoft PowerPoint Printer</p>

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