

NT1410 Operating Systems

INSTRUCTOR GUIDE

Credit hours: 4.5

Contact/Instructional hours: 56 (34 Theory, 22 Lab)

Prerequisite: NT1110 Computer Structure and Logic or equivalent

Corequisite: None

Course Revision Table

Change Date	Updated Section	Change Description	Change Rationale	Implementation Quarter
03/3/2014	All	New curriculum	New program	

Table of Contents

Course Overview..... 5

 Course Summary 5

 Critical Considerations 5

Instructional Resources 6

 Required Resources 6

 Additional Resources 6

Course Management..... 8

 Technical Requirements..... 8

 Test Administration and Processing 8

 Replacement of Learning Assignments 9

 Communication and Student Support..... 9

 Academic Integrity..... 9

 Instructional Approach.....12

 Methodology12

 Facilitation Strategies.....13

Unit 1: Introduction to Computers14

Unit 2: Understanding Computer Math and Measurement.....19

Unit 3: I/O Ports and Devices27

Unit 4: Motherboards and Busses33

Unit 5: The CPU.....40

Unit 6: Memory and Storage.....47

Unit 7: Computer Operation55

Unit 8: Operating Systems61

Unit 9: Basic Security68

Unit 10: Troubleshooting and Networks.....73

Unit 11: Course Review and Exam.....79

Evaluation of Student Learning85

Graded Assignment Requirements	87
Unit 1 Assignment 1: Integrated Circuit Technology	88
Unit 2 Assignment 1: Transfer Time	90
Unit 2 Analysis 1: Computer Shopper.....	92
Unit 3 Assignment 1: Video Summary 1	94
Unit 4 Assignment 1: Video Summary 2	96
Unit 4 Research Paper 1: Port Expander	98
Unit 5 Assignment 1: Video Summary 3	100
Unit 5 Analysis 1: Pentium Flaw	102
Unit 6 Assignment 1: Video Summary 4	104
Unit 6 Research Paper 1: Network Attached Storage.....	106
Unit 6 Analysis 1: Memory Cost	108
Unit 7 Assignment 1: Video Summary 5	110
Unit 8 Assignment 1: Video Summary 6	113
Unit 8 Analysis 1: System Performance	115
Unit 9 Assignment 1: Video Summary 7	117
Unit 10 Assignment 1: Video Summary 8	119
Unit 10 Analysis 1: Repair Shop.....	121

Course Overview

Course Summary

This program exposes students to a variety of fundamental skills utilized in entry-level app development for desktop computers or mobile devices. Students will be exposed to such app development platforms and environments as Android SDK, iOS SDK and Windows Phone SDK, and a series of courses on Web and mobile Web development.

Critical Considerations

Instructors should be familiar with Windows systems. Ideally, instructors should have the following skills:

- Acquaintance with architecture, functions, and features of various operating systems.
- Configure a development environment to support application development.
- Be capable of building apps

Special Instructions for Onsite Lab Delivery

Instructional Resources

Required Resources

For the course textbooks and other required materials, review the course **Syllabus**.

Additional Resources

External

- Pearson Education Portal: <http://www.pearsoncustom.com/ITTinstructor>
Downloadable and hard-copy resources are available from the publisher to support the textbook for this course. Here are step-by-step directions for gaining access to all Pearson instructor resources for ITT Tech courses:
 1. Go to the IRC site: <http://www.pearsoncustom.com/ITTinstructor>. Click the Access button.
 2. You need a personal Pearson login name and password to access this site.
 - **If you are a first-time user and do *not* have a personal Pearson log-in**, contact ITT.Instructor@pearson.com and ask for an access code.
 - a. When you have the access code, click the Register button under >>FIRST TIME USERS. On the next page, review and accept the Privacy Policy and License Agreement.
 - b. Click the **No** radio button, then enter a login name and password plus the 16-character access code. On the next page, fill in the requested information. When your registration is complete, you will receive a confirmation email.
 - c. Your user name and password will now give you access to Pearson resources. Go to the IRC site and log in.
 - **If you have a personal Pearson log-in**, enter your login name and password, then click the Log In button.
 3. Once you have logged in, select your course from the **Select Course** drop-down menu and click **Go**. You will see the student package for your course.
 4. Click the **Supplements** link in the left column to see the resources available for that course.

For downloadable resources:

If electronic resources are available, you will see links to download them directly or to go to a separate Pearson site. If you are linked to a separate Pearson product page, select the Resources tab on that page to see all available resources, both print and electronic. You can download electronic resources from this page; follow the prompts. (To order any printed resources at no charge, you must use the ITT Tech Instructor Resource Center order form; see the printed resources directions following).

For printed resources:

1. Click the **Order** link in the left-hand column. On the next page, click **Order Form**. A new window will open.
2. The first time you use the order form, click **Sign Up** to enter your shipping information. On future visits, you will not need to re-enter your mailing address.
3. Select your course from the list.
4. Click the box under **Select** to choose an item, then use the drop-down box under **QTY** to indicate how many copies you need. When you are finished for that course, click the **ADD TO CART** button.
5. You can add more items by clicking **CONTINUE SHOPPING**, or place your order by clicking **CHECKOUT**. Follow the prompts. *Important:* Your order is not complete until you have clicked the **PLACE ORDER** button.
6. Once you place your order, you will immediately receive an order receipt email. Once your order has been processed, usually 24 to 48 hours, you will receive a second email from Career.Colleges@Pearson.com with your order confirmation number. Please keep this number until you receive your order; it allows Pearson to trace your shipment if necessary.

If you have questions about the ITT Instructor Resource site, contact

Instructor.ITT@Pearson.com.

External Periodicals:

- Computer Magazine
www.computer.org/computer (accessed January 28, 2011)
Computer, the flagship publication of the IEEE Computer Society, publishes peer-reviewed technical content that covers all aspects of computer science, computer engineering, technology, and applications. The magazine provides timely information about current research developments, trends, best practices, and changes in the profession.
- Professional Portals:
 - IEEE Computer Society
<http://www.computer.org/portal/web/guest/home> (accessed January 28, 2011)
World's premier organization of computing professionals, with rich offerings in publications, standards, certifications, conferences, and more.

NOTE: All links to Web references are subject to change without prior notice.

Course Management

Technical Requirements

Recommended Lab and Classroom Setup

Minimum Requirements for Computer:

- Pentium III (min.) or equivalent processor (Macintosh or UNIX/Linux-based machines are not supported)
- 256 MB RAM (512 MB preferred)
- 2 GB free space (5 GB preferred) on master drive
- DVD-ROM drive

Minimum Requirements for Software:

- Windows XP (or later)
- Microsoft Office 2003 (or higher)
- Internet Explorer 7.0 (or higher)
- Functional email address with attachment capabilities
- Virtual machine(s) for various Windows and Linux Operating Systems

Minimum Requirements for Internet Service (for online access to this course):

- 56Kbps modem (cable or DSL strongly preferred)

Test Administration and Processing

- Tests/examinations for the onsite courses are proctored by instructors in the classroom following the schedule at the local campus. The final examination is to be conducted in the last week of the quarter with the first half of the class time allocated to the course review and the second half of the class time allocated to the examination. If a lab practicum is part of the final examination, the lab practicum is to be scheduled in the lab time of the last class meeting.
- It is against the academic integrity and violation of the institutional policy to reveal the content of the tests/examinations to students in any format prior to the actual time scheduled for the test/examination. Every instructor is required to exercise diligence in protecting all testing materials from being compromised in any form.
- Grades for the course must be closed at the scheduled time mandated by the institution.

- All quizzes, tests, and examinations for the online courses are administered through the online learning management system (LMS) at scheduled time.
- When appropriate, the Formula Sheet provided in the Assessment document must be distributed to students prior to unit-based, mid-term, or final examinations.

Replacement of Learning Assignments

- Tests/Examinations—The instructor may add up to 20% of the items to the prescribed set without altering the grade weight for the category. No substitution is allowed for any of the prescribed items.
- Quizzes—The instructor is encouraged to construct just-in-time items for this category. If prescribed items are provided, the instructor may choose to use them or substitute them with their own versions without altering the grade weights allocated to the category.
- Assignments/Discussions/Projects—Wherever deemed necessary, the instructor may choose to substitute prescribed items with his or her own version without altering the grade weights allocated to the category. The substitution items must address the same objectives as the original items at similar levels of scope and rigor with reasonable rubrics.

Communication and Student Support

- Instructors are expected to proactively engage students in the learning of the course through active guidance, monitoring, and follow-ups.
- Instructors must remind students to retain all deliverables and reference documentation related to the course assignments for the duration of the course because assignments of the later units are built on the work completed earlier in the course.
- Onsite instructors must respond to students' emails and/or phone calls within 48 hours. Graded assignments must be returned to students by the next class meeting in most cases.
- Online instructors are expected to respond to students' "Ask the Instructor" messages within 24 hours of receipt (48 hours on the weekend). Written assignments must be graded within 72 hours. Discussion forums must be graded within 72 hours after the last day posts are due.

Academic Integrity

All students must comply with the policies that regulate all forms of academic dishonesty, or academic misconduct, including plagiarism, self-plagiarism, fabrication, deception, cheating, and sabotage. For more information on the academic honesty policies, refer to the Student Handbook. Check policies and the Faculty Handbook.

Grading

The following template is required for setting up the course grade book in the ITT Technical Institute student assessment system. Titles are to be entered as written below to enable aggregate analysis of student learning activities.

Grading Category	Category Weight	Graded Deliverable	Weight
Assignment	19%		1.9%
			1.9%
			1.9%
			1.9%
			1.9%
			1.9%
			1.9%
			1.9%
			1.9%
Analysis	20%		4%
			4%
			4%
			4%
			4%
Lab	35%		1.5%
			1.5%
			1.5%
			1.5%
			1.5%
			1.5%
			1.5%

Grading Category	Category Weight	Graded Deliverable	Weight
			1.5%
			1.5%
			1.5%
Research Paper	6%		2%
			2%
			2%
Quiz	12%		1.5%
			1.5%
			1.5%
			1.5%
			1.5%
			1.5%
			1.5%
			1.5%
Exam	28%		14%
			14%

Course Delivery

Instructional Approach

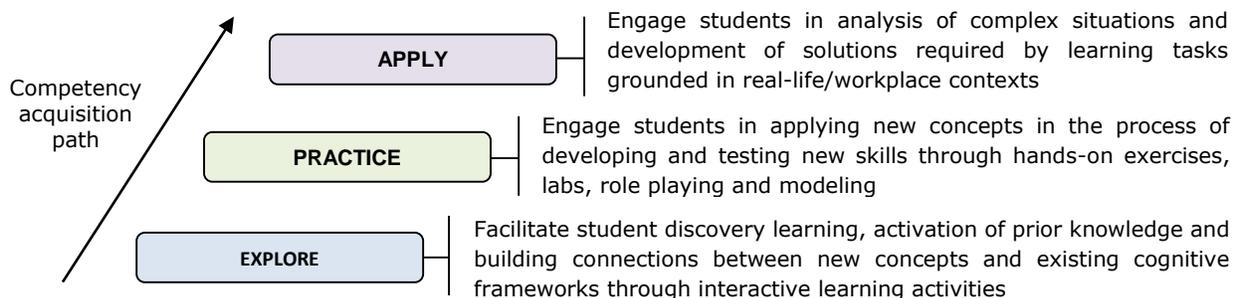
ITT Technical Institute promotes the principles and methods of **Applied Learning** grounded into the following theoretical constructs:

- Merrill's Principles of Instruction, suggesting that the most effective learning products or environments are those that are problem-centered and involve the student in: a) activation of prior experience, b) demonstration and application of skills, and c) integration of those skills into real-world activities
- Gagné's Taxonomy of Learned Capabilities that represent progression of competency development from lower-level operational skills to high-level intellectual capacity for solving unknown, complex, ill-structured problems through application or generation of rules
- Bloom/Krathwohl's Taxonomy of Educational Objectives that determines: a) selection of specific instructional tasks and associated outcomes, and b) assessment of learning outcomes
- Keller's ARCS Model addressing critical factors of learner motivation and engagement

The Applied Learning approach emphasizes contextualized learning experience, which empowers and motivates students while assisting them to develop key competencies required for employment, further education and professional development, and active participation in their communities.

Methodology

The course design utilizes the ITT/ESI proprietary **Explore-Practice-Apply** model that allows students to gradually build their knowledge and skills while engaging in meaningful and context-relevant interactions with their peers.



Each unit of the course contains three sections: **Explore**, **Practice**, and **Apply**. The instructor guidance and facilitation tips in each section are organized under Content Anchors, or focal content categories

(e.g., Process, Roles, Models, Context, Challenge, Considerations, Course of Action) that cover the questions promoting student inquiry: **What? When? How? Who? Why? Where?** Content Anchors are intended to support your facilitation process through indicating the critical instructional areas that student activities must be focused on. Content Anchors also serve as navigational tools in the e-learning module related to this course.

Facilitation guidance and teaching tips are accompanied by the Course Support Tools, which are various documents and electronic assets used by instructor and students during their work in this course. Examples of the Course Support Tools include: presentation slides, worksheets, illustrations, video files, checklists, and other similar instructional materials. Each tool is assigned an identification number that allows for easy search within the Course Support Package accompanying this Instructor Guide.

Facilitation Strategies

The following facilitation strategies are recommended for delivering this course:

- Engage students into active, experiential learning process.
- Gradually increase complexity of instructional tasks dynamically adapted to student's current competency level.
- Promote cognitive realism by engaging students into instructional tasks that have real-world relevance and match the activities of professionals in practice.
- Engage students in learning situations where they are challenged by complex problems requiring analytical thinking, critical reading, and systematic interaction with peers.
- Provide opportunities for performing scientific inquiry and reflection on individual and group work.
- Implement assessments of student learning focused on knowledge transfer into daily professional practice.

Unit 1: Introduction to Computers

Learning Objective

- Describe the components of a personal computer.

Key Concepts

- Organization of a computer
- Components of a personal computer

Reading

- Pearson Certification Team, Chapter 1: Introduction to Computers

Keywords

Use the following keywords to search for additional materials to support your work:

- Von Neumann computer model
- RAM
- ROM
- CPU
- Personal computer
- Moore's Law
- Intel
- AMD

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	Students' exploration for information in this unit will be focused on addressing the following questions: <ol style="list-style-type: none"> 1. What changes in technology have allowed computer technology to advance and improve? 2. How does the Von Neumann computer model compare with the components of the personal computer? <p style="text-align: center;">Estimated Time: 60 min.</p>	<i>Presentation</i> <i>Demonstration</i>	
 Methods	To prepare the students for the graded assignment, you can provide tips on performing a search. For example, the student should search using the keywords "Intel processor transistor count." Students can organize their search results into a table showing the year and the number of transistors possible at the time. Students should be able to discover the processor model and the year that two billion transistors were reached. <p style="text-align: center;">Estimated Time: 20 min.</p>	Brainstorming	

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 1. Assignment 1. Integrated Circuit Technology	1.9%	Assignment

Assignment Overview:

Students will use the Internet to research the progress made in integrated circuit technology for microprocessors regarding how many transistors can be placed onto a single chip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Integrated Circuit Technology	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Distribute this document in preparation for introducing the assignment to students.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student identify the advancements made in integrated circuit technology?
	1.2	Did the student provide commentary answering the stated questions?
	1.3	Does the submission document comply with the stated submission requirements?
Format	2.1	Did the student cite sources?
	2.2	Did the student use reliable sources?
	2.3	Is the submission document free of spelling errors?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 1 of the textbook before attempting any of this unit's homework activities.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Prepare students for their lab in which they will draw a diagram of the Von Neumann computer model, list input and output devices, and compare desktop and laptop computers. Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 20 min.</p>	<i>Demonstration</i>	 NT1110.U1.LIG
 Hands-on Lab	Computer Model—Refer to Laboratory Instructor Guide for details. <p style="text-align: center;">Estimated Time: 60 min.</p>	<i>Guided Labs</i>	 NT1110.U1.LIG

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 1. Lab 1. Computer Model	1.5	Lab

Assignment Overview: Refer to the NT1110 Lab Manual for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U1.LIG	Computer Model	Refer to Unit 10 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. <p style="text-align: center;">Time on Task: 20 min.</p>	<i>Review</i>	 NT1110. Assessments



Assignment Title
Unit 1.Quiz 1

% of the total course grade
1.5%

Grading Category
Quiz

Assignment Overview: Students will take a 10-question quiz covering the content from Unit 1.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 1 Quiz	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructors Guide.

REMINDERS:

- Remind students to submit Unit 1.Assignment 1 at the beginning of the next class session.

Unit 2: Understanding Computer Math and Measurement

Learning Objective

- Convert numbers between the decimal, binary, and hexadecimal number systems.

Key Concepts

- Binary and hexadecimal number systems
- Boolean logic operations
- Computer measurements of speed related to data transfer

Reading

- Pearson Certification Team, Chapter 2: Understanding Computer Math and Measurement

Keywords

Use the following keywords to search for additional materials to support your work:

- Bit
- Byte
- Kilobyte
- Megabyte
- Gigabyte
- Binary number
- Hexadecimal number
- Boolean operation
- AND
- OR
- NOT
- Hertz
- Bandwidth
- Frequency
- Serial data transfer
- Parallel data transfer

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. In what situations might a computer user need to be familiar with decimal, binary, and hexadecimal numbers? 2. How do Boolean operations assist with an Internet search? 3. Why are parallel transfers faster than serial transfers? 4. Why would a user want to use USB 2.0 instead of USB 1.0 to transfer photos from his digital camera to his computer? <p>Refer to slides 9–20 of the PowerPoint file "NT1110.U2.PS.ppt" to discuss these points. (Coverage of Boolean operations is not included.)</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 NT1110.U2.PS
 Methods	<p>To prepare students for the graded assignment, provide an example as follows: How long does a 25 MB file take to upload if the user has 2 Mbps of bandwidth available for uploads? First, the student has to recognize that the file size is in bytes and the upload speed is in bits per second. So, the file size must be converted into bits, or the upload speed must be converted into bytes per second. Converting the file size from bytes to bits means we have to multiply the file size by 8 (there are 8 bits to a byte). This gives us 200 M bits. Then we divide the file size in bits by the upload speed in bits per second. This gives us 100 seconds.</p>	<p>Brainstorming</p>	

Estimated Time: 20 min.



Assignment Title
Unit 2. Assignment 1. Transfer Time

% of the total course grade
1.9%

Grading Category
Assignment

Assignment Overview: Students will perform calculations to determine file size and transfer time based on typical communication speeds and file types.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Transfer Time	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students in Unit 1 so they may preview the assignment.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student use the correct numbers in their calculations, demonstrating familiarity with the values associated with common abbreviations?
	1.2	Did the student correctly calculate transfer time based on file size and transfer rate?
	1.3	Did the student correctly calculate file size based on transfer time and transfer rate?
	1.4	Did the student correctly note the relationship between file size, transfer rate, and transfer time?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 2 of the textbook before attempting any of this unit's activities.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Prepare students for their lab in which they will convert between decimal, binary, and hexadecimal numbers. Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 20 min.</p>	<i>Demonstration</i>	 NT1110.U2.LIG
 Hands-on Lab	Number Conversion—Refer to Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 60 min.</p>	<i>Guided Labs</i>	 NT1110.U2.LIG

	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 2. Lab 2. Number Conversion	1.5%	Lab

Assignment Overview: Refer to the NT1110 Lab Manual for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT110.U2.LIG	Number Conversion	Refer to Unit 2 in the Laboratory Instructor Guide. The student copy is located in the lab manual.	n/a

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructors Guide.



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	<p>Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually.</p> <p style="text-align: center;">Time on Task: 20 min.</p>	<p><i>Review</i></p>	 NT1110. Assessments
 Challenge	<p>To prepare the students for the Computer Shopper Analysis assignment, provide the following information to help guide their thinking:</p> <ol style="list-style-type: none"> 1. Think about different types of users. Some users just browse the Web, use email, shop online, and write Facebook posts. Other users, who might be called power users, are into video gaming or run scientific applications or programs such as AutoCAD that require blazing processors, high-performance graphics cards, and lots of RAM. Think about various professions, such as doctors, lawyers, teachers, architects, graphic artists, filmmakers, and videographers, and what computer resources they may require. 2. Think about the different types of computers that are available. There are inexpensive laptops that contain minimal hardware and just allow portable access to Web, email, and simple things. Then, as you go up in price, you get into computers that have more memory, larger hard drives, motherboards with two or more processors, and other expensive goodies. 3. Think about where users need to use their computers. Some may just sit in an office, while 	<p><i>Case Study</i></p>	

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
	others may be constantly traveling. Some may need a hardened computer that can be used in harsh environments (outdoors). Time on Task: 45 min.		



Assignment Title

Unit 2.Quiz 2

% of the total course grade
1.5%

Grading Category
Quiz

Assignment Overview: Students will take a 10-question quiz covering the content from Unit 2.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 2 Quiz 2	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments



Assignment Title

Unit 2.Analysis 1. Computer Shopper

% of the total course grade
4%

Grading Category
Analysis

Assignment Overview: Students will analyze the needs of different types of computer users and the computer they would need to do their work and other activities.

Required Documents

ID	Title	How to Use	Location(s) in Instructor Guide
n/a	Computer Shopper	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students in Unit 1 so they may preview the assignment.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student provide all requested information in the table of four computers?

Category	#	Criteria
	1.2	Did the student provide discussion on six different professions and their computing needs?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Did the student cite their sources of information?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 2 Assignment 1 and Unit 2 Analysis 1 at the beginning of the next class session.

Unit 3: I/O Ports and Devices

Learning Objective

- Explain the types of input and output devices and their purposes.

Key Concepts

- The role of input and output devices

Reading

- Pearson Certification Team, Chapter 3: I/O Ports and Devices

Keywords

Use the following keywords to search for additional materials to support your work:

- Port
- USB
- IRQ
- I/O address
- Serial (COM)
- RS232
- Parallel (LPT)
- SCSI
- IEEE 1394
- PS/2
- Centronics
- MIDI
- CRT monitor
- VGA
- HDMI
- S-video

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 <p>Concepts</p>	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. What are the critical input and output devices necessary to use a personal computer? Which ones are not necessary? 2. Why are devices such as modems and the network considered input/output devices? 3. Though a printer is an essential output device, can you think of why it may also be classified as an input device? <p>Refer to slide 19 of the PowerPoint file "NT1110.U3.PS.ppt" to discuss point 1. This PPT may be used to augment many of concepts discussed in Chapter 3 of the textbook.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 NT1110.U3.PS
 <p>Methods</p>	<p>To prepare students for the assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD. their submissions should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips • Bulleted list of terms used in the video clips with their definitions • Summary of the student's thoughts on the information presented in the video clips, including what was learned from the presentation, what may have been confusing, and where the information might be used. 	<p><i>Brainstorming</i></p>	

Estimated Time: 20 min.



Graded Assignment

Assignment Title
Unit 3. Assignment 1. Video Summary 1

% of the total course grade
1.9%

Grading Category
Assignment

Assignment Overview: Students will watch video clips 1.07, 1.09, and 1.11 from the Video Mentor DVD and write summaries of the information presented in each clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 1	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 3 of the textbook before attempting any of this unit's activities.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Prepare students for their lab in which they will provide diagrams of the expansion buses and external memory slots found on a desktop PC or notebook computer. Refer to the Laboratory Instructor Guide for this unit for details. Estimated Time: 20 min.	<i>Demonstration</i>	 NT1110.U3.LIG
 Hands-on Lab	Exploring Busses—Refer to the Laboratory Instructor Guide for this unit for details. Estimated Time: 60 min.	<i>Guided Labs</i>	 NT1110.U3.LIG

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 3. Lab 3. Exploring Busses	1.5%	Lab

Assignment Overview: Refer to the NT1110 Lab Manual for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U3.LIG	Exploring Busses	Refer to Unit 3 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a

Special Instructions for Onsite Lab Delivery:

As this unit introduces such concepts as I/O ports and Expansion Busses (and modules), the onsite instructor may direct students to inspect and diagram the external I/O ports on the invasive computers, and then open the invasive computer to inspect the inside of such ports, identifying the corresponding modules for each of such port and if the port is directly integrated on the motherboard or from a module card inserted in the expansion slot of the motherboard. If a module is used, direct students to follow procedures to try to remove the module from the slot and plug it back in. Guide students to use proper anti-static protections and ensure reassembled units are securely seated. The

purpose is to close the loop between conceptual understanding and the actual physical sensory acquisition of the concept.



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. <p style="text-align: center;">Time on Task: 20 min.</p>	<i>Review</i>	 NT1110. Assessments

 Graded Assignment	Assignment Title Unit 3.Quiz 3	% of the total course grade 1.5%	Grading Category Quiz
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Assignment Overview: Students will take a 10-question quiz covering the content from Unit 3.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 3 Quiz 3	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructors Guide.

REMINDERS

- Remind students to submit Unit 3.Assignment 1 at the beginning of the next class session.

Unit 4: Motherboards and Busses

Learning Objective

- Describe the operation of the motherboard and different types of busses located on it.

Key Concepts

- Purpose of the motherboard
- Purpose of each type of bus in a personal computer

Reading

- Pearson Certification Team, Chapter 4: Motherboards and Buses

Keywords

Use the following keywords to search for additional materials to support your work:

- System bus
- Chipset
- Form factor
- Memory slot
- Expansion slot

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. Upgrading only the motherboard will give some performance improvement to a computer system. Why would the improvement be limited? 2. Why the need for all the different busses found on a motherboard? Why not just do everything with a single bus? 3. With 64-bit busses available, why should 32-bit busses be provided as well? <p>Refer to slides 3–5 of the PowerPoint file “NT1110.U4.PS.ppt” to help facilitate a discussion on motherboards. The slides may be used to augment many of the concepts covered in Chapter 4 of the textbook.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 NT1110.U4.PS
 Methods	<p>To prepare students for the assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD, their submissions should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips • Bulleted list of terms used in the video clips with their definitions • Summary of the student's thoughts on the information presented in the video clips, including what was learned from the presentation, what 	<p><i>Brainstorming</i></p>	

may have been confusing, and where the information might be used.

Estimated Time: 20 min.



Graded Assignment

Assignment Title
Unit 4. Assignment 1. Video Summary 2

% of the total course grade
1.9%

Grading Category
Assignment

Assignment Overview: Students will watch video clip 1.04 from the Video Mentor DVD and write a summary of the information presented in the clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 2	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 4 of the textbook before attempting any of this unit's activities.



P R A C T I C E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	<p>To prepare the students for the research paper, pose the following question: It is rare to find a parallel connector (LPT) on the port cluster of a new computer. What does a user with an older parallel printer do?</p> <ol style="list-style-type: none"> 1. One solution is to purchase a special adapter cable, such as a USB-to-Centronics cable, that interfaces an older parallel printer to USB. 2. A second solution is to use a device called a port expander, which contains several different types of I/O ports and plugs into a USB port on the computer. What are the types of I/O ports available on a port expander? Are port expanders made for specific types of computers, or are they generic devices that will work with any computer? <p style="text-align: center;">Estimated Time: 20 min.</p>	<p><i>Brainstorming</i></p>	
 Hands-on Lab	<p>Students will begin researching information on port expanders for Unit 4 Research Paper 1. Port Expander.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Individual research</i></p>	

	Assignment Title	% of total course grade	Grading Category
Graded Assignment	Unit 4. Research Paper. Port Expander	2%	Research Paper

Assignment Overview: Students will search the Internet for information on “port expander” and list the types of ports available on the expander hardware.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide

n/a	Port Expander	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section
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Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the students identify and describe information found on port expanders?
	1.2	Did the student list the types of ports available?
	1.3	Did the student cite sources?
	1.4	Did the student list the types of ports available?
	1.5	Did the student provide discussion on the advantages and disadvantages of using port expanders?
Format	2.1	Did the student include a screen shot of a port expander?
	2.2	Is the submission document free of spelling errors?
	2.3	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

Special Instructions for Onsite Lab Delivery:

As this unit discusses such concepts as the motherboard, form factor, CPU, etc, the instructor teaching the onsite labs may choose to direct students to INSPECT these components from the invasive computers. Please be cautioned that we do not want students to take anything off from the mother board for such inspections. This is especially true with regard to the CPU. The instructor must ensure that no one attempts to shake and/or yank the CUP and other chips from the motherboard. This exercise is to allow students to have a first-hand view of the components that can compare with the color pictures in the textbook/lab manual. Discussions can be held to compare and contrast the pictures and the real motherboard and components so as to enhance the theoretical learning of this unit.



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit’s topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. Time on Task: 20 min.	<i>Review</i>	 NT1110. Assessments

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 4.Quiz 4	1.5%	Quiz

Assignment Overview: Students will take a 10-question quiz covering the content from Unit 4.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 4 Quiz 4	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 4.Research Paper 1 at the beginning of the next class session.

Unit 5: The CPU

Learning Objective

- Explain the purposes, functions, and characteristics of a central processing unit (CPU).

Key Concepts

- Processor clock speed and power consumption
- Intel and AMD CPU characteristics

Reading

- Pearson Certification Team, Chapter 5: The CPU

Keywords

Use the following keywords to search for additional materials to support your work:

- CPU
- Intel
- AMD
- Socket
- Clock rate
- Hyper-threading
- Dual-core
- Multi-core
- MMX
- Overclocking
- Cache
- VRM
- Heat sink

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 <p>Concepts</p>	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. What is the relationship between CPU clock speed and the power consumed by the processor? 2. If a 1 GHz processor is replaced by a 2 GHz processor, do all programs execute twice as fast? 3. What are the reasons for choosing Intel processors over AMD, or vice versa? <p>Use slides from the PowerPoint file "NT1110.U5.PS.ppt" to augment many of the concepts covered in Chapter 5 of the textbook.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 <p>NT1110.U5.PS</p>
 <p>Methods</p>	<p>To prepare students for their assignment, provide guidelines for what is expected in the homework submission. Because students will watch a video clip from the Video Mentor DVD, their submissions should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clip • Bulleted list of terms used in the video clip with their definitions • Summary of the student's thoughts on the information presented in the video clip, what was learned from the presentation, what may have been confusing, and where the information might be used <p style="text-align: center;">Estimated Time: 20 min.</p>	<p><i>Brainstorming</i></p>	

<input checked="" type="checkbox"/>	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 5. Assignment 1. Video Summary 3	1.9%	Assignment

Assignment Overview: Students will watch video clip 1.05 from the Video Mentor DVD and write a summary of the information presented in the clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 3	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 5 of the textbook before attempting any of this unit's activities.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	<p>Prepare students for their lab in which they will examine the components of two different motherboards and research the processor sockets and chipsets. Students will also compare the capabilities of different Intel and AMD CPUs. Refer to the Laboratory Instructor Guide for this unit for details.</p> <p>Distribute and Introduce Unit 11. Lab 10: Research Project. Students should begin working on Lab 10 in this unit. They will submit the assignment in Unit 11. If they finish a lab early in subsequent units, they can use the remaining lab time to work on Lab 10.</p> <p style="text-align: center;">Estimated Time: 20 min.</p>	<p><i>Demonstration</i></p>	 NT1110.U5.LIG
 Hands-on Lab	<p>Motherboard Components and Form Factors—Refer to the NT1110 Laboratory Instructor Guide for details.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Guided Labs</i></p>	 NT1110.U5.LIG

	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 5. Lab 4. Motherboard Components and Form Factors	1.5%	Lab

Assignment Overview: Refer to the NT1110 Lab Manual for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U5.LIG	Motherboard Components and Form Factors	Refer to Unit 5 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a

To determine the weight of this graded assignment in the final course grade, refer to the Assessment section of this Guide.

Special Instructions for Onsite Lab Delivery:

The onsite instructor may direct students to open the invasive computers and inspect the CPU assembly and the surrounding components. Direct students to associate the inspection with the textbook and research information to reflect and validate the information acquired through the theory sessions. Please be cautioned that these activities are for INSPECTION only and no attempt should be made to take anything apart.



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for an exam covering Units 1-5. Cover questions on past quizzes and the sample quiz for Unit 5.	Review	 NT1110. Assessments
 Challenge	Prepare students for their analysis assignment in which they will locate an analysis of the Pentium floating-point flaw and Intel's handling of the problem, then explain what would happen if a similar flaw occurred today. Time on Task: 45 min.	Case Study	



Assignment Title

Unit 5.Exam 1

% of the total course grade
14%

Grading Category
Exam

Assignment Overview: Students will take a 40-question exam covering the content from Units 1-5.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 5. Exam 1	Make copies of the exam and blank answer sheets to distribute before administering in class.	NT1110.Assessments



Assignment Title

Unit 5.Analysis 1. Pentium Flaw

% of the total course grade
4%

Grading Category
Analysis

Assignment Overview: Students will locate information on the Pentium floating-point flaw and Intel's handling of the problem, and then write a short summary of their own analysis.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
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n/a	Pentium Flaw	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section
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Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student provide information on the Pentium microprocessor flaw, how it was discovered, when it was discovered, and Intel's response to the flaw?
	1.2	Did the student provide discussion on what they think of Intel's response to the Pentium flaw?
	1.3	Did the student explain if Intel handled the problem correctly?
	1.4	Did the student explain what Intel did to satisfy customers concerned about the flaw?
	1.5	Did the student theorize about what would happen if the same type of flaw was found in a new CPU today?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?
	2.3	Did the student cite his/her sources of information?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 5 Assignment 1 and Unit 5 Analysis 1 at the beginning of the next class session.
- Encourage students to start working on Unit 11. Lab 10: Research Project. You may want to spend a few minutes of class time covering the lab requirements and discussing your requirements for an acceptable topic. If students complete their labs early in subsequent units, remind them to spend the time working on Lab 10.

Unit 6: Memory and Storage

Learning Objective

- Identify various computer memories and storage devices based on their purposes and functions.

Key Concepts

- Storage devices (electronic, electromechanical, and optical)

Reading

- Pearson Certification Team, Chapter 6: Memory and Storage

Keywords

Use the following keywords to search for additional materials to support your work:

- RAM
- DRAM
- SDRAM
- DDR SDRAM
- DDR2 SDRAM
- SIMM
- SIPP
- DIMM
- Hard disk
- PATA
- SATA
- IDE
- RAID
- CD/DVD optical drive
- ATAPI

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 <p>Concepts</p>	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. System performance typically improves when more RAM is added to the motherboard. Suppose a system has 1 GB of RAM. Why not just increase it to 8 GB or 32 GB to <i>really</i> improve performance? 2. One user has a single 600 GB hard disk, while another user has three 200 GB disks. Does one user have an advantage over the other? If so, what kind? 3. Why would a typical home computer user require RAID technology? Compare this with a typical business user. <p>Refer to slides 3–7 of the PowerPoint file “NT1110.U6.PS.ppt” to discuss points 1 and 2. In addition, this PowerPoint maybe used to augment many of the concepts covered in Chapter 6 of the textbook,</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 <p>NT1110.U6.PS</p>
 <p>Methods</p>	<p>To prepare students for the assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD. their submissions should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips • Bulleted list of terms used in the video clips with their definitions 	<p><i>Brainstorming</i></p>	

- Summary of the student’s thoughts on the information presented in the video clips, including what was learned from the presentation, what may have been confusing, and where the information might be used.

Estimated Time: 20 min.



Assignment Title	% of the total course grade	Grading Category
Unit 6. Assignment 1. Video Summary 4	1.9%	Assignment

Assignment Overview: Students will watch video clips 1.06 and 1.08 from the Video Mentor DVD and write summaries of the information presented in each clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 4	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment’s due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 6 of the textbook before attempting any of this unit's activities.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	<p>To prepare the students for their research paper, you can pose the following questions:</p> <ol style="list-style-type: none"> 1. What would happen if you combined a hard disk with a network adapter? This is the basis of storage devices called Network Attached Storage (NAS). 2. What is the speed of the network adapter available on a NAS device? What is the capacity? Is there any fault tolerance built into the NAS device (such as RAID)? Are management features available? 3. Why would a user want to use a NAS? For example, what would be the advantage of all family photos and videos being stored on a NAS in a family where the parents and children all had their own computers? <p style="text-align: center;">Estimated Time: 20 min.</p>	<p><i>Brainstorming</i></p>	
 Hands-on Lab	<p>Students will begin researching information to be used for the Network Attached Storage Research Paper.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Individual research</i></p>	

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 6. Research Paper 1. Network Attached Storage	2%	Research Paper

Assignment Overview: Students will search the Internet for information on “network attached storage” and list the capacities and features available.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
n/a	Network Attached Storage	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the students identify and describe information found on network attached storage devices?
	1.2	Did the student include a screen shot of a NAS device?
	1.3	Did the student list the types of NAS devices available and their features?
	1.4	Did the student determine if port expanders are made for specific computers or generic in nature, working with any computer?
	1.5	Did the student provide discussion on why a user would want to use a NAS?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?
	2.3	Did the student cite his/her sources of information?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

Special Instructions for Onsite Lab Delivery:

As this unit discusses such components as memory and storage devices, the onsite instructor may choose to direct students to open the invasive computers to inspect the RAM busses, modules, hard drive and CD/DVD ROM drive assemblies. Direct students to properly and carefully release the RAM modules, inspect the form factor, and insert them back on. If there is time, also direct student to inspect the hard drive assembly, find out how difficult it is to disconnect and remove the hard drive from the assembly and to put it back on. The instructor must provide detailed demonstration for each step, and ask students to take copious notes before they attempt to perform the procedures themselves. Please ensure proper anti-static procedures are followed for all such hands on procedures. Also to ensure all connectors are securely seated back into the slots if disassembling and reassembling took place.



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. <p style="text-align: center;">Time on Task: 20 min.</p>	<i>Review</i>	 NT1110. Assessments
 Challenge	Prepare students for their analysis assignment in which they will analyze the decline in cost of memory (both motherboard RAM and hard drive storage) over the past 20 years. They will then predict future capacities and prices. <p style="text-align: center;">Time on Task: 20 min.</p>	<i>Individual Research</i>	

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 6.Quiz 5	1.5%	Quiz

Assignment Overview: Students will take a 10-question quiz covering the content from Unit 6.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 6 Quiz 5	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

Assignment Overview: Students will analyze the decline in cost of memory (both motherboard RAM and hard drive storage) over the past 20 years. They will then predict future capacities and prices.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
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n/a	Memory Cost	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section
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Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student provide information on the decline of prices for RAM and hard disk storage?
	1.2	Did the student provide discussion on their predictions of future RAM and hard disk capacity and costs?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?
	2.3	Did the student cite their sources of information?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 6.Video Summary 4, Unit 6.Research Paper 1, and Unit 6.Analysis 1 at the beginning of the next class session.

Unit 7: Computer Operation

Learning Objective

- Explain BIOS, and POST, and derived processes.

Key Concepts

- Role of BIOS and the POST procedures
- Activities performed while booting the operating system

Reading

- Pearson Certification Team, Chapter 7: Computer Operation

Keywords

Use the following keywords to search for additional materials to support your work:

- BIOS
- CMOS
- Firmware
- POST
- Beep code
- BIOS update
- Flash BIOS update

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 <p>Concepts</p>	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. The system BIOS provides the start-up intelligence for the personal computer. Why is it necessary to use ROM for the BIOS and not RAM? 2. How do the POST beep codes make troubleshooting a startup problem easier? 3. Why is the hard disk so busy when performing a cold boot? <p>Refer to slide 15 of the PowerPoint file "NT1110.U7.PS.ppt" to discuss point 2. In addition, the PowerPoint can be used to augment many of the concepts covered in Chapter 7 of the textbook.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 <p>NT1110.U7.PS</p>
 <p>Methods</p>	<p>To prepare students for the assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD. their submissions should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips • Bulleted list of terms used in the video clips with their definitions • Summary of the student's thoughts on the information presented in the video clips, including what was learned from the presentation, what 	<p><i>Brainstorming</i></p>	

may have been confusing, and where the information might be used.

Estimated Time: 20 min.



Assignment Title	% of the total course grade	Grading Category
Unit 7. Assignment 1. Video Summary 5	1.9%	Assignment

Assignment Overview: Students will watch video clips 1.01 and 1.02 from the Video Mentor DVD and write summaries of the information presented in each clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 5	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

Category	#	Criteria
	1.2	Did student accurately describe the evolution of CMOS memory on the motherboard?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?
	2.3	Did the student cite his/her sources of information?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

Special Instructions for Onsite Lab Delivery:

This unit discusses such concepts as BIOS, CMOS, boot sequence, POST, etc. The onsite instructor may direct students to boot the invasive computers to observe the COMS setup program and observe the prebuilt configuration settings. Guide students to observe the POST sequence, associated beeps and screen displays, etc. Please exercise extreme caution to instruct students' NOT to change the Setup settings without proper supervision from the instructor. Ask students to reflect the purpose of such processes in terms of troubleshooting common PC problems, etc. (e.g., when booting the computer without the keyboard plugged in, what would happen?)



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. <p style="text-align: center;">Time on Task: 20 min.</p>	<i>Review</i>	 NT1110. Assessments



Assignment Title
Unit 7.Quiz 6

% of the total course grade
1.5%

Grading Category
Quiz

Assignment Overview: Students will take a 10-question quiz covering the content from Unit 7.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 7 Quiz 6	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 7.Research Paper 1 and Unit 7.Assignment 1 at the beginning of the next class session.

Unit 8: Operating Systems

Learning Objective

- Describe the purpose and functions of an operating system.
- Explain file systems and differentiate FAT32 and NTFS file systems.

Key Concepts

- Management utilities of Windows operating systems
- Hard disk partitions and file systems

Reading

- Pearson Certification Team, Chapter 8: Operating Systems

Keywords

Use the following keywords to search for additional materials to support your work:

- Windows
- Mac OS X
- Linux
- GUI
- Windows Explorer
- My Computer
- Control Panel
- Command prompt
- My Network Places
- Taskbar
- Start Menu
- Disk partition
- Mount point
- File system
- FAT32
- NTFS
- Folder/directory
- Device manager
- Task manager
- Event viewer
- System restore

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. Which OS management utilities may be run by a typical user? Which ones may be used by someone with more knowledge of networking and operating system functions? 2. If the NTFS file system is more advanced, why use FAT32? 3. Why don't application programs for one operating system work on a different operating system? <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i></p> <p><i>Demonstration</i></p>	
 Methods	<p>To prepare students for their assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD, their submission should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips. • Bulleted list of terms used in the video clips with their definitions. • Summary of the student's thoughts on the information presented in the video clips, what was learned from the presentation, what may have been confusing, and where the information might be used. <p style="text-align: center;">Estimated Time: 20 min.</p>	<p><i>Brainstorming</i></p>	



Assignment Title
Unit 8. Assignment 1. Video Summary 6

% of the total course grade
1.9%

Grading Category
Assignment

Assignment Overview: Students will watch all video clips from Part 3 of the Video Mentor DVD and write summaries of the information presented in each clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 8	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Prepare students for their labs. Refer to the Lab Manual for this unit for details. <ul style="list-style-type: none"> Use the Scenario Express simulator and run some Windows XP simulations and then compare the features of Windows with Linux and Mac OS X. Use the Scenario Express simulator to investigate several Control Panel utilities, such as Add Hardware, Add or Remove Programs, and Internet Options. <p style="text-align: center;">Estimated Time: 20 min.</p>	<i>Demonstration</i>	 NT1110.U8.LIG
 Hands-on Lab	Operating Systems—Refer to the Laboratory Instructor Guide for this unit's details. <p style="text-align: center;">Estimated Time: 30 min.</p>	<i>Guided Labs</i>	 NT1110.U8.LIG
 Hands-on Lab	Control Panel Exercises—Refer to the Laboratory Instructor Guide for this unit's details. <p style="text-align: center;">Estimated Time: 30 min.</p>	<i>Guided Labs</i>	 NT1110.U8.LIG

	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 8. Lab 5. Operating Systems	1.5%	Lab
	Unit 8. Lab 6. Control Panel Exercises	1.5%	Lab

Assignment Overview: Refer to the Laboratory Instructor Guide for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U8.LIG	Operating Systems	Refer to Unit 8 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a

NT1110.U8.LIG	Control Panel Exercises	Refer to Unit 8 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a
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To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. <p style="text-align: center;">Time on Task: 20 min.</p>	Review	 NT1110. Assessments
 Challenge	Help students prepare for their analysis assignment in which they will be asked to analyze the different factors that affect a computer systems performance, such as the amount of installed RAM, process load, virtual memory usage, and disk fragmentation. <p style="text-align: center;">Time on Task: 45 min.</p>	Case Study	

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 8.Quiz 7	1.5%	Quiz

Assignment Overview: Students will take a 10-question quiz covering the content from Unit 8.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 8 Quiz 7	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 8.Analysis 1. System Performance	4%	Analysis

Assignment Overview: Students will analyze the different factors that affect a computer system's performance, such as the amount of installed RAM, process load, virtual memory usage, and disk fragmentation.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
n/a	System Performance	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student provide information on the various factors that affect system performance?
	1.2	Did the student provide information on ways to improve system performance?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?
	2.3	Did the student cite their sources of information?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 8.Assignment 1 and Unit 8.Analysis 1 at the beginning of the next class session.

Unit 9: Basic Security

Learning Objective

- Apply basic computer security measures through authentication and access controls.

Key Concepts

- Purpose of authentication
- Securing data and the physical environment
- Access control purposes and principles
- Wireless security

Reading

- Pearson Certification Team, Chapter 9: Basic Security

Keywords

Use the following keywords to search for additional materials to support your work:

- EFS
- Authentication
- Smart card
- Biometrics
- Malware
- Software firewall
- Local security policy
- BitLocker encryption
- Backup
- Data migration
- Password management
- Incident reporting
- Social engineering
- Access control
- Permissions
- Auditing
- Event logging
- WEP
- WPA

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. Why should users be concerned about the security of their data and computer systems? 2. What are the typical ways people are authenticated during everyday activities? 3. Why is it necessary to review the results of a security audit and the entries of the Event Log on a regular basis? <p>Use slides 3–7 of the PowerPoint file “NT1110.U9.PS.ppt” to discuss points 1 and 2. In addition, this PowerPoint may be used to augment many of the concepts covered in Chapter 9 of the textbook.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 NT1110.U9.PS
 Methods	<p>To prepare students for their assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD, their submission should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips • Bulleted list of terms used in the video clips with their definitions • Summary of the student’s thoughts on the information presented in the video clips, what they learned from the presentation, what they may have found confusing, and where they think they might use the information. 	<p><i>Brainstorming</i></p>	

Estimated Time: 20 min.



Assignment Title Unit 9. Assignment 1. Video Summary 7

% of the total course grade
1.9%

Grading Category
Assignment

Graded Assignment

Assignment Overview: Students will watch all video clips from Part 5 from the Video Mentor DVD and write summaries of the information presented in each clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 7	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment's due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS:

- Remind students they should have read Chapter 9 of the textbook before attempting any of this unit's activities.



P R A C T I C E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Prepare students for their lab in which they will research and summarize information on firewalls, anti-virus software, infection methods, backup techniques, and disaster recovery strategies. Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 20 min.</p>	<i>Demonstration</i>	 NT1110.U9.LIG
 Hands-on Lab	Security Basics– Refer to the NT1110 Lab Manual for details. <p style="text-align: center;">Estimated Time: 60 min.</p>	<i>Guided Labs</i>	 NT1110.U9.LIG

	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 9. Lab 7. Security Basics	1.5%	Lab

Assignment Overview: Refer to the Laboratory Instructor Guide for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U9.LIG	Security Basics	Refer to Unit 9 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Prepare students for a short quiz covering this unit's topics. A five-question sample quiz is available to give students to prepare for the quiz. You may have students work in small groups or have them prepare individually. <p style="text-align: center;">Time on Task: 20 min.</p>	<i>Review</i>	 NT1110. Assessments

 Graded Assignment	Assignment Title Unit 9.Quiz 8	% of the total course grade 1.5%	Grading Category Quiz
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Assignment Overview: Students will take a 10-question quiz covering the content from Unit 9.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 9 Quiz 8	Make copies of the quiz and blank answer sheets to distribute before administering in class.	NT1110.Assessments

To determine the weight of this graded assignment in the final course grade, refer to the Evaluation of Student Learning section of this Instructor Guide.

REMINDERS:

- Remind students to submit Unit 9.Assignment 1 at the beginning of the next class session.

Unit 10: Troubleshooting and Networks

Learning Objective

- Explain the client-server and peer-to-peer network models.
- Describe the six-step troubleshooting process.

Key Concepts

- Using a troubleshooting process
- Operation of the Internet
- TCP/IP protocols

Reading

- Pearson Certification Team, Chapter 10: Troubleshooting and Chapter 11: Networks

Keywords

Use the following keywords to search for additional materials to support your work:

- Electrostatic discharge
- Windows recovery environment
- Recovery console
- System restore
- Blue screen errors
- Client
- Server
- Peer-to-peer
- Modem
- ISDN
- Broadband Internet
- DSL
- LAN
- TCP/IP
- HTTP/HTTPS
- SSL
- HTML
- FTP
- Telnet
- DNS
- Port
- Email
- UTP
- Fiber-optic cable
- IP address
- IPCONFIG
- Ping

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	<p>Students' exploration for information in this unit will be focused on addressing the following questions:</p> <ol style="list-style-type: none"> 1. Which OS management utilities may be run by a typical user? Which ones may be used by someone with more knowledge of networking and operating system functions? 2. How is it possible to determine if a problem is a hardware problem or a software problem? <p>Refer to slides 7 and 8 of the PowerPoint file "NT1110.U10.PS.ppt" to discuss key concept related to the troubleshooting process. In addition, the PowerPoint may be used to augment many of the concepts covered in Chapter 10 of the textbook.</p> <p style="text-align: center;">Estimated Time: 60 min.</p>	<p><i>Presentation</i> <i>Demonstration</i></p>	 NT1110.U10. PS
 Methods	<p>To prepare students for their assignment, provide guidelines for what is expected in the homework submission. Because students will watch video clips from the Video Mentor DVD, their submissions should include the following:</p> <ul style="list-style-type: none"> • Bulleted list of the topics presented in the video clips. • Bulleted list of terms used in the video clips with their definitions. • Summary of the student's thoughts on the information presented in the video clips, what was learned from the presentation, what may have been confusing, and where the information might be used. 	<p><i>Brainstorming</i></p>	

Estimated Time: 20 min.

<input checked="" type="checkbox"/>	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 10. Assignment 1. Video Summary 8	1.9%	Assignment

Assignment Overview: Students will watch all video clips from Parts 2 and 4 from the Video Mentor DVD and write summaries of the information presented in each clip.

Required Documents:

ID	Title	Context of Use	Location in Instructor Guide
n/a	Video Summary 8	This document contains performance requirements and evaluation criteria for the graded assignment/deliverable(s). Make it available to students at least two weeks prior to the graded assignment’s due date.	STUDENT COPY: Graded Assignment Requirements section

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Did the student list the topics presented in the video?
	1.2	Did the student identify and define terms used in the video?
	1.3	Did the student describe what was presented in the video?
	1.4	Did the student identify any areas of confusion?
	1.5	Did the student identify where the information might be used?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Prepare students for their labs, in which they will: <ul style="list-style-type: none"> Apply the six-step troubleshooting process to solving hardware and software issues. Use the IPCONFIG utility to manage DHCP addresses. Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 20 min.</p>	<i>Demonstration</i>	 NT1110.U10.LIG
 Hands-on Lab	Troubleshooting—Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 30 min.</p>	<i>Guided Labs</i>	 NT1110.U10.LIG
 Hands-on Lab	Networking—Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 30 min.</p>	<i>Guided Labs</i>	 NT1110.U10.LIG

	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 10. Lab 8. Troubleshooting	1.5%	Lab
	Unit 10. Lab 9. Networking	1.5%	Lab

Assignment Overview: Refer to the Laboratory Instructor Guide for this unit for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U10.LIG	Troubleshooting	Refer to Unit 10 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a
NT1110.U10.LIG	Networking	Refer to Unit 10 of the Laboratory Instructor Guide The student copy is located in the lab manual.	n/a



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	<p>You may want to distribute the sample quiz for Unit 10 to help students prepare for Exam 2. Encourage students to start reviewing quizzes from Units 6-10 as well as reviewing the textbook.</p> <p style="text-align: center;">Time on Task: 20 min.</p>	<p><i>Review</i></p>	 NT1110. Assessments
 Challenge	<p>Prepare students for their analysis assignment, which requires them to analyze the pros and cons of a computer repair shop that has the following software policy:</p> <p>If a computer is brought to the shop with a software problem (for example, the operating system will not boot, the system is infected with malware, all programs run slowly), the repair shop does two things:</p> <ul style="list-style-type: none"> (1) Back up any pictures, videos, and documents to a DVD. (2) Format the hard drive and reinstall the operating system. <p>No user applications are reinstalled.</p> <p style="text-align: center;">Time on Task: 45 min.</p>	<p><i>Case Study</i></p>	



Graded
Assignment

Assignment Title Unit 10.Analysis 1.Repair Shop

**% of the total
course grade**
4%

**Grading
Category**
Analysis

Assignment Overview: Student will analyze the pros and cons of a computer repair shop that has the following software policy:

If a computer is brought to the shop with a software problem (for example, the operating system will not boot, the system is infected with malware, all programs run slowly), the repair shop does two things:

- (1) Back up any pictures, videos, and documents to a DVD.

(2) Format the hard drive and reinstall the operating system.

No user applications are reinstalled.

Evaluation Criteria:

Use the following criteria to evaluate the graded assignment:

Category	#	Criteria
Content	1.1	Pro: Did the student explain that formatting the hard drive is the quickest way to eliminate all infections?
	1.2	Pro: Did the student explain that making a backup DVD of their files is a good thing?
	1.3	Pro: Did the student explain that backing up and formatting the drive, rather than spending hours or days looking for and eliminating malware, is the least expensive way to get the system up and running again?
	1.4	Con: Did the student explain the user's settings, system organization, and the organization of folders on the hard drive must be reestablished? This may require a great deal of effort.
	1.5	Con: Did the student explain the user must spend time re-installing their personal applications?
Format	2.1	Is the submission document free of spelling errors?
	2.2	Does the submission document comply with the stated submission requirements?

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructor Guide.

REMINDERS

- Remind students to submit Unit 10.Assignment 1 and Unit 10.Analysis 1 at the beginning of the next class session.

Unit 11: Course Review and Exam

Learning Objective

- Review the learning objectives from Units 6-10.

Key Concepts

- Review the key concepts of Units 6-10

Reading

- Review Pearson Certification Team, Chapters 6-10

Keywords

Same as Units 6-10

Learning Activities



E X P L O R E

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Concepts	Provide an opportunity for students to ask questions about any topics from Chapters 6-11 or the labs. Guiding questions you can ask: <ol style="list-style-type: none"> 1. What topics or procedures are you unsure of? 2. What hardware topics do you have questions about? What software topics do you have questions about? Estimated Time: 60 min.	<i>Presentation</i> <i>Demonstration</i>	

Assignment Title	% of the total course grade	Grading Category
None	NA	NA



PRACTICE

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Demo Lab	Students may choose to complete Lab 10: Research Project which they started in Unit 5. Students were asked to: <ol style="list-style-type: none"> 1. Choose a computing topic with approval of the instructor. 2. Write a two-page research paper on the topic. 3. Put the main elements of the topic into a PowerPoint presentation. Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 20 min.</p>	<i>Demonstration</i>	 NT1110.U11.LIG
 Hands-on Lab	Lab 10: Research Project—Refer to the Laboratory Instructor Guide for this unit for details. <p style="text-align: center;">Estimated Time: 60 min.</p>	<i>Guided Labs</i>	 NT1110.U11.LIG

	Assignment Title	% of the total course grade	Grading Category
Graded Assignment	Unit 11. Lab 1. Research Project	1.5	Lab

Assignment Overview: Refer to the NT1110 Laboratory Instructor Guide for details.

Required Documents:

ID	Title	Context of Use	Location(s) in Instructor Guide
NT1110.U11.LIG	Research Project	Refer to the Laboratory Instructor Guide for details.	U11



A P P L Y

FOCUS	SUGGESTED APPROACH	METHODS	TOOLS
 Challenge	Give students an opportunity to ask questions from Unit 10 Sample Quiz. In addition, students may want to ask questions they have from quizzes they took in Units 6-9. Time on Task: 20 min.	Review	 NT1110. Assessments

 Graded Assignment	Assignment Title	% of the total course grade	Grading Category
	Unit 11.Exam 2	14%	Exam

Assignment Overview: Students will take a 40-question exam covering the content from Units 6-10.

Required Documents:

ID	Title	How to Use	Location(s) in Instructor Guide
NT1110. Assessments	Unit 11. Exam 2	Make copies of the exam and blank answer sheets to distribute before administering in class.	STUDENT COPY: NT1110.Assessments

To determine the weight of this graded assignment in the final course grade, refer to the *Evaluation of Student Learning* section of this Instructors Guide.

REMINDERS

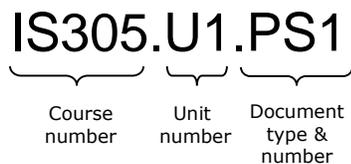
- Remind students to submit the Unit 11.Lab 10. Research Project before the end of the last class session.

Course Support Tools

The following table provides an index of all instructional materials used in this course to support the instructor and student work. The file ID column references the support materials for every course activity and graded deliverables listed in the Unit Plans above. These support materials are included in the **Course Support Package** that can be downloaded from the Curriculum Database: <http://myportal.itt-tech.edu/faculty/cdb/Pages/default.aspx>.

Unit #	Title	Type	Abbreviation	ID
1	NT1110 Computer Structure and Logic: Unit 1	Laboratory Instructor Guide	LIG	NT1110.U1.LIG
2	NT1110 Computer Structure and Logic: Unit 2	Laboratory Instructor Guide	LIG	NT1110.U2.LIG
	NT1110 Computer Structure and Logic: Unit 2	PowerPoint Slides	PS	NT1110.U2.PS
3	NT1110 Computer Structure and Logic: Unit 3	Laboratory Instructor Guide	LIG	NT1110.U3.LIG
	NT1110 Computer Structure and Logic: Unit 3	PowerPoint Slides	PS	NT1110.U3.PS
4	NT1110 Computer Structure and Logic: Unit 4	PowerPoint Slides	PS	NT1110.U4.PS
5	NT1110 Computer Structure and Logic: Unit 5	Laboratory Instructor Guide	LIG	NT1110.U5.LIG
	NT1110 Computer Structure and Logic: Unit 5	PowerPoint Slides	PS	NT1110.U5.PS
6	NT1110 Computer Structure and Logic: Unit 6	PowerPoint Slides	PS	NT1110.U6.PS
7	NT1110 Computer Structure and Logic: Unit 7	PowerPoint Slides	PS	NT1110.U7.PS
8	NT1110 Computer Structure and Logic: Unit 8	Laboratory Instructor Guide	LIG	NT1110.U8.LIG
9	NT1110 Computer Structure and Logic: Unit 9	Laboratory Instructor Guide	LIG	NT1110.U9.LIG
	NT1110 Computer Structure and Logic: Unit 9	PowerPoint Slides	PS	NT1110.U9.PS
10	NT1110 Computer Structure and Logic: Unit 10	Laboratory Instructor Guide	LIG	NT1110.U10.LIG
	NT1110 Computer Structure and Logic: Unit 10	PowerPoint Slides	PS	NT1110.U10.PS
11	NT1110 Computer Structure and Logic: Unit 11	Laboratory Instructor Guide	LIG	NT1110.U11.LIG

The standard tool ID contains the following components:



Tool Codes Legend:

PS = Presentation Slides

WS = Worksheet (a form, a template, or any type of document that students fill in during their work on a specific task)

IS = Illustration Sheet (an image, diagram, or any other visual handout)

TS = Text Sheet (a handout containing text, e.g., a case or a problem scenario)

AF = Application File (an electronic file in editable format, e.g., .FLA, .EXE, .TXT, used by instructors to demonstrate specific techniques or by students during their work on a specific task)

MF = Media File (video, audio, or animation file used by instructors to support presentation of the instructional content)

EQ = Equipment (an equipment item used by instructors to demonstrate specific techniques or by students during their work on a specific task)

Evaluation of Student Learning

This section contains guidelines and criteria that must be applied when evaluating graded deliverables submitted by students.

Final course grading is calculated as a weighted average of individual assignments within categories AND then a weighted average of the category grades. The following table and an example demonstrate the process of the final grade calculation:

Category	Category weight in the final course grade	Category-specific assignments	Assignment weight within category	Assignment grade (sample results)	Category weighted average	Contribution of category to final grade
Assignment	19%	Presentation 1	30%	80%	24%	
		Presentation 2	30%	70%	21%	
		Presentation 3	40%	90%	36%	
					81%	24.3%
Quiz	25%	Quiz 1	25%	100%	25%	
		Quiz 2	25%	95%	23.8%	
		Quiz 3	25%	90%	22.5%	
		Quiz 4	25%	90%	22.5%	
					93.8%	23.5%
Project	45%			80%	80%	36%
FINAL GRADE:						83.8%

Example:

Each Presentation assignment has 10 assessment criteria. Presentation 3, however, is assigned more weight (40%) within the category due to the complexity of the topic and time required for student to prepare it. Student A’s Presentation 1 met 8 out of 10 assessment criteria (80% of the assignment grade), Presentation 2 met 7 out 10 assessment criteria (70% of the assignment grade), and Presentation 3 met 9 out of 10 assessment criteria (90% of the assignment grade). Based on the weights assigned for each presentation, Student A received 81% of the category grade, which, in turn, contributes 24.3% to the final course grade.

STUDENT COPY

The following sections contain student copies of the assignments that must be distributed to students at least two weeks prior to the due dates for those assignments. Online students will have access to those documents in PDF format available for downloading at any time during the course.

Graded Assignment Requirements

Assignment Requirements documents provided below must be printed and distributed to students as the guidance for completing the assignments and submitting them for grading.

Instructors must remind students to retain all handouts and assignment documents issued in every unit, as well as student-prepared documentation and graded deliverables. Some or all these documents will be used repeatedly across different units.

Unit 1 Assignment 1: Integrated Circuit Technology

Learning Objectives and Outcomes

This assignment addresses the course objective “Describe the components of a personal computer.”

The expected learning outcomes that will result from completing the assignment are:

- You will be able to perform specific Internet searches for information.
- You will be able to illustrate the growth of the number of transistors available in integrated circuits used in computers.
- You will be able to determine the processor model and year when two billion transistors were placed on a single processor chip.

Assignment Requirements

1. Search the Internet using keywords such as “Intel processor transistor count.”
2. Create a table that presents the processor model, year, and transistor count for Intel processors from 1971 to the present.
3. Identify the processor model and year when two billion transistors were placed on a single processor chip.
4. Cite the sources where you located the information you placed into the table.
5. Comment on the growth of the number of transistors used in integrated circuits over the years.
 - Is the growth reasonable?
 - Does the growth look surprising fast or surprisingly slow?
 - Can you predict when 100 billion, or even one trillion, transistors may fit on a single chip?

Required Resources

In addition to having read Chapter 1 to become familiar with the role of transistors and integrated circuit technology in the evolution of the personal computer, you will need a computer with Internet access to perform searches.

Submission Specifications

You must submit the results of your research using the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 1 of the textbook.
- I have performed detailed Internet searches for the required information.
- I have written the assignment submission document and spell-checked it.
- I have followed the submission specifications.

Unit 2 Assignment 1: Transfer Time

Learning Objectives and Outcomes

This assignment addresses the key concept “Computer measurements of speed related to data transfer.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to perform specific calculations using numbers based in computer terms.
- You will be able to determine transfer time for a file based on file size and transfer rate.
- You will be able to determine file size based on transfer rate and transfer time.

Assignment Requirements

1. Fill in the Transfer Time column in Table 1. State all times in appropriate units (seconds, minutes, or hours). Show all your calculations and number conversions.
2. Fill in the File Size column in Table 2. State all sizes in appropriate units (KB, MB, or GB). Show all your calculations and number conversions.
3. Comment on the relationship among file size, transfer rate, and transfer time. How are they related?

Table 1: Calculating transfer time

File Size	Transfer Rate	Transfer Time
100 MB	56 Kbps	
100 MB	4 Mbps	
2 GB	56 Kbps	
2 GB	4 Mbps	

Table 2: Calculating file size

Transfer Rate	Transfer Time	File Size
56 Kbps	30 minutes	
4 Mbps	10 minutes	
56 Kbps	4 hours	
4 Mbps	2 hours	

Required Resources

In addition to having read Chapter 2 to become familiar with the measurements and numeric units used with computers, you will need a calculator to perform the required calculations.

Submission Specifications

You must submit the results of your work using the following specifications:

- File Format: Microsoft Word (.doc /.docx)
- Length: 1-2 pages
- Font: Arial 10-point
- Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 2 of the textbook.
- I have performed the necessary conversions and calculations.
- I have written the assignment submission document and spell-checked it.
- I have followed the submission specifications.

Unit 2 Analysis 1: Computer Shopper

Learning Objectives and Outcomes

This assignment addresses the key concept “Computer measurements of speed related to data transfer.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to compare different computers based on the size of their hard drives, processor speeds, and amount of RAM.
- You will be able to describe various ways people use computers based on their lifestyles and professions.
- You will be able to explain what type of computer (desktop, notebook) is preferred based on a user’s computing and working needs.

Assignment Requirements

1. Select four different computers with different hard disk capacities, amounts of RAM, and processor speeds. Two computers should be desktop models and two should be notebooks. Locate information on each computer via an Internet search, a visit to a store that sells computers, or a computing magazine. Put their features and pricing in a table.
2. Choose three different professions (such as educator, doctor, lawyer, engineer, graphic designer, author, movie maker, or scientist) and describe what type of computer might be needed in that line of work. Base your judgments on hard disk capacity, RAM size, and processor speed (or even the number of processors).

Required Resources

In addition to having read Chapter 2 to become familiar with the measurements and numeric units used with computers, you may want to search the Internet for computer models and/or the job responsibilities required by a particular profession. Alternately, you may wish to personally interview an individual about his or her profession and related computer use.

Submission Specifications

You must submit the results of your work using the following specifications:

- File Format: Microsoft Word (.doc /.docx)
- Length: 1-2 pages
- Font: Arial 10-point
- Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 2 of the textbook.
- I have researched four different computers and tabulated their features and prices.
- I have written the assignment submission document and spell-checked it.
- I have followed the submission specifications.

Unit 3 Assignment 1: Video Summary 1

Learning Objectives and Outcomes

This assignment addresses the learning objective “Explain the types of input and output devices and their purposes.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to list the types of ports and connectors available on a personal computer.
- You will be able to describe the operation of the video hardware on a personal computer.
- You will be able to describe the operation of a printer attached to a personal computer.

Assignment Requirements

1. Watch video clips 1.07, 1.09, and 1.11 from the Video Mentor DVD.
2. Write summaries of the information presented in each clip.
3. Create a bulleted list of the topics presented in the video clips.
4. Create a bulleted list of terms used in the video clips with their definitions.
5. Provide a summary of your thoughts on the information presented in the video clips, including what you learned from the presentation, what may have been confusing, and where you might use the information.

Required Resources

In addition to having read Chapter 3 to become familiar with input and output devices used with computers, you need a computer with a DVD drive to watch the Video Mentor video clips.

Submission Specifications

Submit the results of your work using the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 3 of the textbook.
- I have watched the required Video Mentor video clips.
- I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 4 Assignment 1: Video Summary 2

Learning Objectives and Outcomes

This assignment addresses the learning objective “Describe the operation of the motherboard and different types of buses located on it.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to list the types of buses used within a personal computer.
- You will be able to describe the operation of the motherboard in a personal computer.

Assignment Requirements

1. Watch video clip 1.04 from the Video Mentor DVD.
2. Write a summary of the information presented in the clip.
3. Create a bulleted list of the topics presented in the video clip.
4. Create a bulleted list of terms used in the video clip with their definitions.
5. Provide a summary of your thoughts on the information presented in the video clip, including what you learned from the presentation, what you may have found confusing, and where you might use the information.

Required Resources

In addition to having read Chapter 4 to become familiar with the motherboards and buses used with computers, you will need a computer with a DVD drive to watch the Video Mentor video clip.

Submission Specifications

Submit the results of your work using the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 4 of the textbook.
- I have watched the required Video Mentor video clip.
- I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 4 Research Paper 1: Port Expander

Learning Objectives and Outcomes

This assignment addresses the learning objective “Describe the operation of the motherboard and different types of buses located on it.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to explain the type of I/O ports available on a port expander.
- You will be able to explain whether port expanders are specific to a computer or generic in nature, working with any type of computer.
- You will be able to discuss the advantages and disadvantages of using a port expander.

Assignment Requirements

1. Search the Internet for information on “port expander.”
2. List the types of ports available on the expander hardware. Include screen shots of actual port expanders in an appendix to your completed assignment.
3. Determine whether port expanders are made for specific types of computers, or if they are generic devices that will work with any computer.
4. You should also discuss the possible advantages and disadvantages of using a port expander.

Required Resources

In addition to having read Chapter 4 to become familiar with the different buses available on the motherboard, you will need to search the Internet for information on port expanders.

Submission Specifications

Submit the results of your work using the following specifications:

- File Format: Microsoft Word (.doc / .docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 4 of the textbook.



I have located information on port expanders.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 5 Assignment 1: Video Summary 3

Learning Objectives and Outcomes

This assignment addresses the learning objective “Explain the purposes, functions, and characteristics of a central processing unit (CPU).” The expected learning outcome that will result from completing the assignment is:

- You will be able to describe the central processing unit used within a personal computer.

Assignment Requirements

1. Watch video clip 1.05 from the Video Mentor DVD.
2. Write a summary of the information presented in the clip.
3. Create a bulleted list of the topics presented in the video clip.
4. Create a bulleted list of terms used in the video clip with their definitions.
5. Provide a summary of your thoughts on the information presented in the video clip, including what you learned from the presentation, what you may have found confusing, and where you might find the information.

Required Resources

In addition to having read Chapter 5 to become familiar with the central processing unit used in a computer, you will need a computer with a DVD drive to watch the Video Mentor video clip.

Submission Specifications

Submit the results of your work using the following specifications:

File Format:	Microsoft Word (.doc /.docx)
Length:	1-2 pages
Font:	Arial 10-point
Line Spacing:	Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 5 of the textbook.
- I have watched the required Video Mentor video clip.
- I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 5 Analysis 1: Pentium Flaw

Learning Objectives and Outcomes

This assignment addresses the learning objective “Explain the purposes, functions, and characteristics of a central processing unit (CPU).” The expected learning outcomes that will result from completing the assignment are:

- You will be able to describe the nature of the Pentium microprocessor flaw.
- You will be able to explain when the flaw was detected, how the flaw was detected, and Intel’s response to the flaw.
- You will provide your opinion of Intel’s response to the Pentium flaw.

Assignment Requirements

1. Search the Internet for information about the Pentium microprocessor flaw, using keywords such as “Pentium microprocessor flaw.”
2. Determine the nature of the Pentium flaw, how it was discovered, when it was discovered, and Intel’s response to the flaw.
3. Write several paragraphs explaining what you think of Intel’s response to the Pentium flaw.

Be sure to include answers to the following questions:

- Did Intel handle the problem correctly?
- What did Intel do to satisfy customers concerned about the flaw?
- What would happen if the same type of flaw were found in a new CPU today?

Required Resources

In addition to having read Chapter 5 to become familiar with the central processing unit used in a computer, you will need to search the Internet for information on the Pentium microprocessor flaw.

Submission Specifications

Submit the results of your work using the following specifications:

File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 5 of the textbook.
- I have located information about the Pentium microprocessor flaw.
- I have written the assignment submission document and spell-checked it.
- I have followed the submission specifications.

Unit 6 Assignment 1: Video Summary 4

Learning Objectives and Outcomes

This assignment addresses the learning objective “Identify various computer memories and storage devices based on their purposes and functions.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to list the types of RAM memory.
- You will be able to list the types of electromechanical storage and how they are used.
- You will be able to list the types of optical storage and how they are used.

Assignment Requirements

1. Watch video clips 1.06 and 1.08 from the Video Mentor DVD.
2. Write summaries of the information presented in each clip.
3. Create a bulleted list of the topics presented in the video clips.
4. Create a bulleted list of terms used in the video clips with their definitions.
5. Provide a summary of your thoughts on the information presented in the video clips, including what you learned from the presentation, what you may have found confusing, and where you might use the information.

Required Resources

In addition to having read Chapter 6 to become familiar with the memory and storage technology used with computers, you will need a computer with a DVD drive to watch the Video Mentor video clips.

Submission Specifications

Submit the results of your work meeting the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 6 of the textbook.



I have watched the required Video Mentor video clips.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 6 Research Paper 1: Network Attached Storage

Learning Objectives and Outcomes

This assignment addresses the learning objective “Identify various computer memories and storage devices based on their purposes and functions.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to explain what a NAS device is, its communication speed, capacity, and its fault tolerance and management capabilities.
- You will speculate on the uses for a NAS device.

Assignment Requirements

1. Search the Internet for information on “network attached storage” and answer the following questions:
 - What is a NAS device?
 - What is the speed of the network adapter available on a NAS device?
 - What is the capacity range?
 - Is there any fault tolerance (such as RAID) built into a NAS device?
 - Are management features available?
2. Speculate on why a user would want to use a NAS. For example, what would be the advantage of all family photos and videos being stored on a NAS in a family where the parents and children all had their own computers?

Required Resources

In addition to having read Chapter 6 to become familiar with the various computer memories and storage devices based on their purposes and functions, you will need to search the Internet for information on network attached storage devices.

Submission Specifications

Submit the results of your work meeting the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 6 of the textbook.

I have located information on network attached storage devices.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 6 Analysis 1: Memory Cost

Learning Objectives and Outcomes

This assignment addresses the learning objective “Identify various computer memories and storage devices based on their purposes and functions.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to describe the decline in memory cost of both RAM and hard drive storage.
- You will provide an opinion on when you think a 100 TB hard drive will become available.
- You will provide an opinion on how much memory you will be able to purchase for \$100 ten years from now.

Assignment Requirements

1. Search the Internet for information about the price of RAM and hard drive storage over the past 30 years. Here is some initial information:
In 1981, an 18 MB hard drive cost \$2500. Today, a 1 TB hard drive costs \$150.
In 1990, RAM costs were \$50 per MB. Today, you can buy 2 GB of RAM for \$50.
2. Determine the cost of one bit of RAM and one bit of hard drive storage over the years.
3. Write several paragraphs explaining when you think a 100 TB hard drive will become commercially available. Provide evidence supporting your prediction.
4. Write several paragraphs predicting how much RAM or hard drive capacity you will be able to purchase for \$100 ten years from now. Provide evidence supporting your prediction.

Required Resources

In addition to having read Chapter 6 to become familiar with the memory and storage devices used in a computer, you will need to search the Internet for information on the decline in price of RAM and hard disk storage.

Submission Specifications

Submit the results of your work meeting the following specifications:

- | | |
|---------------|------------------------------|
| File Format: | Microsoft Word (.doc /.docx) |
| Length: | 1-2 pages |
| Font: | Arial 10-point |
| Line Spacing: | Double |

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 6 of the textbook.

I have located information about the decline in price of RAM and hard disk storage.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 7 Assignment 1: Video Summary 5

Learning Objectives and Outcomes

This assignment addresses the learning objective “Explain BIOS, POST, and derived processes.” The expected learning outcome that will result from completing the assignment is:

- You will be able to describe the operation of BIOS and POST.

Assignment Requirements

1. Watch video clips 1.01 and 1.02 from the Video Mentor DVD.
2. Write summaries of the information presented in each clip.
3. Create a bulleted list of the topics presented in the video clips.
4. Create a bulleted list of terms used in the video clips with their definitions.
5. Provide a summary of their thoughts on the information presented in the video clips, including what you learned from the presentation, what you may have found confusing, and where you might use the information.

Required Resources

In addition to having read Chapter 7 to become familiar with the BIOS and POST operations used by computers, you will need a computer with a DVD drive to watch the Video Mentor video clips.

Submission Specifications

Submit the results of your work meeting the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 7 of the textbook.
- I have watched the required Video Mentor video clips.
- I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 7 Research Paper 1: CMOS

Learning Objectives and Outcomes

This assignment addresses the learning objective “Explain BIOS, POST, and derived processes.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to explain the purpose of CMOS memory.
- You will be able to discuss the evolution of CMOS memory on the motherboard.

Assignment Requirements

1. Search the Internet for information on “CMOS memory” and answer the following questions:
 - How has CMOS memory change over the years?
 - Has the size of the CMOS memory increased, decreased, or stayed the same?
2. Determine if the CMOS still utilizes RAM, requiring a battery on the motherboard, or has evolved into using EEPROM.

Required Resources

In addition to having read Chapter 7 to become familiar with the CMOS and BIOS, you will need to search the Internet for information on CMOS memory.

Submission Specifications

Submit the results of your work meeting the following specifications:

File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 7 of the textbook.

I have located information on CMOS memory.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 8 Assignment 1: Video Summary 6

Learning Objectives and Outcomes

This assignment addresses the learning objective “Describe the purpose and functions of an operating system.” The expected learning outcome that will result from completing the assignment is:

- You will be able to describe the various features of the Windows operating system.

Assignment Requirements

1. Watch any four of the video clips in Part 3 of the Video Mentor DVD.
2. Write summaries of the information presented in each selected clip.
3. Create a bulleted list of the topics presented in the selected video clips.
4. Create a bulleted list of terms used in the selected video clips with their definitions.
5. Provide a summary of your thoughts on the information presented in the selected video clips, including what you learned from the presentation, what you may have found confusing, and where you might use the information.

Required Resources

In addition to having read Chapter 8 to become familiar with the purpose and functions of an operating system used by computers, you will need a computer with a DVD drive to watch the Video Mentor video clips.

Submission Specifications

You must submit the results of your work meeting the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

- I have read Chapter 8 of the textbook.
- I have watched the selected Video Mentor video clips.
- I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 8 Analysis 1: System Performance

Learning Objectives and Outcomes

This assignment addresses the learning objective “Describe the purpose and functions of an operating system.” The expected learning outcomes that will result from completing the assignment are:

- You will be able to describe the factors that affect performance in an operating system, such as the amount of installed RAM and the CPU process load.
- You will describe how to adjust operating system parameters to achieve better performance.
- You will describe ways to improve the operating system performance via hardware changes.

Assignment Requirements

1. Search the Internet for information about the effects of a fragmented file system on disk performance.
2. Search the Internet for information about how process load and the number of running processes affect system performance.
3. Search the Internet for information about how adding more motherboard RAM improves virtual memory performance.
4. Provide an explanation of the factors that affect performance in a Windows computer system and how to improve its performance.

Required Resources

In addition to having read Chapter 8 to become familiar with the purpose and functions of an operating system used in a computer, you will need to search the Internet for information on factors that affect system performance.

Submission Specifications

Submit the results of your work meeting the following specifications:

File Format:	Microsoft Word (.doc /.docx)
Length:	1-2 pages
Font:	Arial 10-point
Line Spacing:	Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 8 of the textbook.

I have located information about the factors that affect system performance.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 9 Assignment 1: Video Summary 7

Learning Objectives and Outcomes

This assignment addresses the learning objective “Apply basic computer security measures through authentication and access controls.” The expected learning outcome that will result from completing the assignment is:

- You will be able to describe the various security features of the Windows operating system.

Assignment Requirements

1. Watch all the video clips in Part 5 of the Video Mentor DVD.
2. Write summaries of the information presented in each clip.
3. Create a bulleted list of the topics presented in the video clips.
4. Create a bulleted list of terms used in the video clips with their definitions.
5. Provide a summary of your thoughts on the information presented in the video clips, including what you learned from the presentation, what you may have found confusing, and where you might use the information.

Required Resources

In addition to having read Chapter 9 to become familiar with the basic computer security measures and access controls used by computers, you will need a computer with a DVD drive to watch the Video Mentor video clips.

Submission Specifications

Submit the results of your work meeting the following specifications:

- File Format: Microsoft Word (.doc /.docx)
Length: 1-2 pages
Font: Arial 10-point
Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 9 of the textbook.

I have watched the required Video Mentor video clips.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.

Unit 10 Assignment 1: Video Summary 8

Learning Objectives and Outcomes

This assignment addresses the learning objectives:

- Explain the client-server and peer-to-peer network models.
- Describe the six-step troubleshooting process.

The expected learning outcomes that will result from completing the assignment are:

- You will be able to describe the operation of a computer network.
- You will be able to explain how to approach and work through a troubleshooting scenario.

Assignment Requirements

1. Watch any four video clips from both Parts 2 and 4 (eight clips in all) of the Video Mentor DVD.
2. Write summaries of the information presented in each of the selected clips.
3. Create a bulleted list of the topics presented in each of the selected video clips.
4. Create a bulleted list of terms used in the selected video clips with their definitions.
5. Provide a summary of your thoughts on the information presented in the selected video clips, including what you learned from the presentation, what you may have found confusing, and where you might use the information.

Required Resources

In addition to having read Chapters 10 and 11 to become familiar with troubleshooting and computer networking, you will need a computer with a DVD drive to watch the Video Mentor video clips.

Submission Specifications

Submit the results of your work meeting the following specifications:

- File Format: Microsoft Word (.doc /.docx)
- Length: 1-2 pages
- Font: Arial 10-point
- Line Spacing: Double

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapters 10 and 11 of the textbook.



I have watched the selected Video Mentor video clips.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications:

Unit 10 Analysis 1: Repair Shop

Learning Objectives and Outcomes

The expected learning outcome that will result from completing the assignment is:

- You will be able to describe the pros and cons of a computer repair policy.

Assignment Requirements

1. Read the following scenario:

A computer repair shop has the following policy: If a computer is brought to the shop with a software problem (for example, the operating system will not boot, the system is infected with malware, or all programs run slowly), the repair shop does two things:

- i. Back up any pictures, videos, and documents to a DVD.
- ii. Format the hard drive and reinstall the operating system.

No user applications are reinstalled.

2. List and describe the pros of this approach.
3. List and describe the cons of this approach.
4. Consider the following: A user who brings a brand new computer into the store will be affected much differently from a user whose computer has worked for possibly several years with no problems. A user who mostly browses the Internet and does email will be affected much differently from a user who creates documents, such as a business professional, a student, an author, or a graphic designer. Explain how the repair shop's policy affects each of these types of user.

Required Resources

You should read Chapter 10 to become familiar with the six-step troubleshooting process.

Submission Specifications

Submit the results of your work meeting the following specifications:

- | | |
|---------------|------------------------------|
| File Format: | Microsoft Word (.doc /.docx) |
| Length: | 1-2 pages |
| Font: | Arial 10-point |
| Line Spacing: | Double |

Self-Assessment Checklist

The following checklist will help you prepare for the graded activity and/or assess the deliverable(s) as you prepare to submit them.

I have read Chapter 10 of the textbook.

I have written the assignment submission document and spell-checked it.

I have followed the submission specifications.