

Muncie Area Career Center

PC and Network Support Pathway Course Outline 2015-2016

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Course Description:

Computer Tech Support *(PC and Network Support Pathway)*

Students will be introduced to careers in technical support and network administration. Students will learn the functionality of computer hardware and software components as well as suggested best practices in maintenance, safety issues, and security. Through lab simulations and hands-on labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. Students will also learn core IT skills during this first-year program. There are opportunities for earning college dual credits and taking industry certification, such as COMP TIA Strata Certification or CompTIA A+.

Networking Fundamentals *(PC and Network Support Pathway)*

Pre-requisite: Computer Tech Support course. Networking Fundamentals introduces students to concepts of local and wide area networks, home networking, networking standards and protocols, transmission media and network architecture/topologies. Security and data integrity will be introduced and emphasized throughout this course. Concepts covered will include TCP/IP client administration, planning a network topology, configuring the TCP/IP protocol, managing network clients, configuring routers and hubs as well as creating a wireless LAN through online lab simulations. There are opportunities for earning college dual credits and taking industry certification, such as COMP TIA Strata Certification or CompTIA A+.

Textbook:

- Strata IT Fundamentals: Jernigan/Meyers
- Managing and Troubleshooting PC's Mike Meyers, 4th Edition

College Credits and Certifications/EPAs:

- INFM 109 – Informatics Fundamentals
- ITSP 135 – Information Technology Support
- Comp TIA Strata Certification Fundamentals

Course Grading Scale:

9-Week Grades Based on:

- 40% Tests and Quizzes
- 30% Labs (physical & virtual), Internship (Supervisor/Teacher Evaluations)
- 20% Classroom Participation: Worksheets, Vocabulary Cards, Lab participation, Computer assignments and Class projects

- 10% Special Projects: Job Shadow/Research Presentation/Portfolio/Workforce Readiness
- Assignments must be completed according to the specific instructions provided. Assignments are due on the specified day, regardless of whether or not the student is attending class that day. Late assignments will be evaluated on an individual basis and reviewed by the instructor to determine whether they will be accepted and/or given reduced points.

Muncie Community Schools Grading Scale:

- 100% - 90% = A
- 89% - 80% = B
- 79% - 70% = C
- 69% - 60% = D
- 59% - 50% = F

<p>First Semester Grade: 1st 9-weeks grade (45%) + 2nd 9-weeks grade (45%) + 2nd Semester Final Exam (10%)</p> <p>Second Semester Grade: 3rd 9-weeks grade (45%) + 4th 9-weeks grade (45%) + 2nd Semester Final Exam (10%)</p>

Required Clothing/Tools Needed for Course:

- Refer to IT Academy Supplies list for specific instructions

Classroom Procedures and Lab Rules

Classroom rules have been established by the Muncie Community School System and will be followed in the classroom, laboratory, and internship site. Students are to behave in such a manner as they wish to be treated. No foul or inappropriate language is to be used. No horseplay or interfering with the daily school environment.

Attendance and being tardy are in accord with the Muncie Community School System policy and there is no deviation from this plan.

Job Shadowing

Career & Technical Education students are given the opportunity to explore career options and to be exposed to workplace experiences. All IT Academy students are required to participate in, at least, one job shadowing experience each school year.

Course Outline / Syllabus – Computer Tech Support Program Area Title

Week	<p align="center">Assignment First Semester</p>	<p align="center">Key Activities or Labs/Assessments</p>
<p>1 3 days</p>	<p>Introduction to the MACC and IT Academy</p> <ul style="list-style-type: none"> • MACC Orientation • Instructor & Student Introductions • Classroom Rules & Expectations • Supplies & Forms • Course Requirements / Grading / Certifications / Dual Credits • Assign Books, Lockers, Workstations & Lab Units with Partners • Verify Student Logins / Setup Student Server Computer Folders • Daily “Balderdash” (vocabulary builder) or Writing Prompt • Professional Certification Research 	<p>Students will:</p> <ul style="list-style-type: none"> • Learn MACC schedule/rules/expectations • Review the classroom/course requirements and introduce themselves • Review the internship, certification, and dual credit requirements • Access computer/check operation/setup working folders on the server • Acquire textbooks and setup lab station • Participate in vocabulary and writing builders • Watch a video on the History of the Computer with discussion to follow • Watch a video on computer viruses with discussion to follow • Research and write a brief review about a professional IT certification <p>http://certification.comptia.org/getCertified/certifications/strata_it_fundamentals.aspx</p> <p>https://www.youtube.com/watch?v=HEmFqohbQCI</p> <p>https://www.youtube.com/watch?v=QlqA66eYpC0</p>
<p>2</p>	<p>Strata IT Fundamentals: Part 1, The Simple PC</p> <p>Chapter 1: How Computers Work</p> <ul style="list-style-type: none"> • Describe different types of computers • Explain ways to use computers • Describe how computers work <p>Chapter 2: Processing Components</p> <ul style="list-style-type: none"> • Describe different types of CPUs • Explain RAM types and technologies • Identify Motherboards • Describe power supplies and cases 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Access and review the Strata Certification Practice Exam • Take the Strata Certification Practice Exam as a Pre-test and baseline for improvement • Read Chapter 1 together in the conference area, take notes, view component samples • Watch the video Generation Like and write a summary on the impact of computers in society • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 2 together in the conference area, take notes, view component samples

	<p>Beginning LAB TIME Activity</p> <ul style="list-style-type: none"> • Begin assembly of LAB computer (Case/Motherboard w/ Processor) 	<ul style="list-style-type: none"> • Watch YouTube videos on Processors, Memory, Motherboards, Power Supplies, and Cases • Research computer cases and initial components and place in computer-build spreadsheet • Play Brain Game review with instructor prior to taking Chapter 1 and 2 quizzes • Begin LAB TIME by watching video on Motherboard installation and putting together the Case and Motherboard w/ Processor <p>http://www.pbs.org/wgbh/pages/frontline/generation-like/</p> <p>http://www.learnthenet.com/test-yourself/</p> <p>http://quizlet.com/9033828/comptia-strata-flashcards-flash-cards/</p> <p>http://www.youtube.com/watch?v=xKTKwkSVhX0</p> <p>http://www.youtube.com/watch?v=CyZ-znm6lG4</p>
3	<p>Strata IT Fundamentals: Part 1, The Simple PC</p> <p>Chapter 3: Common Input / Output Devices</p> <ul style="list-style-type: none"> • Describe the working of keyboards • Explain how to use mice and point devices • Describe how to work with monitors <p>Chapter 4: Common Storage Devices</p> <ul style="list-style-type: none"> • Describe Floppy Disks • Explain How Hard Drives Work • Describe Current Optical Technologies <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Add the Power Supply and Memory to the computer build 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 3 together in the conference area, take notes, view component samples • Watch YouTube videos on Input/Output and Storage Devices • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 4 together in the conference area, take notes, view component samples • Begin watching the movie on Watson: The Super Computer • Watch YouTube video on Timeline of Storage Devices • Research computer Input/Output and Storage Devices and complete and present computer-build spreadsheet • Play Brain Game review with instructor prior to taking Chapter 3 and 4 quizzes • Perform week 3 LAB TIME by adding the Power Supply and Memory

		<p>https://www.youtube.com/watch?v=8WH-smVRldg</p> <p>https://www.youtube.com/watch?v=u_Msl2u4mJc</p> <p>https://www.youtube.com/watch?v=tAzeGkuQmUU</p>
4	<p>Strata IT Fundamentals: Part 1, The Simple PC</p> <p>Chapter 5: Configuring the Operating System</p> <ul style="list-style-type: none"> • Adjust Basic Windows Settings • Explain User Accounts In Detail • Describe Files And Folders In Windows <p>Strata IT Fundamentals: Part 2, Maintaining and Upgrading The Simple PC</p> <p>Chapter 6: Maintenance Computers</p> <ul style="list-style-type: none"> • Care for the external parts of your computer • Describe methods for keeping the inside of the case problem free • Explain how to keep data inside the hard drive safe <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Add Storage Devices to the computer build 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 5 together in the conference area, take notes, view component samples • Watch YouTube video on Backing Up Your Data • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 6 together in the conference area, take notes, view component samples • Watch more of the movie on Watson: The Super Computer • Watch video on Cleaning Your Case: Inside & Out • Present completed computer-build spreadsheet • Play Brain Game review with instructor prior to taking Chapter 5 and 6 quizzes • Perform week 4 LAB TIME by adding Storage Devices <p>https://www.youtube.com/watch?v=joGEXCZKugE</p> <p>https://www.youtube.com/watch?v=BovgvppZX4k</p> <p>https://www.youtube.com/watch?v=tAzeGkuQmUU</p>
5	<p>Strata IT Fundamentals: Part 2, Maintaining and Upgrading The Simple PC</p> <p>Chapter 7: Upgrading Software</p> <ul style="list-style-type: none"> • Describe The Risks With Upgrading Or Not • Discuss The Process Of Upgrading Software • Explain Steps To Take Once You've Upgraded <p>Chapter 8: Upgrading Hardware</p> <ul style="list-style-type: none"> • Determine When A Computer Needs Hardware Upgrades • Explain Optimal Upgrades To Peripherals 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter7 together in the conference area, take notes, view component samples • Watch video on Windows Upgrade / Upgrade Advisor • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation

	<ul style="list-style-type: none"> • Discuss The Process Of Upgrading Internal Hardware <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Add Input/Output Devices to the computer build <p>JOB SHADOW</p> <ul style="list-style-type: none"> • Review and discuss Job Shadow packet / requirements / timeframe 	<ul style="list-style-type: none"> • Read Chapter 8 together in the conference area, take notes, view component samples • Finish watching the movie on Watson: The Super Computer and write a summary on Artificial Intelligence • Watch video on Upgrading Hardware • Review and begin the Job Shadow process • Play Brain Game review with instructor prior to taking Chapter 7 and 8 quizzes • Perform week 5 LAB TIME by adding Input/Output Devices <p>https://www.youtube.com/watch?v=Om1V_fkHFIM</p> <p>https://www.youtube.com/watch?v=QuNmLrOysYo</p> <p>https://www.youtube.com/watch?v=N7sdxUka-RY</p> <p>https://www.youtube.com/watch?v=tAzeGkuQmUU</p>
6	<p>Strata IT Fundamentals: Part 3, The Complex PC</p> <p>Chapter 9: Advanced Input / Output Devices</p> <ul style="list-style-type: none"> • Explain Visual Capture Devices • Describe Audio Devices, both Input and Output • Explore Game Controllers • Explain Television Tuners <p>Chapter 10: Advanced Storage Topics</p> <ul style="list-style-type: none"> • Describe additional Hard Drive storage options • Explore and compare Flash Storage • Explain and discuss SCSI Technology <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Install Operating System and configure the computer build <p>TECHNICAL WRITING</p> <ul style="list-style-type: none"> • Discuss and explain Technical #1 writing requirements • Perform pre-write activity 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter9 together in the conference area, take notes, view component samples • Watch videos on Scanners and Cameras • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 10 together in the conference area, take notes, view component samples • Watch videos on Flash Storage and SCSI Technology • Watch video on Audacity software and PC vs. Console • Watch video on SCSI Technology • Play Brain Game review with instructor prior to taking Chapter 9 and 10 quizzes • Review and discuss Technical Writing #1 • Perform Technical Essay #1 pre-write activity • Perform week 6 LAB TIME by installing Operating System and configuring LAB PC

		http://www.youtube.com/watch?v=mTkZpdYqXKg http://www.youtube.com/watch?v=ZWox5-fviws&index=4&list=PLFF8B165DD7CB2EC1 http://audacity.sourceforge.net/ http://www.youtube.com/watch?v=2gM12DIIwA0 http://www.youtube.com/watch?v=OAnu6ktmjl https://www.youtube.com/watch?v=LnLxDOLHe-Y
7	<p>Strata IT Fundamentals: Part 3, The Complex PC</p> <p>Chapter 11: Upgrading Software</p> <ul style="list-style-type: none"> • Explore types of Printers • Explain how to setup Printers • Describe Green Printing Practices <p>Chapter 12: Upgrading Hardware</p> <ul style="list-style-type: none"> • Describe Portable Computing Devices • Describe Expansion Slots available on computers • Maintain and clean Portable Computers <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Add software and perform updates <p>TECHNICAL WRITING</p> <ul style="list-style-type: none"> • Research and begin writing Technical Essay #1 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 11 together in the conference area, take notes, view component samples • Watch video on Printers and Green Printing • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 12 together in the conference area, take notes, view component samples • Watch videos on History of Mobile Devices and Expansion Cards • Play Brain Game review with instructor prior to taking Chapter 11 and 12 quizzes • Research and write Technical Essay #1 • Perform week 7 LAB TIME by adding software and performing updates <p>https://www.youtube.com/watch?v=3VrLQx-PO-g</p> <p>https://www.youtube.com/watch?v=AVAISLxAhe0</p> <p>http://www.youtube.com/watch?v=w-EO1MII3w0</p> <p>https://www.youtube.com/watch?v=j8_AViCn_o</p>
8	<p>Strata IT Fundamentals: Part 4, Networks Of PCs</p>	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check

	<p>Chapter 13: Wired Networks</p> <ul style="list-style-type: none"> • Explain what a Network does • Describe the components of a Wired Network • Use a Network to share resources <p>Chapter 14: Wireless Networks</p> <ul style="list-style-type: none"> • Explain Wireless Networking • Describe Wireless Networking Standards • Explore configuring a Wireless Network <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Add Printers and configure Printing Options <p>TECHNICAL WRITING</p> <ul style="list-style-type: none"> • Research and write Technical Essay #1 	<p>for progress against the baseline score</p> <ul style="list-style-type: none"> • Read Chapter 13 together in the conference area, take notes, view component samples • Watch videos on Introduction to Computer Networks • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 14 together in the conference area, take notes, view component samples • Play Brain Game review with instructor prior to taking Chapter 13 and 14 quizzes • Write Technical Essay #1 • Perform week 8 LAB TIME by adding and configuring Printers <p>https://www.youtube.com/watch?v=JvXro0dzJY8</p>
9	<p>Strata IT Fundamentals: Part 4, Networks Of PCs</p> <p>Chapter 15: Connecting to the Internet</p> <ul style="list-style-type: none"> • Describe the hardware used to connect to the Internet • Explain protocols and software used with Networking and the Internet • Discuss Web content and Web-delivered Services <p>Chapter 16: Green Networking</p> <ul style="list-style-type: none"> • Describe servers that offer substantial savings in electrical usage over traditional servers • Explain methods for greening the workplace • Discuss ways to reduce the power usage of workers <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Configure a Network connection and connect to a Network <p>TECHNICAL WRITING</p> <ul style="list-style-type: none"> • Finish Technical Essay #1 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 15 together in the conference area, take notes, view component samples • Watch videos on Connecting to the Internet and Server Monitoring • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 16 together in the conference area, take notes, view component samples • Play Brain Game review with instructor prior to taking Chapter 15 and 16 quizzes • Complete writing Technical Essay #1 • Perform week 9 LAB TIME by configuring a Network connection and connecting to a Network <p>https://www.youtube.com/watch?v=hMX6dVa61t0</p> <p>http://www.youtube.com/watch?v=k6XEPMI9QHE</p>
10	<p>Strata IT Fundamentals: Part 5, Securing PCs</p>	<p>Students will:</p>

	<p>Chapter 17: Local Security</p> <ul style="list-style-type: none"> • Explain threats to your computer and data • Describe key security concepts and technologies <p>Chapter 18: Internet Security</p> <ul style="list-style-type: none"> • Discuss different types of malicious software • Protect against viruses • Discuss Browsers configurations and firewalls <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Research and install antivirus/malware software 	<ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 17 together in the conference area, take notes, view component samples • Watch videos on Security and Computer Viruses • Access websites Learn the Net and Quizlet to use as resources for quiz and test preparation • Read Chapter 18 together in the conference area, take notes, view component samples • Play Brain Game review with instructor prior to taking Chapter 17 and 18 quizzes • Review Strata Certification Exam Study Guides • Perform week 10 LAB TIME by researching and installing antivirus/malware software <p>http://www.youtube.com/watch?v=XU8PHihT_P4</p> <p>http://www.youtube.com/watch?v=k3yh9hjnE44</p> <p>https://www.youtube.com/watch?v=CilToBYDtqA</p>
11	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 1: The Path of the PC Tech</p> <ul style="list-style-type: none"> • Explain the importance of skill in managing and troubleshooting PC's • Explain the importance of CompTIA A+ certification • Describe how to become CompTIA certified <p>Chapter 2: Operational Procedures</p> <ul style="list-style-type: none"> • Present yourself with a proper appearance and professional manner • Talk to customers in a professional manner • Work with PCs safely using the proper tools <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Practice Computer Safety Procedures 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Review and discuss Ivy Tech Dual Credit • Review A+ / CompTIA materials and LAB SIMS • Read Chapters 1 and 2 in small groups of 3 or 4 taking notes • Review Chapter 1 and 2 Power Points individually • Watch Professor Messer video on CompTIA A+ and Computer Safety Procedures • Play Brain Game review with instructor prior to taking Chapter 1 and 2 quizzes • Research jobs requiring A+ Certification and write a summary • Complete LAB SIMS for Chapters 1 & 2 (25 total) • Perform week 11 LAB TIME by practicing computer safety procedures <p>www.ivytech.edu</p>

		<p>http://certification.comptia.org/getCertified/certifications/a.aspx</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/professor-messers-comptia-a-training-course-overview/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/managing-electrostatic-discharge/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/computer-safety-procedures/</p>
12	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 3: The Visible PC</p> <ul style="list-style-type: none"> • Describe how the PC works • Identify all the connectors and devices on a typical PC system unit • Discuss the major internal components of a PC <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Inventory the components and software from the computer build 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 3 in small groups of 3 or 4 taking notes • Review Chapter 3 Power Point individually • Watch Professor Messer video on Designing Custom Computer Systems • Play Brain Game review with instructor prior to taking Chapter 3 quiz • Find a technology article to summarize and present • Discuss “legacy” problems in computer systems • Start a Terminology Spreadsheet from Chapters 1-3 • Complete LAB SIMS for Chapter 3 (7 total) • Perform week 12 LAB TIME by taking an inventory of the components and software from the computer build <p>http://www.professormesser.com/free-a-plus-training/220-801/designing-custom-computer-systems/</p>
13	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 4: Visible Windows</p> <ul style="list-style-type: none"> • Relate the history of Microsoft Windows • Explain the Windows interface • Identify the operating system folders of WIN XP, WIN Vista, and WIN 7 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 4 in small groups of 3 or 4 taking notes • Review Chapter 4 Power Point individually

	<ul style="list-style-type: none"> Describe the utilities in Windows that are essential to techs <p>LAB TIME Activity</p> <ul style="list-style-type: none"> Explore the Windows OS and evaluate Pros and Cons 	<ul style="list-style-type: none"> Present A+ job research assignments Watch video on History of Windows Watch Professor Messer videos on Windows Preview Windows 10 Play Brain Game review with instructor prior to taking Chapter 4 quiz Add to Terminology Spreadsheet from Chapter 4 Complete LAB SIMS for Chapter 4 (5 total) Perform week 13 LAB TIME by exploring the Windows OS and evaluating its Pros and Cons <p>https://www.youtube.com/watch?v=aqkkByP8RDM</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/an-overview-of-windows-xp/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/an-overview-of-windows-vista/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/an-overview-of-windows-7/</p>
14	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 5: Visible Networks</p> <ul style="list-style-type: none"> Describe the basic functions of a network including common devices and connectors Discuss the differences between a LAN and a WAN and the importance of TCP/IP Perform basic resource Sharing <p>LAB TIME Activity</p> <ul style="list-style-type: none"> Practice setting up Network Topologies and Devices 	<p>Students will:</p> <ul style="list-style-type: none"> Participate in vocabulary and writing builders Take the Strata Certification Practice Exam to check for progress against the baseline score Read Chapter 5 in small groups of 3 or 4 taking notes Review Chapter 5 Power Point individually Watch Professor Messer videos on Network Types and Devices Play Brain Game review with instructor prior to taking Chapter 5 quiz Add to Terminology Spreadsheet from Chapter 5 Complete LAB SIMS for Chapter 5 (40 total) Perform week 14 LAB TIME by practicing setting up Network Topologies and Devices <p>http://www.professormesser.com/free-a-plus-training/220-801/network-types-2/</p> <p>http://www.professormesser.com/free-a-plus-</p>

		training/220-801/network-topologies-3/ http://www.professormesser.com/free-a-plus-training/220-801/network-devices/
15	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 6: Microprocessors</p> <ul style="list-style-type: none"> Identify the Core components of a CPU Describe the relationship of CPUs and memory Explain the varieties of modern CPUs Select and install a CPU Troubleshoot CPUs <p>LAB TIME Activity</p> <ul style="list-style-type: none"> Explore and compare the CPU of the computer build with available technology Research and discuss the Pros and Cons of “Overclocking” <p>Technical Writing</p> <ul style="list-style-type: none"> Review Technical Essay #2 and complete pre-write activity 	<p>Students will:</p> <ul style="list-style-type: none"> Participate in vocabulary and writing builders Take the Strata Certification Practice Exam to check for progress against the baseline score Read Chapter 6 in small groups of 3 or 4 taking notes Review Chapter 6 Power Point individually Watch Professor Messer videos on Microprocessors Play Brain Game review with instructor prior to taking Chapter 6 quiz Add to Terminology Spreadsheet from Chapter 6 Review Technical Essay #2 prompt Complete Technical Essay #2 pre-write Complete LAB SIMS for Chapter 6 (13 total) Perform week 15 LAB TIME by evaluating the CPU of the computer build / research and discuss the Pros and Cons of “Overclocking” <p>http://www.professormesser.com/free-a-plus-training/220-801/cpu-cooling-techniques/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/an-overview-of-cpu-socket-types/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/understanding-cpu-characteristics/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/cpu-cooling-techniques/</p>
16	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 7: RAM (memory)</p> <ul style="list-style-type: none"> Identify the different types of RAM packaging Explain the varieties of DRAM Install RAM properly 	<p>Students will:</p> <ul style="list-style-type: none"> Participate in vocabulary and writing builders Take the Strata Certification Practice Exam to check for progress against the baseline score Read Chapter 7 in small groups of 3 or 4 taking notes Review Chapter 7 Power Point individually

	<ul style="list-style-type: none"> • Perform basic RAM troubleshooting <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Evaluate the current and potential RAM for the computer build • Discuss the Pros and Cons of increasing RAM <p>Technical Writing</p> <ul style="list-style-type: none"> • Research and begin writing Technical Essay #2 	<ul style="list-style-type: none"> • Watch Professor Messer videos on RAM • Play Brain Game review with instructor prior to taking Chapter 7 quiz • Add to Terminology Spreadsheet from Chapter 7 • Watch the movie “Video Game: The Movie” • Research and write Technical Essay #2 • Complete LAB SIMS for Chapter 7 (25 total) • Perform week 16 LAB TIME by evaluating the current and potential RAM of the computer build / discuss the Pros and Cons of increasing RAM <p>http://www.professormesser.com/free-a-plus-training/220-801/an-overview-of-pc-memory-types/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/understanding-pc-memory/</p> <p>www.netflix.com (Video Game: The Movie)</p>
17	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 9: Motherboards</p> <ul style="list-style-type: none"> • Explain how motherboards work • Recognize modern expansion buses • Upgrade and install motherboards • Troubleshoot motherboard problems <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Determine the type of motherboard used in the computer build • Discuss the various users of different Form Factors and Motherboards <p>Technical Writing</p> <ul style="list-style-type: none"> • Research and write Technical Essay #2 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 9 in small groups of 3 or 4 taking notes • Review Chapter 9 Power Point individually • Watch Professor Messer videos on Motherboards • Play Brain Game review with instructor prior to taking Chapter 9 quiz • Add to Terminology Spreadsheet from Chapter 9 • Watch the movie “Video Game: The Movie” • Research and write Technical Essay #2 • Complete LAB SIMS for Chapter 9 (17 total) • Perform week 17 LAB TIME by determining the motherboard type used in the computer build / discuss the various users of different Form Factors and Motherboards <p>http://www.professormesser.com/free-a-plus-training/220-801/an-overview-of-motherboard-types/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/understanding-pc-memory/</p>

		training/220-801/motherboard-expansion-slots-and-bus-speeds/ www.netflix.com (Video Game: The Movie)
18	A+ Guide To Managing And Troubleshooting PCs Technical Writing <ul style="list-style-type: none">• Finish Technical Essay #2 Semester 1 Exam <ul style="list-style-type: none">• Review for and take Semester 1 Exam	Students will: <ul style="list-style-type: none">• Participate in vocabulary and writing builders• Take the Strata Certification Practice Exam to check for progress against the baseline score• Play Brain Game to review with instructor for Semester Exam 1• Complete Semester 1 Exam Study Guide• Review Terminology Spreadsheet for Semester 1 Exam• Complete Technical Essay #2• Complete any missing LAB SIMS for Chapters 1-7 & 9• Study for and take Semester 1 Exam

Course Outline / Syllabus – Program Area Title

Week	<p align="center">Assignment Second Semester</p>	<p align="center">Activities/Assessments</p>
1	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 10: Power Supplies</p> <ul style="list-style-type: none"> • Explain the basics of electricity • Describe the details about powering the PC • Install and maintain power supplies • Understand power supply troubleshooting and fire safety <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Determine the type of Power Supply used in the computer build • Evaluate and discuss the Power Supply's capabilities of adding additional hardware 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 10 in pairs taking notes • Review Chapter 10 Power Point individually • Watch Professor Messer videos on Power Supplies • Play Brain Game review with instructor prior to taking Chapter 10 quiz • Add to Terminology Spreadsheet from Chapter 10 • Complete LAB SIMS for Chapter 10 (8 total) • Perform week 19 LAB TIME by determining the type of Power Supply used in the computer build / evaluate and discuss the Power Supply's capabilities of adding additional hardware <p>http://www.professormesser.com/free-a-plus-training/220-801/pc-power-connectors/</p>
2	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 8: BIOS</p> <ul style="list-style-type: none"> • Explain the function of BIOS • Distinguish among various CMOS setup utility options • Describe option ROM and device drivers • Troubleshoot the power-on self test (POST) • Maintain BIOS and CMOS <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Verify the BIOS setting on the computer build • Adjust Bios setting on the computer build for optimal performance 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 8 in pairs taking notes • Review Chapter 8 Power Point individually • Watch Professor Messer videos on BIOS • Play Brain Game review with instructor prior to taking Chapter 8 quiz • Add to Terminology Spreadsheet from Chapter 8 • Complete LAB SIMS for Chapter 8 (14 total) • Review and discuss CTE Week and booth build • Perform week 20 LAB TIME by evaluating the current and potential RAM of the computer build / discuss the Pros and Cons of increasing RAM <p>http://www.professormesser.com/free-a-plus-training/220-801/how-to-install-bios-upgrades/</p>

		<p>http://www.professormesser.com/free-a-plus-training/220-801/working-with-your-computers-bios/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/configuring-your-bios-settings/</p>
3	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 11: Hard Drive Technologies</p> <ul style="list-style-type: none"> • Explain how hard drives work • Identify and explain the PATA and SATA hard drive interfaces • Identify and explain the SCSI hard drive technologies • Describe how to protect data with RAID • Install hard drives • Configure CMOS and install drivers • Troubleshoot hard drive installations <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Verify the Hard Drives in computer build • Determine the RAID capabilities of the computer build / what would be needed for RAID 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 11 in pairs taking notes • Review Chapter 11 Power Point individually • Watch Professor Messer videos on PATA, SATA, and SCSI Hard Drives & RAID • Play Brain Game review with instructor prior to taking Chapter 11 quiz • Add to Terminology Spreadsheet from Chapter 11 • Complete LAB SIMS for Chapter 11 (27 total) • Review and discuss CTE Week and booth build • Perform week 21 LAB TIME by verifying the Hard Drives in the computer build and determining the RAID capabilities or what would be needed <p>http://www.professormesser.com/free-a-plus-training/220-801/understanding-pata/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/understanding-sata/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/understanding-scsi/</p> <p>http://www.professormesser.com/free-a-plus-training/220-801/an-overview-of-raid/</p>
4	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 12: Implementing Hard Drives</p> <ul style="list-style-type: none"> • Explain the partitions available in Windows • Discuss hard drive formatting options • Partition and format hard drives 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 12 in pairs taking notes • Review Chapter 12 Power Point individually • Watch Professor Messer videos on Hard Drive

	<ul style="list-style-type: none"> Maintain and troubleshoot hard drives <p>LAB TIME Activity</p> <ul style="list-style-type: none"> Verify the configuration of the Hard Drives in computer build Determine of changes should have been made and if configuration is optimal 	<p style="text-align: right;">troubleshooting</p> <ul style="list-style-type: none"> Play Brain Game review with instructor prior to taking Chapter 12 quiz Add to Terminology Spreadsheet from Chapter 12 Complete LAB SIMS for Chapter 12 (31 total) Review and discuss CTE Week and booth build Perform week 22 LAB TIME by verifying the configuration of the Hard Drives in the computer build and determining the optimal configuration <p>http://www.professormesser.com/free-a-plus-training/220-802/troubleshooting-hard-drives/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/troubleshooting-hard-drives/</p>
5	<p>CTE WEEK</p> <p>CTE Booth Project /</p> <ul style="list-style-type: none"> Completion of CTE Week Booth Preparation Booth Mock-up Interactives Completion IT Academy Clean-up and Organization 	<p>Students will:</p> <ul style="list-style-type: none"> Participate in vocabulary and writing builders Take the Strata Certification Practice Exam to check for progress against the baseline score Working on completing CTE Booth and any other items needed for CTE Open House Showing parents/family IT Academy on FAMILY DAY Working in the CTE Booth during Open House Tear down and clean-up from CTE Week Complete any incomplete LAB SIMS
6	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 13: Removable Media</p> <ul style="list-style-type: none"> Explain and install floppy disk drives Demonstrate the variations among flash drives and other tiny drives Identify and install optical-media technology Troubleshoot removable media <p>LAB TIME Activity</p> <ul style="list-style-type: none"> Utilized Removable Media with the computer build <p>Technical Writing</p> <ul style="list-style-type: none"> Review Technical Essay #3 and complete pre-write activity 	<p>Students will:</p> <ul style="list-style-type: none"> Participate in vocabulary and writing builders Take the Strata Certification Practice Exam to check for progress against the baseline score Read Chapter 13 in pairs taking notes Review Chapter 13 Power Point individually Watch Professor Messer videos on External Storage Drive Connection Types Play Brain Game review with instructor prior to taking Chapter 13 quiz Add to Terminology Spreadsheet from Chapter 13 Complete LAB SIMS for Chapter 13 (19 total) Review Technical Essay #3 prompt Complete Technical Essay #3 pre-write

		<ul style="list-style-type: none"> • Perform week 24 LAB TIME by using Removable Media with the computer build <p>http://www.professormesser.com/free-a-plus-training/220-801/external-storage-device-connection-types/</p>
7	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 14: Installing and Upgrading Windows</p> <ul style="list-style-type: none"> • Identify and implement pre-installation tasks • Install and upgrade Windows XP, Vista, and 7 • Troubleshoot installation problems • Identify and implement post-installation tasks <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Evaluate potential upgrades needed for Windows on the computer build <p>Technical Writing</p> <ul style="list-style-type: none"> • Research and begin writing Technical Essay #3 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 14 in pairs taking notes • Review Chapter 14 Power Point individually • Watch Professor Messer videos on Installing and Upgrading Windows • Play Brain Game review with instructor prior to taking Chapter 14 quiz • Add to Terminology Spreadsheet from Chapter 14 • Complete LAB SIMS for Chapter 14 (22 total) • Research and begin writing Technical Essay #3 • Perform week 25 LAB TIME by evaluating potential upgrades needed for Windows on the computer build <p>http://www.professormesser.com/free-a-plus-training/220-802/planning-a-windows-installation-2/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/windows-upgrade-paths/</p>
8	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 15: Windows Under the Hood</p> <ul style="list-style-type: none"> • Work with the Registry • Understand and Observer in Detail the Windows Boot Process • Control Processes and Services • Explore Windows Tools for Programmers <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Review the Registry and Performance Tools on the computer build <p>Technical Writing</p>	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 15 in pairs taking notes • Review Chapter 15 Power Point individually • Watch Professor Messer videos on Windows Performance Tools • Play Brain Game review with instructor prior to taking Chapter 15 quiz • Add to Terminology Spreadsheet from Chapter 15 • Complete LAB SIMS for Chapter 15 (27 total) • Research and write Technical Essay #3

	<ul style="list-style-type: none"> • Research and write Technical Essay #3 	<ul style="list-style-type: none"> • Perform week 26 LAB TIME by reviewing the Registry and Performance Tools on the computer build <p>http://www.professormesser.com/free-a-plus-training/220-802/using-windows-performance-monitor/</p>
9	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 16: NTFS, Users, and Groups</p> <ul style="list-style-type: none"> • Create and administer Windows user accounts and groups • Define and use NTFS permissions for authorization • Share a Windows computer securely • Secure PCs with User Account Control <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Review the setting for Users/Groups and the User Security settings on the computer build <p>Technical Writing</p> <ul style="list-style-type: none"> • Finish Technical Essay #3 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 16 in pairs taking notes • Review Chapter 16 Power Point individually • Watch Professor Messer videos on Users and Groups and Local Security Policy • Play Brain Game review with instructor prior to taking Chapter 16 quiz • Add to Terminology Spreadsheet from Chapter 16 • Complete LAB SIMS for Chapter 16 (22 total) • Complete Technical Essay #3 • Perform week 26 LAB TIME by reviewing the settings for Users/Groups and the User Security settings on the computer build <p>http://www.professormesser.com/free-a-plus-training/220-802/windows-users-and-groups/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/windows-local-security-policy/</p>
10	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 17: Maintaining and Optimizing Windows</p> <ul style="list-style-type: none"> • Perform Maintenance Tasks in Windows • Optimize Windows • Prepare Windows for Problems <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Review the Task Manager and Task Scheduler on the computer build and adjust the settings for your needs 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 17 in pairs taking notes • Review Chapter 17 Power Point individually • Watch Professor Messer videos on Maintaining Windows • Play Brain Game review with instructor prior to taking Chapter 17 quiz • Add to Terminology Spreadsheet from Chapter 17 • Complete LAB SIMS for Chapter 17 (17 total) • Perform week 27 LAB TIME by the Task Manager

		<p>and Task Scheduler on the computer build and adjust the settings as needed</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/using-windows-task-manager/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/using-windows-task-scheduler/</p>
11	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 18: Working with the Command Line Interface</p> <ul style="list-style-type: none"> • Explain the operation of the command-line interface • Execute fundamental commands from the command line • Manipulate files and folders from the command line <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Use and explore the Command Prompt on the computer build <p>INTERNSHIP</p> <ul style="list-style-type: none"> • Review and prepare the 4-week Internship 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 18 individually taking notes • Review Chapter 18 Power Point individually • Watch Professor Messer videos on Using the Windows Command Prompt • Play Brain Game review with instructor prior to taking Chapter 18 quiz • Add to Terminology Spreadsheet from Chapter 18 • Complete LAB SIMS for Chapter 18 (21 total) • Prepare for the 4-week Internship • Perform week 28 LAB TIME by using and exploring the Command Prompt on the computer build <p>http://www.professormesser.com/free-a-plus-training/220-802/operating-system-command-line-tools/</p> <p>http://www.professormesser.com/free-a-plus-training/220-802/using-the-windows-recovery-console-and-command-prompt/</p>
12	<p>INTERNSHIP</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to MACC Internship Guidelines 	<p>Students will:</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to the MACC Internship Guidelines to gain valuable hands-on experience • Keep a journal daily on the activities involved in at the Internship location • Perform any approved tasks at the Internship location • Meet all required reporting requirements for documentation purposes

13	<p>INTERNSHIP</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to MACC Internship Guidelines 	<p>Students will:</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to the MACC Internship Guidelines to gain valuable hands-on experience • Keep a journal daily on the activities involved in at the Internship location • Perform any approved tasks at the Internship location • Meet all required reporting requirements for documentation purposes
14	<p>INTERNSHIP</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to MACC Internship Guidelines 	<p>Students will:</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to the MACC Internship Guidelines to gain valuable hands-on experience • Keep a journal daily on the activities involved in at the Internship location • Perform any approved tasks at the Internship location • Meet all required reporting requirements for documentation purposes
15	<p>INTERNSHIP</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to MACC Internship Guidelines 	<p>Students will:</p> <ul style="list-style-type: none"> • Serve a 4-week Internship according to the MACC Internship Guidelines to gain valuable hands-on experience • Keep a journal daily on the activities involved in at the Internship location • Perform any approved tasks at the Internship location • Meet all required reporting requirements for documentation purposes
16	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 29: Securing Computers</p> <ul style="list-style-type: none"> • Explain the threats to your computers and data • Describe key security concepts and technologies • Explain how to protect computers from network threats <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Review Security settings on the computer build and adjust for proper security 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 29 individually taking notes • Review Chapter 29 Power Point individually • Watch Professor Messer videos on Security • Play Brain Game review with instructor prior to taking Chapter 29 quiz • Add to Terminology Spreadsheet from Chapter 29

	<p>INTERNSHIP</p> <ul style="list-style-type: none"> • Complete any Internship documentation that needs to be turned in 	<ul style="list-style-type: none"> • Complete LAB SIMS for Chapter 29 (55 total) • Complete Internship documentation • Perform week 28 LAB TIME by reviewing the Security settings on the computer build and adjust as needed for proper security <p>http://www.professormesser.com/free-a-plus-training/220-802/workstation-security-best-practices/</p>
17	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Chapter 22: Local Area Networking</p> <ul style="list-style-type: none"> • Install and troubleshoot structured cabling • Explain the basics of TCP/IP • Install and configure wired networks • Troubleshoot wired networks <p>LAB TIME Activity</p> <ul style="list-style-type: none"> • Setup, connect to, and participate in a Local Area Network Activity <p>INTERNSHIP</p> <ul style="list-style-type: none"> • Complete any Internship documentation that needs to be turned in 	<p>Students will:</p> <ul style="list-style-type: none"> • Participate in vocabulary and writing builders • Take the Strata Certification Practice Exam to check for progress against the baseline score • Read Chapter 22 individually taking notes • Review Chapter 22 Power Point individually • Watch Professor Messer video on Common Network Protocols • Play Brain Game review with instructor prior to taking Chapter 22 quiz • Add to Terminology Spreadsheet from Chapter 22 • Complete LAB SIMS for Chapter 22 (10 total) • Complete Internship documentation • Perform week 28 LAB TIME by setting up, connecting to, and participating in a LAN activity <p>http://www.professormesser.com/free-a-plus-training/220-801/common-network-protocols/</p>
18	<p>A+ Guide To Managing And Troubleshooting PCs</p> <p>Internship</p> <ul style="list-style-type: none"> • Self-evaluate the Internship and provide a 1 page overview of the experience • Discuss Pros and Cons for the Internship experience <p>Semester 2 Exam</p> <ul style="list-style-type: none"> • Review for and take Semester 1 Exam 	<p>Students will:</p> <ul style="list-style-type: none"> • Take the Strata Certification Practice Exam to check for progress against the baseline score • Play Brain Game to review with instructor for Semester Exam 2 • Complete Semester 2 Exam Study Guide • Review Terminology Spreadsheet for Semester 2 Exam • Complete written overview of Internship experience • Complete any missing LAB SIMS • Study for and take Semester 1 Exam