American Public University System

The Ultimate Advantage is an Educated Mind

School of Science and Technology Department of Information Technology ISSC323: Computer Hardware Systems 3 Credit Hours 8 Week Course Prerequisite(s): None

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Instructor Information

Instructor: (Bio)

Email: Phone: Office hours:

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Course Description

This course is a technical study of the hardware systems and architectures in a computer system; it appraises expansion cards, storage subsystems, IO interface subsystems, operating system, Local Area Networking (LAN), Internet connectivity, and security. This course also examines the processes for analyzing problems and for synthesizing solutions related to computer hardware systems. This course covers curriculum related to the CompTIA A+ 220-603 and the CompTIA A+ 220-604 certification exams.

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Course Scope

This course is targeted for individuals who work or intend to work in a remote-based work environment where client interaction, client training, operating system and connectivity issues are emphasized. Also targeted for individuals who work or intend to work in settings where hardware related activities are emphasized. The course covers the areas of proficiency to master the required skills and knowledge.

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Course Objectives

The successful student will fulfill the following learning objectives:

- 1. Install, maintain, and troubleshoot expansion cards, hard drives, printers and scanners
- 2. Manage files, operating system settings, and the Registry.
- 3. Monitor the operating system and control event logging
- 4. Configure a LAN networking connection and share resources on the network.
- 5. Create an Internet connection and implement network protection measures
- 6. Secure the operating system and computer data
- 7. Add, test, and troubleshoot memory in desktop and laptop computers. Add, replace, and troubleshoot components specific to portable computers and devices.
- 8. Establish both a wired and wireless network connection

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Course Delivery Method

This is an 8 week course delivered in the APUS Educator; distance learning will enable students to complete academic work in a flexible manner, completely online. Resources and access to an online learning management system will be made available to each student. **Online assignments are due by the last day of each week** and include Forum questions (accomplished in groups through a threaded Forum), examinations and quizzes (graded electronically), and individual assignments (submitted for review by the Faculty Member). Assigned faculty will support the students throughout this eight-week course.

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Resources

Required Text

Sandler, C. (2007). Fix Your Own PC. Eight Edition. IS.BN: 0470107871

Book is available as e-text in the classroom under the COURSE TOOLS area and the Resources link. Bonus Appendix materials are also included as e-text resources and complement the textbook

Software Requirements

- 1. Microsoft Office (MS Word, MS Excel, MS PowerPoint) or comparable word processing application
- 2. Adobe Acrobat Reader or comparable PDF viewer

Evaluation Procedures

The grading will be based on five graded assignments, eight weekly Forum postings, an individual project paper and a presentation, five open book guizzes, and an open book final examination.

1. Assignments (5)

There will be five assignments (4% each) counting a total of 20% of the final grade. The assignments will follow each of the major milestones of the course. These assignments will be problems or questions from the text. They are a combination of Lesson Reviews and Lesson Activities and/or Labs. They are selected to provide the student with information to understand the concepts discussed.

NOTE: Submitted assignments are time stamped using east coast time. This time stamp is my verification of an on time submittal. If you live in another time zone, keep this in mind when you submit assignments. Use the time zone converter at this link http://www.timezoneconverter.com/cgi-bin/tzc.tzc to help you submit assignments in a timely manner.

Written assignments – term project/PPE/database exercise submission instructions:

- 1. Log into the classroom
- 2. Click the "assignments" link
- 3. Click the corresponding assignment (i.e. ISSC323 Week 1 Assignment)
- 4. Upload file to the assignment. Ensure the file is a MS Word document
- 5. Check the box "submit for grading"
- 6. Click the "submit" button

2. Forum Discussions (8)

There will be eight weekly Forum postings (3% each) you will need to respond to. Initial weekly post should be 2-3 paragraphs with a topic sentence that restates the question and supporting sentences using the terms, concepts, and theories from the required readings. Each answer should be a minimum of 250 to 400 words (about 6 or 7 sentences). In addition, you may attack, support or supplement at least two (2) other students' answers using the terms, concepts and theories from the required readings. All responses should be a courteous paragraph that contains a topic sentence with good supporting sentences of at least 100 words. You may respond multiple times with a continuous discussion with points and counter points. The key requirement is to express your idea and then support your position using the terms, concepts and theories from the required readings to demonstrate to me that you understand the material. The Forum postings will count as 24% of the total grade (3.00% for each weekly interaction).

In an online environment communication and exchange of ideas is critical. These Forum postings allow us the opportunity to discuss trends in the technology we are studying, future possibilities, updates and above all, allow us an opportunity to get to know each other and work as a group. This can only happen, when students and instructors work together. It is not out of the ordinary when students participate in a "hot" discussion and the exchange of ideas and arguments is achieved. Forum submissions are due by Wednesday of each week, in order to give other students the opportunity to read your post and respond.

Instructions to review and submit Forum input:

- 1. Log into the classroom
- 2. Click the "Forum" link
- 3. Click the appropriate Forum under the column labeled "Group Name"
- 4. Choose a specific thread to see all the messages and choose a specific message to reply.
- 5. Click on the "reply to this message" link.
- 6. Provide your input.
- 7. Click the "submit" button.

Forum Grading Rubric

Your post should add value to the classroom discussions to be counted for participation. It can be a new analogy, scenario, case study, different viewpoint or even a good question.

3. Quizzes (7)

The Quizzes will each be non-proctored tests. Quizzes count as 21% (3% each) of the final grade. They will be short essay (5 of the 7) and will be open book and open note. In addition quizzes 7 and 8 will be multiple choice. Since the quizzes results are posted automatically after you take them, they may indicate an erroneous zero grade, as they are short essays and they have to be manually graded by me. Ignore the immediate zero, the actual grade will show up in a few days after the due date of the quiz. The multiple choice guizzes (7 & 8) will be autograded.

4. Case Study (1)

Total Grade for the case study will be 15% of the total grade, and it is due the 3rd week of class.

You are a star consultant from "Hardware R US" IT consulting and managing firm. Just graduated from APUS and this is your first critical job. You just got hired by "Home Solutions Inc" a construction and parts company to help them with their hardware and networking needs. Your specific tasks to help the business are the percentages that correspond to the per item payment (grade weight):

- A) For 50% of the payment (Grade): The owner badly needs a new desktop business computer, he is still running a Windows NT relic, but he can only afford \$1,000 for it. You need make sure that you assemble a desktop for that amount, which should include:
 - 1) All the components within the tower PC, assume a Windows 7 PC, do not include operating system costs though.
 - 2) Any peripherals such as monitor, mouse, keyboard
 - 3) Any networking components that may be needed
 - 4) Detailed cost component by component
 - 5) Explanation of why this specific component was chosen vs. some other one
- B) For 50% of the payment (Grade): The owner also has a son that he has promised a GAMER PC to him, since he is helping him out in the business. He can only spare another \$1,000 for this one as well. It will need to be networked to the Business PC and should also include:
 - 1) All the components within the tower PC, assume a Windows 7 PC, do not include operating system costs though.
 - 2) Any peripherals such as monitor, mouse, keyboard
 - 3) Any networking components that may be needed
 - 4) Detailed cost component by component
 - 5) Explanation of why this specific component was chosen vs. some other one

For the above project, make sure that <u>you include a spreadsheet</u>, that can easily track the cost of each <u>component</u> that you have decided to include. You can search in the internet in sites like newegg.com, motherboards.org, or any other site that you choose, as long as it is properly referenced. Each item must be listed with its price and a grand total of \$1,000 for each PC must be there to verify the budget. If

decide to do wireless networking, the cost of it must be included in the cost of one of the two systems. In any case do explain the networking details of the two PCs.

The case study must be submitted as a Word document in the assignment area, with a minimum of1,000 words.

5. Project Proposal, Paper & Presentation (1)

There will be one project proposal (3%) one paper (12%) and a presentation (5%) throughout the session, counting as 20% of the final grade.

A) **Project Proposal (3%)** Complete and submit the class Project Proposal Abstract, on the proposed project. It should be a formal abstract, of at least 400 words minimum. It will be needed, in order to get the go-ahead approval for your term project. **Due week 4**

B) Project Paper and Presentation (17%)

Project Paper and Presentation: (Post them under Week 7 Assignment area as a Microsoft Word document (15%) and a Microsoft PowerPoint Presentation (5%). You must include at least ten references. **Due week 8**

Details of the Project:

Research and select a current trend in the area of Computer Technology. Prepare a 6-8 page paper in Microsoft Word (counts as 12% of the final grade) AMU approved APA format (see writing expectations in the Policies section) (300-350 words per page).

At a minimum include the following:

- Detailed description of the area researched
- Technology involved in the area
- Future trends in the area
- Example companies involved in the area
- Regulatory issues surrounding the area
- Global implications for the area
- References (minimum of 10)
- i. Prepare a 6-8 slide Microsoft PowerPoint highlighting the content from the paper.(Counts as 5% of the final grade)
- ii. You are only required to submit a final paper and presentation. However, during the previous six weeks, you will be assembling the research paper and presentation. Feel free to post questions or portions of the paper for review at any time as an email to your professor.
- iii. You may use resources from the APUS Online Library, any library, government library, or any peer-reviewed reference (Wikipedia and any other publicly-reviewed source is not accepted). The paper must

by at least 6-8 pages double-spaced, 1" margin all around, black, 12 point fonts (Times New Roman, Arial, or Courier) with correct citations of all utilized references/sources, (pictures, graphics, etc are extra-allowed but extra for the minimum page count). The title page and references are also required but don't count in the minimum page count. The PowerPoint of 6-8 slides is a summary of this paper. No new topics, ideas or concepts are introduced in the PowerPoint that is not included in the paper. A minimum of 10 references are needed. The paper will be subjected to checking against plagiarism, see item v. below.

iv. The required number of pages do not include title or references pages - although these must be included.

v. Project Paper submission details

Make sure you submit your paper through the APUS classroom (for grading) Turnltln.com (for plagiarism checking) will be utilized. Name your file LastnameFirstnameTermPaper (eg., HandKarenTermPaper) and upload it to the Assignment section of the classroom.

All assignments, Forum postings, Quizzes and tests are due by Sunday 11:59 PM Eastern Time

Grade Instruments	Points Possible	% of Final Grade
Forum Posts 1 – 8 (8, 100 points each- 3%)	800	24%
Assignment wk2 - wk6 (5, 100 points each - 4%)	500	20%
Quizzes wk2 – wk8 (7, 100 points each - 3%)	700	21%
Project Proposal (1, 100 points, 3%)	100	3%
Project Paper and Presentation (1, 100 points, 17%)	100	17%
Case Study (1, 100 points, 15%)	100	15%
TOTAL	2300 Points	100%

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Grading Scale

Please see the student handbook to reference the University's grading scale.

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Course Outline

Week	Dates	Lesson Subject	Assignments	
1	Monday to	CO1	Course Begins	
	Sunday of Week 1	Lesson 1: Microprocessor	Reading: Chapters 1-2 &	

OI APU			
			Appendix A-B *Forum: Week 1 Discussion including Personal Introduction
2	Monday to Sunday of Week 2	CO2 Lesson 2: BIOS/ The Computer Bus	Reading: Chapters 3-7 & Appendix C *Forum: Week 2 Discussion *Assignment wk2: Lesson 1 *Quiz wk2
3	Monday to Sunday of Week 3	CO3 Lesson 3: Memory and Hard Drives Case Study	Reading: Chapters 8,10,11. Also Read Chapters 9, 12, 13, 14 and Appendix F *Forum: Week 3 Discussion *Assignment wk3: Lesson 2 *Quiz wk3 *Case Study is due
4	Monday to Sunday of Week 4	CO4 Lesson 4: External Serial, USB, eSATA, and FireWire Connections Project Proposal	Reading: Chapter 15. Also read Chapters 16-19 *Forum: Week 4 Discussion *Assignment wk4: Lesson 3 *Quiz wk4 * Project Proposal is due
5	Monday to Sunday of Week 5	CO5 Lesson 5: Networks, Gateways, Routers, and WiFi Wireless	Reading: Chapters 20-21 *Forum: Week 5 Discussion *Assignment wk5: Lesson 4 *Quiz wk5
6	Monday to Sunday of Week 6	CO6 Lesson 6: Antivirus, Utility, and Diagnostic Programs	Reading: Chapters 22-23 & Appendix D, E *Forum: Week 6 Discussion *Assignment wk6: Lesson 5 *Quiz wk6
7	Monday to Sunday of Week 7	CO7 & CO8 Lesson 1-6 Review	*Forum: Week 7 Discussion *Quiz wk7
8	Monday to Sunday of Week	Course Assessment Project Paper & Project Presentation	*Forum: Week 8 Discussion * Quiz wk8 * Project Paper & Project Presentation Course Ends

Course Overview

Course Deadlines/Milestones

- Participation in Forum discussions is required for Week 1 through Week 8
- End of Third Week: Case Study is due
- End of Fourth Week: Project Proposal is due
- End of Sixth Week: Lessons 1-5 completed, Assignments wk2 wk6 submitted, and Quizzes wk2-wk6 due to Professor, on a weekly basis
- End of Seventh Week: Quiz7
- Eight Week: Quiz wk8, Project Paper and Project Presentation due to Professor

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Policies

Please see the <u>student handbook</u> to reference all University policies. Quick links to frequently asked question about policies are listed below.

Drop/Withdrawal Policy
Plagiarism Policy
Extension Process and Policy

WRITING EXPECTATIONS

All written submissions should be submitted in a font and page set-up that is readable and neat. It is recommended that students try to adhere to a consistent format, which is described below.

- Typewritten in double-spaced format with a readable style and font and submitted inside the
 electronic classroom (unless classroom access is not possible and other arrangements have
 been approved by the professor).
- Arial 11 or 12-point font or Times New Roman styles.
- Page margins Top, Bottom, Left Side and Right Side = 1 inch, with reasonable accommodation being made for special situations and online submission variances.

CITATION AND REFERENCE STYLE

Assignments completed in a narrative essay or composition format must follow APA guidelines. This course will require students to use the citation and reference style established by the American Psychological Association (APA), in which case students should follow the guidelines set forth in *Publication Manual of the American Psychological Association* (6th ed.). (2010). Washington, D.C.: American Psychological Association.

LATE ASSIGNMENTS

Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals I understand you must manage competing demands on your time. Should you need additional time to complete an assignment please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine submission of late assignments is unacceptable and may result in points deducted from your final course grade. Assignments submitted late without a prearranged extension will be subject to a 10% late penalty. No late assignments will be accepted after the last day of the course.

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Academic Services

ONLINE LIBRARY RESEARCH CENTER & LEARNING RESOURCES

The Online Library Resource Center is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Center provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to orc@apus.edu.

- Charles Town Library and Inter Library Loan: The University maintains a special library with a limited number of supporting volumes, collection of our professors' publication, and services to search and borrow research books and articles from other libraries.
- **Electronic Books:** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.

- *Electronic Journals:* The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- Turnitin.com: <u>Turnitin.com</u> is a tool to improve student research skills that also detect plagiarism. Turnitin.com provides resources on developing topics and assignments that encourage and guide students in producing papers that are intellectually honest, original in thought, and clear in expression. This tool helps ensure a culture of adherence to the University's standards for intellectual honesty. Turnitin.com also reviews students' papers for matches with Internet materials and with thousands of student papers in its database, and returns an Originality Report to instructors and/or students.
- **Smarthinking:** Students have access to 10 free hours of tutoring service per year through Smarthinking. Tutoring is available in the following subjects: math (basic math through advanced calculus), science (biology, chemistry, and physics), **accounting**, **statistics**, **economics**, Spanish, writing, grammar, and more. Additional information is located in the Online Research Center. From the ORC home page, click on either the "Writing Center" or "Tutoring Center" and then click "Smarthinking." All login information is available.

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Appendix A – Grading Rubric

All written assignments will be assessed according to this rubric. Note that a score of 0 may be assigned in any category where your work does not meet the criteria for the beginning level.

APUS Assignment					
Rubric	EXEMPLARY	ACCOMPLISHED	DEVELOPING	BEGINNNIG	TOTAL
Undergraduate Level	LEVEL	LEVEL	LEVEL	LEVEL	POINTS
300-400	4	3	2	1	
FOCUS/THESIS	Student exhibits a defined and clear understanding of the assignment. Thesis is clearly defined and well constructed to help guide the reader throughout the assignment. Student builds upon the thesis of the assignment with well-documented and exceptional supporting facts, figures, and/or statements.	Establishes a good comprehension of topic and in the building of the thesis. Student demonstrates an effective presentation of thesis, with most support statements helping to support the key focus of assignment.	Student exhibits a basic understanding of the intended assignment, but the thesis is not fully supported throughout the assignment. While thesis helps to guide the development of the assignment, the reader may have some difficulty in seeing linkages between thoughts. While student has included a few supporting facts and statements, this has limited the quality of the assignment.	Exhibits a limited understanding of the assignment. Reader is unable to follow the logic used for the thesis and development of key themes. Introduction of thesis is not clearly evident, and reader must look deeper to discover the focus of the writer. Student's writing is weak in the inclusion of supporting facts or statements.	10
CONTENT/SUBJECT KNOWLEDGE	Student demonstrates proficient command of the subject matter in the assignment. Assignment shows an impressive level of depth of student's ability to relate course content to practical examples and applications. Student provides comprehensive analysis of details, facts, and concepts in a logical sequence.	Student exhibits above average usage of subject matter in assignment. Student provides above average ability in relating course content in examples given. Details and facts presented provide an adequate presentation of student's current level of subject matter knowledge.	The assignment reveals that the student has a general, fundamental understanding of the Resource. Whereas, there are areas of some concerning in the linkages provided between facts and supporting statements. Student generally explains concepts, but only meets the minimum requirements in this area.	Student tries to explain some concepts, but overlooks critical details. Assignment appears vague or incomplete in various segments. Student presents concepts in isolation, and does not perceive to have a logical sequencing of ideas.	20

CRITICAL THINKING	Student demonstrates a	Student exhibits a good	Student takes a common,	Student demonstrates	20
SKILLS	higher-level of critical thinking	command of critical	conventional approach in	beginning understanding	
	necessary for 300-400 level	thinking skills in the	guiding the reader through	of key concepts, but	
	work. Learner provides a	presentation of material	various linkages and	overlooks critical details.	
	strategic approach in	and supporting	connections presented in	Learner is unable to	
	presenting examples of	statements. Assignment	assignment. However,	apply information in a	
	problem solving or critical	demonstrates the	student presents a limited	problem-solving fashion.	
	thinking, while drawing logical	student's above average	perspective on key	Student presents	
	conclusions which are not	use of relating concepts by	concepts throughout	confusing statements	
	immediately obvious. Student	using a variety of factors.	assignment. Student	and facts in assignment.	
	provides well-supported ideas	Overall, student provides	appears to have problems	No evidence or little	
	and reflection with a variety of	adequate conclusions,	applying information in a	semblance of critical	
	current and/or world views in	with 2 or fewer errors.	problem-solving manner.	thinking skills.	
	the assignment. Student			_	
	presents a genuine intellectual				
	development of ideas				
	throughout assignment.				
ORGANIZATION OF	Student thoroughly	Student explains the	Learner applies some	Assignment reveals	20
IDEAS/FORMAT	understands and excels in	majority of points and	points and concepts	formatting errors and a	
	explaining all major points. An	concepts in the	incorrectly. Student uses	lack of organization.	
	original, unique, and/or	assignment. Learner	a variety of formatting	Student presents an	
	imaginative approach to	demonstrates a good skill	styles, with some	incomplete attempt to	
	overall ideas, concepts, and	level in formatting and	inconsistencies throughout	provide linkages or	
	findings is presented. Overall	organizing material in	the paper. Assignment	explanation of key	
	format of assignment includes	assignment. Student	does not have a	terms. The lack of	
	an appropriate introduction (or	presents an above	continuous pattern of	appropriate references	
	abstract), well- developed	average level of	logical sequencing.	or source materials	
	paragraphs, and conclusion.	preparedness, with a few	Student uses less than 3	demonstrates the	
	Finished assignment	formatting errors.	sources or references.	student's need for	
	demonstrates student's ability	Assignment contains less		additional help or	
	to plan and organize research	than 5 resources.		training in this area.	
	in a logical sequence. Student uses at least of 5-7 references			Student needs to review and revise the	
WRITING	in assignment. Student demonstrates an	Student provides an	Assignment reflects basic	assignment. Topics, concepts, and	20
CONVENTIONS	excellent command of	effective display of good	writing and grammar, but	ideas are not coherently	20
(GRAMMAR &	grammar, as well as presents	writing and grammar.	more than 5 errors. Key	discussed or expressed	
MECHANICS)	research in a clear and	Assignment reflects	terms and concepts are	in assignments.	
in Estimates,	concise writing style. Presents	student's ability to select	somewhat vague and not	Student's writing style is	
	a thorough, extensive	appropriate word usage	completely explained by	weak and needs	
	a anorough, oxtorioive	appropriate word asage	completely explained by	Would and Hoods	

	understanding of word usage. Student excels in the selection and development of a well- planned research assignment. Assignment is error-free and reflects student's ability to prepare a high-quality academic assignment.	and present an above average presentation of a given topic or issue. Assignment appears to be well written with no more than 3-5 errors. Student provides a final written product that covers the above-minimal requirements.	student. Student uses a basic vocabulary in assignment. Student's writing ability is average, but demonstrates a basic understanding of the subject matter.	improvement, along with numerous proofreading errors. Assignment lacks clarity, consistency, and correctness. Student needs to review and revise assignment.	
USE OF COMPUTER TECHNOLOGY/ APPLICATIONS	Student provides a high-caliber, formatted assignment. Learner exhibits excellent use of computer technology in the development of assignment. Quality and appropriateness of stated references demonstrate the student's ability to use technology to conduct applicable research. Given assignment includes appropriate word processing, spreadsheet and/or other computer applications as part of the final product.	Assignment presents an above-average use of formatting skills, with less than 3 errors. Students has a good command of computer applications to format information and/or figures in an appropriate format. Student uses at least two types of computer applications to produce a quality assignment.	Student demonstrates a basic knowledge of computer applications. Appearance of final assignment demonstrates the student's limited ability to format and present data. Resources used in assignment are limited. Student may need to obtain further help in the use of computer applications and Internet research.	Student needs to develop better formatting skills. The student may need to take additional training or obtain help from the Educator Help Desk while preparing an assignment. Research and resources presented in the assignment are limited. Student needs to expand research scope. The number of formatting errors is not acceptable.	10
TOTAL POINTS	,			'	100