



### **COURSE SYLLABUS/SPECIFICATION**

**CODE & TITLE:** ITCS441- System Administration II

**WEIGHT:** (2 - 2 - 3)

**PREREQUISITE:** ITCS 341

**DESCRIPTION:** This course provides critical knowledge and experience for IT professionals. Student will have the knowledge required to assemble components based on customer requirements, install, configure and maintain devices, PCs and software for end users, understand the basics of networking and security/forensics, properly and safely diagnose, resolve and document common hardware and software issues while applying troubleshooting skills. Student will also provide appropriate customer support; understand the basics of virtualization, desktop imaging, and deployment.

**OBJECTIVES:**

1. To explain commercial operating Systems functionality and components.
2. To configure commercial operating systems to suite personnel & corporate uses.
3. To explain troubleshooting techniques and executing them.
4. To explain the differences between mobile devices and standard PC architecture and functionality.

**SEMESTER:**  
**INSTRUCTOR :**  
**OFFICE L TEL.:**  
**EMAIL:**

**ACADEMIC YEAR:**

**Intended Learning Outcomes (ILOs):**

Upon successful completion of the course, students should be able to:

<b>A. Knowledge and Understanding</b>	
<b>A1</b>	<u>Concepts and Theories:</u> Demonstrate critical understanding of various Microsoft operating systems, its command line tools, some of its networking and security utilities as well as different Mobile devices and troubleshooting techniques.
<b>A2</b>	<u>Contemporary Trends, Problems and Research:</u> NA
<b>A3</b>	<u>Professional Responsibility:</u> NA

<b>B. Subject-specific Skills</b>	
<b>B1</b>	<u>Problem Solving:</u> Detect various system symptoms and choose the appropriate tool for troubleshooting it.
<b>B2</b>	<u>Modeling and Design:</u> NA
<b>B3</b>	<u>Application of Methods and Tools:</u> Perform preventive maintenance procedures using appropriate tools as well as use different command line tools to customize and configure the operating system.

<b>C. Critical-Thinking Skills</b>	
<b>C1</b>	<u>Analytic skills:</u> Analyze specific scenario and choose the appropriate security methods or the appropriate tools for configuring/ troubleshooting the system.
<b>C2</b>	<u>Synthetic:</u> NA
<b>C3</b>	<u>Creative Thinking and innovation:</u> NA

<b>D. General and Transferable Skills (other skills relevant to employability and personal development)</b>	
<b>D1</b>	<u>Communication:</u> Express and communicate ideas in written and oral form.
<b>D2</b>	<u>Teamwork and Leadership:</u> NA
<b>D3</b>	<u>Organizational and Developmental Skills:</u> Demonstrate ability to organize ideas and effectively allocate time in given assignment.
<b>D4</b>	<u>Ethics and Social Responsibility:</u> NA

Course Structures (Outline)						
Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	<b>Syllabus, Introduction</b>	Lecture	
2	2	2	A1, B3	<b>Operating Systems</b> 1.The Windows OS 2.Windows XP 3.Windows Vista 4.Windows 7 5.32 or 64 bit 6.Upgrading Windows 7.Windows Upgrade Advisor 8.Upgrade Paths	Lecture/ In-Lab Supervised Work	In-Lab Exercises
3	2	2	A1, B3, C1	<b>Installing Windows</b> 1.Hardware Requirements 2.Boot Methods 3.Hard Disk Partitioning 4.Partition Schemes and Types 5.File System Formatting-part I 6.File System Formatting-part II 7.Workgroup Vs. Domain 8.Factory Recovery Partitions	Lecture/ In-Lab Supervised Work	In-Lab Exercises
4-5	4	4	A1, B3	<b>Windows Command Line Tools</b> 1.OS Commands 2.TASKKILL 3.BootRec 4.Shutdown 5.Working with Directories- Part I 6.Working with Directories- Part II 7.FDISK	Lecture/ In-Lab Supervised Work	In-Lab Exercises/ Quiz1

				8.FORMAT 9.Copying Files 10. DISKPART 11. CHKDSK 12. DEL		
6	2	2	A1, B3	<b>Networking Command Line Tools</b> 1.PING 2.IPCONFIG 3.TRACERT 4.NETSTAT 5.NET 6.NSLOOKUP	Lecture/ In-Lab Supervised Work	In-Lab Exercises
7-8	4	4	A1, B3, C1, D1, D3	<b>Administrative Tools</b> 1.Computer Management 2.Device Manager 3.Local Security Policy 4.Performance Monitor 5.Services 6.Windows Memory Diagnostic 7.Windows Firewall 8.WFAS 9.MSCONFIG 10. Task Manager 11. Disk Management	Lecture/ In-Lab Supervised Work	In-Lab Exercises/ Assignment 1
9	2	2	A1, B3	<b>Control Panel Utilities</b> 1.Internet Options 2.Display 3.Folder Options 4.User Accounts 5.System 6.Power Options	Lecture/ In-Lab Supervised Work	In-Lab Exercises
10	2	2	A1, B3	<b>Configuring Windows Networking</b> 1.Windows 7 Homegroups 2.Network Shares 3.Mapping Drives 4.Network Types 5.Alternative IP Addresses	Lecture/-In-Lab Supervised Work	Major Test

11	2	2	A1, B3, C1	<b>Sharing Resources</b> 1.NTFS Vs. Share Permissions. 2.Allow Vs. Deny 3.Moving Vs. Copying.	Lecture/ In-Lab Supervised Work	In-Lab Exercises
12	2	2	A1, B3, C1	<b>Security</b> 1.Physical Security. 2.Digital Security. 3.User Education 4.Common Security Threats 5.Malware - Part I 6.Malware - Part II 7.Hard Drive Disposal 8.Securing A Wireless Network	Lecture/ In-Lab Supervised Work	In-Lab Exercises
13	2	2	A1, B3, C1	<b>Mobile</b> 1.Android Vs. iOS. 2.Mobile Features. 3.Bluetooth 4.Laptops Vs. Tablet PCs	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises/ Quiz2
14-15	4	4	A1, B1, B3, C1, D1, D3	<b>Troubleshooting</b> 1.Common Hard Drive Symptoms. 2.Hard Drive Troubleshooting Tools. 3.Common Display Symptoms 4.Troubleshooting Network Issues 5.Network Troubleshooting Tools 6.Common OS Symptoms 7.OS Troubleshooting Tools 8.Common Printer Symptoms	Lecture/ Class Discussion/ In-Lab Supervised Work/ Independent Learning/ Demonstration	In-Lab Exercises/ Assignment 2
16	2	-	A1, B1, C1	All Topics		Final Exam

**TEACHING MATERIALS:**

**TEXTBOOK(S):** CompTIA A+ Certification: Exam 220-802

**HANDOUT(S):** PowerPoint slides available on Moodle i.e. <http://www.ahlia.edu.bh/moodle>

**REFERENCE(S):** COMPTIA A+ CERTIFICATION Website  
<https://certification.comptia.org/getCertified/certifications/a.aspx>

**ASSESSMENT**

Type of Assessment	Description	ILOs	Weighting
In-Lab Exercises	Each of the In-Lab exercises consists of a set of practical tasks to be carried by the students during lab time and that will help in evaluating hands-on capability of the students.	B1, B3, C1	Formative
Quizzes	The purpose of the quiz is to assess the students' knowledge and understanding of the topics covered in the course like various Windows OS, its command line tools, different mobile devices, etc.. Students will be given two quizzes, each one is 30 minutes, and the best one will be considered.	A1, C1	10%
Major Test	The test will be an in-class 60 minutes exam that will consist of multiple choice questions, fill in the blank, short-answer and few essay questions. It will cover the topics studied in the first 10 weeks.	A1, C1	30%
Assignments	The students will be given 2 research based assignments each worth 15 marks and their average will be considered at the end.	A1, B1, C1, D1, D3	20%
Final Exam	The final exam is comprehensive and will be of two hours duration. It will consist of multiple choice questions, fill in the blank, short-answer and few essay questions.	A1, B1, C1	40%
<b>Overall</b>			<b>100%</b>

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