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**COLLEGE OF INFORMATION TECHNOLOGY**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**COURSE SYLLABUS/ SPECIFICATION**

**Course Code & Title: ITCS 341 - System Administration I**

**Weight: (2-2-3)**

**Prerequisite: ITCS 214**

**NQF Level Allocated: Level 7**

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| **NQF Notional Hours / Credits:**  **120 notional hours/ 12 NQF credit** |

**Description:** This course provides broad knowledge and experience for IT professional. Student will have the knowledge required to assemble components based on customer requirements, install, configure PCs and software for end users, and understand the basics of networking, properly and safely.

**Objective:**

1. To explain PCs, Laptops, printers & network hardware standards.
2. To explain Professional conduct & professional communications with clients.
3. To explain assembling, dissembling and installing PCs, laptops, printers & network cards, and expansion cards.

**Semester:**

**Instructor:**

**Office Telephone: Email (s):**   
**Intended Learning Outcomes (ILOs):**

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| 1. **Knowledge and Understanding** | | **NQF Descriptor/ Level** |
| **A1** | **Concepts and Theories:** Demonstrate detailed knowledge and understanding of computer components, peripheral devices and networking basic settings requirements. | Knowledge: theoretical understanding  [Level 7] |
| **A3** | **Professional Responsibility:** Demonstrate advanced knowledge and understanding of the professional conducts for IT professionals. | Knowledge: theoretical understanding  [Level 7] |

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| 1. **Subject-specific Skills** | | **NQF Descriptor/ Level** |
| **B1** | **Problem Solving:** Show ability to install, configure and troubleshoot various hardware and device components. | Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy  [Level7] |
| **B3** | **Application of Methods and Tools:** Install and expand devices by adding additional equipment through the usage of different tools such as standard technician toolkit and maintenance kit. | Knowledge: Practical Application [Level 7] Skills: Communication,  ICT & Numeracy [Level 7] |

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| 1. **Critical-Thinking Skills** | | **NQF Descriptor/ Level** |
| **C1** | **Analytic skills:** Compare and Contrast various configurations and choose the most appropriate as per user requirements as well as evaluate and select the appropriate component and operational procedures for a user configuration. | Generic Problem Solving  & Analytical skills  [Level 7] |

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| 1. **General and Transferable Skills (other skills relevant to employability and personal development)** | | **NQF Descriptor/ Level** |
| **D1** | **Communication:** Express and communicate ideas in written and oral form. | Communication, ICT and Numeracy Skills  [Level 7] |
| **D3** | **Organizational and Developmental Skills:** Demonstrate ability to organize ideas and effectively allocate time in given assignment. | Competence: Autonomy, Responsibility and  Context [Level 7] |

**Course Structure (Outline)**

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| **Week** | **Hours** | | **ILOs** | **Unit/Module or Topic Title** | **Teaching**  **Method** | **Assessment**  **Method** |
| **Lecture** | **Lab** |
| 1-2 | 4 | 4 | A1, B1, B3, C1 | **- Syllabus, Introduction**  **- Motherboards and expansion cards**   1. Differentiate between motherboard components and their purposes. 2. 2. Differentiate between expansion slots/ expansion cards and their properties | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 3 | 2 | 2 | A1, B1, B3, C1 | **CPUs and power supplies**   1. Differentiate among various CPU types and features and select the appropriate cooling method. 2. Power supply: know connector types, their voltages and properties | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 4 | 2 | 2 | A1, B1, B3, C1 | **Memory and physical storage**  Compare and contrast RAM  types and features | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 5-6 | 4 | 4 | A1, B1, B3, C1 | **Connections**  Compare and contrast various connection interfaces and explain their purpose. | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises/ Quiz1(Week 6) |
| 7 | 2 | 2 | A1, B1, B3, C1 | **Peripherals devices**  Install and configure various peripheral devices like: input devices, output devices and  multimedia devices | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 8 | 2 | 2 | A1, B1, B3, C1, D1, D3 | **Printers**  1. perform printer maintenance  2. Install, and configure printers  3. Explain the differences between the various printer types and summarize the associated imaging process. | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises/ Assignment 1 |
| 9 | 2 | 2 | A1, B1, B3, C1 | **Notebooks**   1. Compare and contrast laptop features. 2. Compare and contrast the components within the display of a laptop. 3. Install and configure laptop hardware and components. | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 10-11 | 4 | 4 | A1, B1, B3, C1 | **Networking Basics**  Identify various types of networks**.** | Lecture/ Class Discussion/ In-Lab Supervised Work | Major Test  (Week 11) |
| 12 | 2 | 2 | A1, B1, B3, C1 | **The Physical Network**  1. Identify types of network cables and connectors.  2. Categorize characteristics of connectors and cabling.  3. Compare and contrast network devices, their  Functions, and features. | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 13 | 2 | 2 | A1, B1, B3, C1 | **Networking Protocols**   1. Explain properties and characteristics of TCP/IP. 2. Explain common TCP and UDP ports, protocols, and their purpose. | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises |
| 14 | 2 | 2 | A1, B1, B3, C1 | **Wireless Networking**  Compare and contrast wireless networking standards and encryption types. | Lecture/ Class Discussion/ In-Lab Supervised Work | In-Lab Exercises/ Quiz2 |
| 15 | 2 | 2 | A1, B1, B3, C1, D1, D3,  A3 | **Professional Conducts** | Lecture/ Class Discussion/ Debate | Assignment 2 |
| 16 | 2 | - | A1, B1, C1,  A3 | **All Topics** |  | Final Exam |

**Teaching Materials:**

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| **Textbook(s):** | CompTIA A+ Certification |
| **Handout(s):** | Available on Moodle i.e. <http://www.ahlia.edu.bh/moodle> |
| **Reference(s):** | <https://certification.comptia.org/getCertified/certifications/a.aspx> |

**Assessments:**

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| **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 computer components, its peripherals and networking concepts. Students will be given two quizzes, each one is 30 minutes, and the best one will be considered. | A1, B1, 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, B1, 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, A3 | 40% |
| **Overall** |  |  | **100%** |

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| **Admissions** | |
| **Minimum number of students** | **5** |
| **Maximum number of students** | **20** |

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| **Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see** [www.ahlia.edu.bh/integrity](http://www.ahlia.edu.bh/integrity) **for more information).** |