**INSTITUTE OF TECHNOLOGY**
Name of College

**Diploma in Information Communication Technology**
Course/Department

**1.0 Course Code : ICT 114**

**2.0 Course Title : Basic Computer Hardware Servicing**

**3.0 Course Credit :**

| | | | | | |
|---|---|---|---|---|---|
| Lecture: | 2 units | Laboratory: | 1 unit | Total Units: | 3 units |

**Hours Equivalent : 90 hrs.**

| | | | | | |
|---|---|---|---|---|---|
| Lecture: | 2 hrs. | Laboratory: | 3 hrs. | Total Hours: | 5 hrs. |

**4.0 Course Description:**

This course aimed at providing students' knowledge in system optimization, troubleshooting faults, servicing of computers, printers and power supply units in an organization or a set up. Basic Computer Hardware Servicing dealt with the fundamental of computer as well as the basic steps/approach on how to handle/troubleshoot hardware problems/issues.

**5.0 Course Pre-Requisites: None**

**6.0 Vision and Mission Statements of the University**

**7.0 Goals of the College**

**8.0 Objectives of the Program**

**9.0 Course Objectives**

The goal of this course is to develop the student's skill in basic computer hardware servicing.

**A. Cognitive Aims:**

1. Understand computer systems.
2. Identify and apply health and safety concept.
3. Know how the computer works.
4. Recognize and apply the principles of static electricity.
5. Interpret the electronic aspect of computer hardware.
6. Fix computer hardware faults/failures
7. Understand print technology.
8. Set up computer system.

**B. Value Aims:**

1. To instill the value of honesty, integrity and hard work by giving their best in any class activity.

2. To emphasize fairness in teacher-to-students and student-to-student relationship.
3. To motivate the students in working harmoniously with their group mates and classmates.
4. To encourage the students express their ideas profoundly either verbally or orally.
5. To promote an environment which advocates respect, understanding and concern for each one's welfare.

## 10.0 COURSE CONTENT

| Course Outline | Per Unit/Topic | Time Duration |
|---|---|---|
| **1. Introduction to Computers** | 1.1 Types of Computer System<br>1.2 Uses of Computers | 5 hours |
| **2. Health and Safety** | 2.1 General Rules and Regulations<br>2.2 Health<br>2.2.1Correct posture<br>2.2.2 Lifting Hands<br>2.2.3 Protective devices<br>2.2.4 Environment<br>2.2.5 First Aid<br>2.3 Safety<br>2.3.1 Tools handling<br>2.3.2 Working procedure<br>2.3.3 Connectivity | 3 hours |
| **3. How the Computer Works** | 3.1 Working Principle of the Computer System<br>3.1.1 Input<br>3.1.2 Processing<br>3.1.3 Output<br>3.2 Storage | 3 hours |
| **4. Components of the Computer System** | 4.1 Types of Computer System Unit/Casing and Components<br>4.1.1 Desktop<br>4.1.2 Standard<br>4.1.3 Slim line<br>4.1.4 Tower, Mini, Midi, Full<br>4.1.5 Components | 5 hours |
| **5. Computer Software and its Uses** | 5.1 Types of Software Packages<br>5.1.1 System<br>5.1.2 Application<br>5.1.3 Utilities<br>5.2 Uses of each Software Package | 5 hours |
| | **MIDTERM EXAMINATION** | 2 hours |
| **6. Tools and Components** | 6.1 Introduction to Electronic Tools and Components<br>6.1.1 Tools<br>6.1.2 Components | 20 hours |

| | | |
|---|---|---|
| **7. Electricity** | 7.1 The Principles of Electricity<br>7.1.1 Static<br>7.2.2 Current | 15 hours |
| **8. Basic Troubleshooting Techniques** | 8.1 Introduction to Troubleshooting<br>8.2 Basic Troubleshooting<br>8.3 Summary of Problem<br>8.4 Component Recognition<br>8.5 Why Components and Devices Fails<br>8.6 Video Display Failures<br>8.7 Repair Can Generate Failures<br>8.8 Other Common Repair-Generated Failures<br>8.9 How to Localize Failures<br>8.10 How to Specify Particular Problem<br>8.11 Locating Replacement Parts | 30 hours |
| | **FINAL EXAMINATION** | 2 hours |
| | **TOTAL** | **90 hours** |

**11.0 COURSE REQUIREMENTS:**

1. Lectures / Class and Group Discussions / Actual Demonstration / Hands-on Activities / Exercises
2. Class Recitations
3. Machine Problems / Case Studies
4. Quizzes, Seatwork, Assignments
5. Mid-Term and Final Examinations

**12.0 EVALUATION TECHNIQUES:**

1. Completed Exercises / Lessons
2. Research Work
3. Group Activities

**13.0 COURSE GRADING SYSTEM:**

| | |
|---|---|
| Midterm and Final Term Examination | 30% |
| Quizzes (Hands-on/Interactive) | 25% |
| Individual Exercises/Practicum | 35% |
| Class Participation/ Attendance | 10% |
| **Final Rating (Midterm + Finals)/2** | **100%** |

**14.0 Suggested Teaching Methodologies/Strategies**

1. Classroom Discussions
2. Machine Problems/Actual Troubleshooting
3. Examination (Quiz, Seatwork, Mid & Final Exams)
4. Individual / Group Presentation

**15.0 Suggested Learning Activities**

Actual Troubleshooting and Diagnosing PC Problems.

**16.0 References:**

16.1 Textbook:

Brenner, Robert C. IBM Personal Computer Troubleshooting & Repair. Howard and Sams Company. Global Publishing, Manila Philippines. 1990.

Sandler, Corey. Upgrade Your Own PC. McGraw Hill Book Co. Singapore. Reprinted in the Philippines 2001.

16.2 Ebooks:

45 Things Every PC Users Should Know. PC World. September 2010.

Crayton, Christopher A. et. al. The A+ Certification and PC Repair Handbook. Charles River Media © 2004.

Rathbone, Andy. Upgrading and Fixing PCs for Dummies. Copyright © 2007 by Wiley Publishing, Inc., Indianapolis, Indiana.

Romaneo, Gary. Laptop Repair Complete Guide; Including Motherboard And Component Level Repair. West Seneca, New York Create Space Publishing, 2011.

Rusell, Monte. DIY Computer Repair. Copyright Russell Enterprises. United States of America. 2007.

The Ultimate Computer Repair Guide. Copyright 2010. WebSiteLink.com.

16.3 Internet:

Basic Computer Troubleshooting. Retrieved from http://www.computerhope.com/basic.htm June 2014.

Guide to Computer Troubleshooting and Repair - PC Troubleshooting Manual. Retrieved from http://www.ifitjams.com/manual.htm June 2014.

Troubleshooting Guides. Retrieved from http://pcsupport.about.com/od/findtheproblem/

**General Rules: (Adopted from the CCMIT General Rules)**

1. The course is expected to have a minimum of four (4) quizzes for mid and final term. No make-up tests will be given.

2. Assignments and research/projects works will be given throughout the semester. Such requirements shall be due as announced in class. Late submission shall be penalized with grade deductions (5%) per day) or shall no longer be accepted, depending on the subject facilitator's discretion. Assignments and exercises are designed to assist you in understanding the materials presented in class, and to prepare you for the exams.

3. Students are required to attend classes regularly, including possible make-up classes. The student will be held liable for all topics covered and assignments made during his/her absence. The university guidelines on attendance and tardiness will be implemented.

4. Any evidence of copying or cheating during any examinations may result in a failing grade from the examinations for all parties involved. Note that other university guidelines shall be used in dealing with this matter.

5. Students are advised to keep graded work until the semester has ended.

6. Contents of the syllabus are subject to modification with notification.

7. Cell phone, radio or other listening devices are not allowed to be used inside lecture and laboratory rooms to prevent any distractive interruption of the class activity.

8. No foods, drinks, cigarettes nor children are allowed inside the lecture/laboratory room.

9. Withdrawal and dropping from the subject should be done in accordance with existing university policies and guidelines regarding this matter.

10. Laboratory rules should be followed generally to insure security of all computer units.

11. Strict implementation of university policies and guidelines should be followed at all times.

*Prepared and Submitted by:*

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*Recommending Approval:*

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