CLARENCE FITZROY BRYANT COLLEGE

PROGRAMME: *INFORMATION TECHNOLOGY ASSOCIATE DEGREE*

CURRICULUM:	*Information and Communications Technology*
COURSE TITLE:	*Fundamentals of Computer Hardware and Software*
COURSE CODE:	IFTH1000
LEVEL OF STUDENTS:	N/A
CREDITS:	*3*
SEMESTER:	*2 (Two)*
DURATION:	*45 hours*
PREREQUISITE(S):	IFTH1008

RATIONALE

It is necessary for all ICT professionals to work with both computer hardware and software, so they must be able to differentiate between them if they are to troubleshoot and solve problems that arise in personal computers, as problems that occur will either be hardware or software related. This course provides the fundamental knowledge of hardware and software that the ICT professionals will need to hone and apply on the job. Through this course, students should develop the skills and knowledge that are required to install, upgrade, maintain, and solve issues that are related to hardware and software failures.

COURSE DESCRIPTION

This course provides students with opportunities to learn about the components of the computer's hardware. It allows them to learn about inner components of the computer system, their location and functions. It teaches students about advanced computing concepts, such as types and role of applications, programming languages, other computer-related systems.

LEARNING OUTCOMES

On successful completion of this course students should be able to:

1. Describe the essential components in a computer system.
2. Demonstrate how data is process by a personal computer.
3. Differentiate between software application, utility and operating system.
4. Install and configure a variety of software and operating systems.
5. Install utility software and describe how it is used to manage the security of a computer system.
6. Describe the structure of different software and operating systems.
7. Describe the system unit components, registry, cmos and bios
8. Explain the role of the central processing unit, monitor and keyboard and mouse in functions of the computer system.
9. Initiate the process of booting
10. Explain the concept of ergonomics and state its role in the field of computer science.
11. Install device drivers.
12. Set-up and restore a registry
13. Customize a start up menu

CONTENT KNOWLEDGE

1.   Essential Components of the Computer System Unit:

- The case
- Electronic circuitry
- The power supply
- Motherboard
- Hard drive
- Floppy disk drive
- CD-ROM drive
- Disk controller

- Input/output ports
- Video adapter
- Sound board
- Input devices
- The central processing unit (CPU)
- Memory
- Output devices
- Storage devices

2. Types of Computer Software:
   - System Software
   - Application Software

3. Principles of Data Processing:

   - Processing units
   - Processing sequence
   - Keyboard configuration
   - Data input and output

4. Fundamentals of Memory and Storage Devices:

   - Memory: Cache, RAM, ROM, etc.
   - Memory Capacity
   - Internal storage
   - External storage
   - Storage devices

5. Introduction to Computer Systems Administration:

   - Computer Formatting
   - Boot sequence and registry analysis
   - The Control Panel Components

6. Computer Communications Channels and Equipment.

7. How to Purchase, Install, and Maintain a computer, an operating system and computer applications.

8. Fundamentals of Ergonomics

9. Principles Computer Systems Data Back up

10.   Voice Over Internet Protocol (VOIP)

TEACHING AND LEARNING METHODS

To facilitate fulfilment of the requirements of this course, the teaching and learning sessions will utilise the following methods:

- Demonstrations

- Guided Practice
- Group Work
- Lab work
- Independent Work

ASSESSMENT PROCEDURES

In this course marks will be assigned as follows:

>   *Coursework   (60%)* (Three written papers)
>
>   *Examination (40%)*
>   (Mid-term 10%, Final 30%)

ASSESSMENT SUMMARY

Task / Assignment No. & Name	Due Date	Time	Weight	Type	Learning Outcomes
1. Oral Presentation / Video	8th Feb.	3:30 pm	20%	Class Work	1, 2, 3 and 4
2. Practical / Video	8th Mar.	3:30 pm	30%	Project	5, 6, 7 and 8
3. Mid Term	12th April.	3:30 pm	20%	Test	9, 10, 11, 12 and 13
4. Final Exam	May		30%	Individual	1 - 13

Nb: Dates and weighting are subjected to be changed.

TEXTBOOKS AND REFERENCES

1. Thompson, R. B., & Thompson, B. F. (2003). *PC hardware in a nutshell (*3rd ed.).   California: O'Reilly Media.

2. Andrews, J. (2016). *A+ guide to hardware: Managing, maintaining, and troubleshooting* (9th ed.). Boston, MA: Course Technology.

READING LIST
1. *Meyers. M. (2016).* CompTIA A+ Certification All-in-One Exam Guide, Ninth Edition (Exams 220-901 & 220902) (9th Edition).
2. *Meyers. M. (2016).* CompTIA Network + Certification All-in-One Exam Guide, Sixth Edition (Exam N10006) (6th Edition).
3. *Mueller, S. (2015)*. Upgrading and Repairing PCs. Twenty Second (22nd) Edition