Module Outline

Semester: 7
From January 2020 to May 2020

DTECH207 - Computer Maintenance and Upgrade
MODULE DETAILS

Course Location	: Sierra Leone
Faculty	: Faculty of Information & Communication Technology
Program Name	: BSc (Hons) in Information & Communication Technology
Semester	: 7
Credits	: 3
Contact hours	: 3 hours (2 hours lecture + 1 hours tutorial)
No. of weeks	: 14 weeks: i.e. 10 teaching weeks + 2 examination weeks+ 1 week Midterm Break+1Revison week
Teaching Pattern	: Lectures and Tutorial
Pre-requisite	: Computer Hardware, Fundamentals of Computer Systems / Computer Architecture
No. of assignments	: 3
No. of written exam	: 2 (1 Class test + Final Examination)
Lecturer	: Alhassan Mohammed Kamil
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Prepared by: Alhassan Mohammed Kamil

Signature :

Date: 15th October 2019

Approved by: AQA

Signature:

Date:

Verified by : Oluwatosin Ayorinde

Signature : ..... Date .....

This document comprises the following:

- Essential Information
- Specific Module Information
- Module Rules & Regulations
- Grades
- Plagiarism
- Module Introduction
- Module Aims & Objectives
- Learning Outcome
- Specific Generic Learning Skills
- Syllabus + Lecture Outline
- References
- Assessment Schedule
- Assessment Criteria
- Specific Criteria
- Learning Activities
- Specific Criteria

Other documents as follows will be issued to you on an ongoing basis throughout the semester:

- Handouts for Assignments
- Submission Requirements + Guidelines

1.0 ESSENTIAL INFORMATION

- All modules other than electives are '**significant modules**'
- As an indicator of workload one credit carries an additional 2 hours of self study per week. For example, a module worth 3 credits require that the student spends an additional 6 hours per week, either reading, completing the assignment or doing self directed research for that module.
- **Submission of ALL assignment work is compulsory in this module, failure to do so a DNS (Did not submit) grade would be awarded. An overall grade of DNC (Did Not Complete) would be sit for those who fail to submit a major piece of assessment (major assignment) or sit for either the mid-term examination, class test or final examination. A student cannot pass this module without having to submit ALL assignment work by the due date or an approved extension of that date.**
- **A student cannot pass this module without having to submit a MAJOR ASSIGNMENT AND THE FINAL EXAMINATION work by the due date or an approved extension of that date.**
- All assignments are to be handed on time on the due date. Students will be penalised 10 percent for the first day and 5 percent per day thereafter for late submission (a weekend or a public holiday counts as one day). Late submission, after the date Board of Studies meeting will not be accepted.
- Due dates, compulsory assignment requirements and submission requirements may only be altered with the consent of the majority of students enrolled in this module at the beginning/early in the program.
- Extensions of time for submission of assignment work may be granted if the application for extension is accompanied by a medical certificate.
- Overseas travel is not an acceptable reason for seeking a change in the examination schedule.
- Only the Head of School can grant approval for extension of submission beyond the assignment deadline.
- Re-submission of work can only receive a 50% maximum pass rate.
- Supplementary exams can only be granted if the level of work is satisfactory **AND** the semester work has been completed.
- Harvard referencing and plagiarism policy will apply on all written assignments.

2.0 SPECIFIC MODULE INFORMATION

- Attendance rate of 80% is mandatory for passing module.
- All grades are subject to attendance and participation.
- Absenteeism at any scheduled presentations will result in zero mark for that presentation.
- Visual presentation work in drawn and model form must be the original work of the student.
- The attached semester program is subject to change at short notice.

3.0 MODULE RULES AND REGULATIONS:

Assessment procedure:

- These rules and regulations are to be read in conjunction with the UNIT AIMS AND OBJECTIVES
- All assignments/projects must be completed and presented for marking by the due date.

- Marks will be deducted for late work and invalid reasons.
- All assignments must be delivered by the student in person to the lecturer concerned. No other lecturer is allowed to accept students' assignments.
- All tests/examinations are compulsory.
- Students must sit the test/examination on the notified date.
- Students are expected to familiarise themselves with the test/examination timetable.
- Students who miss a test/examination will not be allowed to pass.
- Any scheduling of tutorials, both during or after lecture hours, is TOTALLY the responsibility of each student. Appointments are to be proposed, arranged, confirmed, and kept, by each student. Failure to do so in a professional manner may result in penalty of grades. Tutorials WITHOUT appointments will also NOT be entertained.
- Note that every assignment is given an ample time frame for completion. This, together with advanced information pertaining deadlines gives you NO EXCUSE not to submit assignments on time.

4.0 GRADES

All modules and assessable projects will be graded according to the following system. With respect to those units that are designated 'Approved for Pass/Fail' the grade will be either PX or F:

Grade	***Numeric Grade***	***Description***
90 – 100	A+	
85 – 89	A	Pass with Distinction
80 – 84	A-	
75 – 79	B+	
70– 74	B	Pass with Credit
65 – 69	B-	
60 – 64	C+	
55 – 59	C	Pass
50 – 54	C-, PX, PC	
0 – 49	F	Fail

EXP	Exempted
PC	Pass Conceded
PP	Pass Provisional with extra work needed
PX	Pass after extra work is given and passed
X	Ineligible for assessment due to unsatisfactory attendance
D	Deferred
W	Withdraw
DNA	Did Not Attend Module
DNC	Did Not Complete Module

5.0 PLAGIARISM, COPYRIGHT, PATENTS, OWNERSHIP OF WORK: STUDENT MAJOR PROJECT, THESES & WORKS

See LIMKOKWING, HIGH FLYERS HANDOUT, pg 10.

6.0 MODULE INTRODUCTION

This is the first introduction to computer hardware. Hardware and software are intertwined in any computer system. The student will learn the mechanics of tearing down and building up a basic PC computer. This course teaches students the skills and knowledge necessary to configure, manage, maintain, and troubleshoot computer hardware and software in the workplace thus improving and ensuring organizational effectiveness and efficiency.

7.0 MODULE AIMS AND OBJECTIVES

- Describe the basic systems inside a PC-based computer
- Tear down and re-assemble PC
- Customize configuration or modify hardware for improved performance
- Perform preventive maintenance on personal computer components
- Install, configure, optimize and upgrade operating systems
- Identify tools, diagnostic procedures and troubleshooting techniques for operating systems
- Perform preventative maintenance for computer security
- Explain the importance of safety and environmental issues
- Use good communication skills with customers and colleagues
- Demonstrate professionalism while working with customers and colleagues

8.0 LEARNING OUTCOME

Upon conclusion of this course, students will be able to:

- Identify all parts of a PC
- Discuss the functions and interactions of all PC subsystems
- Identify and troubleshoot common PC hardware problems
- Select quality PCs and constituent components based on performance and cost
- Install, replace, and upgrade PC hardware components
- Install, configure, optimize, troubleshoot and upgrade operating systems

9.0 SPECIFIC GENERIC LEARNING SKILLS

On completion of this module the candidate will have developed the skills necessary to install and maintain hardware and software in the following areas:

- Identifying common system modules.
- Assembling a working computer system.
- Installing and un-installing software using correct procedures.
- Carryout common maintenance procedures.
- PC Hardware upgrade
- PC Software upgrade

10.0 UNIT SYLLABUS + LECTURE OUTLINE:

Week: 1 & 2

CHAPTER 1: IDENTIFY COMMON SYSTEM MODULES

Lecture Synopsis:

1.1 Computer Cases
1.2 System Bays
1.3 System Board
1.4 Types of Computer Interfaces
1.5 Associated Cabling
1.6 Connectors
1.7 PC cards
1.8 Power supply
1.9 Processor /CPU
1.10 Memory
1.11 Storage Devices
1.12 Input/Output Devices

Handout: *Notes*

Week: 3

CHAPTER 2: ASSEMBLE A WORKING COMPUTER SYSTEM - PART I

Lecture Synopsis:

2.1 Practice Standard Safety procedures
2.2 Identify basic procedures for motherboard preparation
2.3 Identify basic procedures for Processor / CPU and heat sink / cooling fan installation
2.4 Identify basic procedures for memory installation and configuration
2.5 Identify basic procedures for motherboard installation
2.6 Identify basic procedures for storage device installation
2.7 Identify basic procedures for Video card installation
2.8 Identify basic procedures for Sound Card / Modem
2.9 Identify basic booting procedures
2.10 Test assembled computer system thoroughly
2.11 Correct faults identified through testing effectively

Handout: *Step by Step Notes*
Individual Assignment 1 (5%)

Week: 4

CHAPTER 3: ASSEMBLE A WORKING COMPUTER SYSTEM - PART II
GUEST LECTURE –

Lab Exercises:

3.1 Build a working Computer System correctly
3.2 Test assembled computer system thoroughly
3.3 Correct Faults identified through testing effectively

Week: 5

CHAPTER 4 : CARRYOUT SOFTWARE INSTALLATION AND UN-INSTALLATION PROCEDURES - PART I

Lecture Synopsis:

3.4 Prepare a computer for software installation correctly
3.5 Install Operating System Software correctly
3.6 Install Application Software correctly
3.7 Test installed software correctly
3.8 Remove software from a computer correctly

Handout:	*Step by Step Notes*
Due Date:	*Individual Assignment 1*

Week: 6

CHAPTER 5: CARRYOUT SOFTWARE INSTALLATION AND UN-INSTALLATION PROCEDURES - PART II

Lab Exercise:
4.1 Prepare a computer for software installation correctly
4.2 Install software correctly
4.3 Test installed software correctly
4.4 Remove software from a computer correctly

Lab practicals: *- (15%)*

Week: 7
Class Test *(10%)*

Week: 8
SEMESTER BREAK

Week: 9

CHAPTER 6: MAINTANACE PROCEDURES - PREVENTIVE MAINTENANCE - PART I

Lecture Synopsis:
5.1 Liquid cleaning compounds
5.2 Types of materials to clean contacts and connections
5.4 Non-static vacuums (chassis, power supplies, fans)
5.5 UPS (Uninterruptible Power Supply) and suppressors
5.5 Proper methods of storage of components for future use
5.6 ESD (Electrostatic Discharge) precautions and procedures
5.7 Virus Checker

Handout:
- Notes
- Individual Assignment 2 (20%)

Week: 10

CHAPTER 7: MAINTANACE PROCEDURES - ROUTINE MAINTENANCE – PART II

Lecture Synopsis:
6.1 Computer maintenance tips
6.2 Common Problems & Solutions
6.3 Scandisk / Check disk
6.4 Clean disk
6.5 Defragmenter
6.6 System Restore
6.7 Virus Checker

Handout: *Step by Step Notes*

Week: 11

CHAPTER 8: PC UPGRADE PART I – HARDWARE

Lecture Synopsis:
7.1 Why upgrade
7.2 Compatibility check
7.3 Add extra hard disk drive
7.4 Add extra memory card
7.5 Add processor upgrade
7.6 Add Network card
7.7 Test hardware to ensure correct operation

Handout: *Step by Step notes*

Week: 12

CHAPTER 9: PC UPGRADE PART II – SOFTWARE

Lecture Synopsis:
8.1 Disk Space
8.2 System Requirements
8.3 Backup existing files
8.4 Install Operating System Upgrade as per recommendation
8.5 Install Application Software Upgrade as per recommendation
8.6 Test software to ensure correct operation

Handout: *Step by Step notes*
Due Date: *Individual Assignment 2*

Week: 13

CHAPTER 10: PC UPGRADE

Lab exercise:
9.1 Hardware Upgrade
9.2 Software Upgrade
9.3 Test hardware to ensure correct operation
9.4 Test software to ensure correct operation

Lab practicals: *Exercise (20%)*

Week: 14 & 15

Tutorials & Revision

Week: 16 & 17

FINAL EXAMINATION WEEK

11.0REFERENCES

Essential Text & Additional Text for References

A. Jean Andrews. *A+ Guide to Managing and Maintaining Your PC Comprehensive.* Course Technology. Current Edition.

B. Jean Andrews, Todd Verge. *A+ Guide to Managing and Maintaining Your PC Comprehensive, Lab Manual.* Course Technology. Current Edition.
MANAGING AND MAINTAINING COMPUTER HARDWARE AND SOFTWARE COMP-1105

C. *LabSim for A+ Essentials.* Course Technology. Current Edition

12.0 ASSESSMENT SCHEDULE

Description	issue date	due date	%
Individual Assignment 1	Week 2	Week 5	5%
Lab Practical	Week 6	----------	15%
Attendance & Submission	Week 1	Week 7	5%
Class Test	Week 7	Week 7	20%
Group Project	Week 4	Week 12	20%
Lab Practical	Week 13	----------	10%
Final Examination	Week 15/16	Week 15/16	30%
TOTAL			**100%**

13.0 ASSESSMENT CRITERIA

- Each project will be handed out with the project brief and will vary, depending on the teaching and learning objectives of the specific project.
- Each student will receive a completed assessment sheet back with their marks, thereby giving student feedback on each set criterion and the project as a whole.
  All submission must be made directly to the lecturer-in-charge

14.0 LEARNING ACTIVITIES

- Students need to choose a company that operates locally, and use the Internet and any other available source to gather information on the company. Based on the research, write a 1- to 2-page paper describing some of the possible benefits that the company might have gained by hiring/outsourcing computers technicians. Also, describe each of the challenges that the company might have faced or is currently facing as a result of using out dated computer hardware.

- Students are required to construct a proposal for Limkokwing University (IT support department) computer hardware and software requisition. The proposal must outline the need for computer hardware upgrade and the strategy that is going to be employed, without disturbing daily activities. They have to integrate all the components of computer support, maintenance and upgrade that have been mentioned throughout the semester.

15.0SPECIFIC CRITERIA

Process of grading and criteria used to determine the grades, passes and high distinctions.

90-100, A+, Publishable. Assignment is of sufficient substance and style to be submitted to a referred journal for publication or public presentation.

85-89, A, Outstanding. Superior understanding of the subject matter. Evidence of original thinking and an extensive knowledge base. Careful, concise, critical analysis with a clear and well-argued hypothesis based on the material. Shows a

capacity to analyze, synthesize, and evaluate material. Shows a grasp of all the scholarly issues involved. Shows evidence of learning being extended beyond the initial learning situation. Clear thesis and conclusion. Well-researched and documented. Stylistically flawless.

80-84, A-, Excellent. Superior understanding of the subject matter. A careful analysis with some precision and attention to the details of the material. Shows some critical capacity and analytic ability and some original thinking. Needs a bit of fine-tuning of the details. Clear thesis and conclusion. Good research and documentation. Stylistically flawless.

75-79, B+, Excellent. Solid understanding of the subject matter. Good analysis and some critical reasoning. Reasonable understanding of relevant issues and familiarity with the material. Demonstrates a solid understanding of the relationship or connections among the basic concepts. Needs to be more concise or precise in details and more careful in forming arguments. Stylistically sound.

70-74, B, Good. Generally accurate account of the subject matter with acceptable analysis and some critical reasoning. Some interaction with relevant material. Demonstrates some understanding of the relationship or connection among the basic concepts. Needs more precision and attention to details and greater precision in the use of arguments. Some careless stylistic errors.

65-69, B-, Fine. Generally accurate description of the subject matter and an adequate grasp of the critical issues and ideas involved. Demonstrates rudimentary understanding of the relationship or connection among the basic

Concepts. Needs more attention to detail and better use of arguments. Some careless stylistic errors.

60-64, C+, Average. Acceptable treatment of the subject matter. Demonstrates an understanding of the basic facts, vocabulary, details, and elemental concepts. Shows an ability to deal with simple issues arising out of the material. Needs to explore the subject matter more fully and formulate ideas more clearly. Closer attention should be given to stylistic elements including sentence structure and paragraph organization.

55-59, C, Adequate. Generally acceptable treatment of the subject matter and issues. Demonstrates an awareness of the basic facts, vocabulary, details, and elemental concepts. Impressionistic or vague at points. Shows that the learning experience was profitable. Lacks clarity in formulating the issues and shows little or no evidence of critical reflection on the issues or data. Closer attention should be given to grammar, spelling, and punctuation.

50-54, C-, Minimally Acceptable. Adequate understanding and treatment of the data and issues, but imprecise, impressionistic or vague. Lacks clarity in expressing the issues and shows no evidence of critical reflection on the issues or data. Major problems related to issues of style.

0-49, F, Inadequate. Sloppy, imprecise or careless discussion of the material with little or no evidence of critical reflection, stylistically flawed.

S Grade, In the case of a student who is granted supplementary work/s submission by the faculty, a grade S should be entered. An S grade is an interim grade until the supplementary work/s is/are submitted and assessed at the earliest possible timeframe. After a student has passed the supplementary work/s, the student shall be awarded with a normal grade. This is limited to 'C' band.

DNC (Did Not Complete), In the case of a student who has registered, is on a class list, has attended some classes, but has not submitted any work, a grade of DNC should be entered. A 0.00 grade point is attached to this grade.

GNS (Grade Not Submitted), In the case of an emergency or unforeseen circumstances and grade/s is/are yet to be submitted at time of Senate eg waiting for Internship to be completed, a GNS should be entered.

DEF (Deferred), In the case of a student who has registered, is on a class list, but has decided to drop the module after the approved dropped date ie. Week 4, a grade of DEF should be entered. There is no grade point attached to this grade.

EXP (Exempted), Refer to Section Exemption of Modules or Advance Standing and Credit Transfer in Academic Quality Assurance Manual.