Pokhara University
Faculty of Science and Technology

Course No.: xxx xxx   Full marks: 100
Course title: Computer Workshop   Pass marks: 45
Nature of the course: Practical   Time per period: 1 hour
Year: First   Total periods: 30
Level: Bachelor   Program: BE

1. Course Description

This course provides the knowledge and hands-on skills of computer hardware, software, computer networking and enables students to identify and rectify the onboard computer hardware, software and network related problems. Students will be able to understand the hardware specifications for the operating system and various application programs.

General Objectives

The general objectives of this course are:
- To familiarize the students with the computer systems hardware, basic practical works and computer networking concepts
- To make the students competent in install/update operating system and various application software, manage data backup and restore operations on a computer system

2. Methods of Instruction

Specific instructional techniques: Lab works, Project works

3. Contents in Detail

Specific Objectives	Contents
- Familiar with computer hardware and accessories	**Unit 1: Introduction to Desktop/Workstation Assembly (2)** 1.1 Demonstration of computer hardware and peripheral devices: Processors, Motherboard, Memory, Storage devices, I/O Devices. 1.2 Demonstration of Power Supply-SMPS, Internal cablings and Ports.
- Assemble and Dissemble PC with power supply, internal cabling, Motherboard and PCI Device	**Unit 2: Assembling Desktop Computer (2)** 2.1 Assembling steps and precautions. 2.2 Setting of motherboards, memory, hard disk, processors, CDROM, SMPS and other devices.
- Assemble Laptop power supply, internal cabling, Motherboard and PCI Devices.	**Unit 3: Assembling Laptop (2)** 3.1 Assembling steps and precautions. 3.2 Demonstration of motherboards, memory, hard disk, processors, CDROM, SMPS and other devices.

- Install OS (Linux and Windows) in Desktop/Laptop	**Unit 4: Laptop/Desktop OS Installation (6)** 4.1 BIOS setting, firmware types, BOOT configuration. 4.2 Hard disc partitioning. 4.3 OS installation (Linux, windows). 4.4 User account management 4.5 Printer, Scanner installation.
- Visualize computer network and familiar with cabling and LAN setup - Recognize Wireless LAN and AP configuration	**Unit 5: Networking and Internet Setup (5)** 5.1 Introduction to Computer Network, Network topologies, wired and wireless networking media. 5.2 Network cabling, cable types and connectors. 5.3 Basic wireless AP configuration.
- To understand different types of Application/Utility software. - To be able to Install and Update of Antivirus	**Unit 6: Software Installation (5)** 6.1 Installation of application and utility software. 6.2 Update of firmware patches, 6.3 Virus scanning.
- To know about basic concept server and Setup Server of Mail/Data/Domain/FTP - To Manage Data backup and Restore operation from server and Update in Application Software - Uses of FTP/SCP Client tool to upload/download files to FTP server.	**Unit 7: Server Installation and Backup (3)** 7.1 Introduction to server. 7.2 IP Address setting. 7.3 Study of different server (Email, Data, Domain, FTP).
- Able to know about Multimeter, Soldering iron, Hot gun. - Able to understand the troubleshooting tools and utilities.	**Unit 8: Hardware and Software Troubleshooting (5)** 8.1 Basic Repair and Maintenance of Desktop/Laptop. 8.2 Repalcement of Passive Components. 8.3 Uses of basic software troubleshooting commands. 8.4 Uses of trouble shooting tools and utilities.

4. Evaluation system and Students' Responsibilities

Evaluation System
The evaluation of a student may consist of assignments, attendance, test-exams, term-exams, lab reports and projects etc. The tabular presentation of the evaluation is as follows:

External Evaluation	Marks	Internal Evaluation	Weight	Marks
Semester-End examination	NA	Attendance & Class Participation	10%	
		Assignments	10%	
		Quizzes/MCQ	10%	

		Class Test	20%	50
		Assessment Exam	50%	
		Internal Final Exam	100%	50
Full Marks: 50 + 50 = 100				

Student Responsibilities
Each student must secure at least 45% marks in evaluation with 80% attendance in the class in order to appear in the Semester End Examination. Failing to get such score will be given NOT QUALIFIED (NQ) and the student will not be eligible to appear the Final Examinations. Students are advised to attend all the classes, formal exam, test, etc. and complete all the assignments within the specified time period. Students are required to complete all the requirements defined for the completion of the course.

5. **Prescribed Books and References**
   1. Winn L. Rosch, Hardware Bible, 6th Edition.
   2. Sanjay K Bose, Hardware and Software of Personal Computers.
   3**. V.** Rajaraman and Neeharika Adabala, Fundamental of Computers.