CSC 208: Introduction to Computer Hardware Laboratory (2 Units) - Elective.

Identify and describe tools used for computer service and explain how to use those tools safely;

Identify and describe the various internal components of a computer, Assemble a Computer System, Install an Operating System;

Describe the purpose of Preventive maintenance and basic troubleshooting Steps;

Troubleshoot using System tools and diagnostic Software. Hands-on labs and interactive learning tools which help students to develop Critical thinking and complex problem-Solving Skills;

Identify and describe the main components of Laptops and portable devices, basic preventive maintenance, and troubleshooting;

Identify and describe the differences between Printers and Scanners, Installation and Configuration, basic Preventive maintenance, and troubleshooting.

Maintainance
Preventive Maintainance
Corrective Maintainance.

Preventive
Environmental factors: Proper Ventilation.
Power factors
System factors.
 — Keep your System Away from Dust
Thunder Arrestors.
Earthing:-Environment must have a good Earthing
Thunder Strikes.
Don't Put your System On the floor
Avoid water with your System
 — Electrical Power
Power Supply must be Constant and Must no frutuate-
Socket with Surge Arrestors.
Uninterruptable power Supply(UPS)
Power Inverter.
Stabilizer.
System factors.
Hardware OR Software.
Ensure you dust and clean your system.

If the Environment is healthy, Good for the system

Resetting Of Hardware.

System Scan, Hard disk, Ram.

Software

Virus Scan :- Avoiding Virus, Malware.

It Must be Done Regularly.

Disc dfragmentation.

Sys.tem Restore.

System restore tool

Corrective Maintainafe.

Backup Strategy.

Troubleshooting : fault finding.

  2 flash drive.

Windows 7 32bits 64bits

Windows 8   ''   ''

Windows 10 ''   ''

  Linus

Universal Process.

1 Define your Symptoms.
2 Identify and isolate.
3 Replace or Repair
4 Re-test for Normal Operation.
5 Restart 1-4 if not Satisfactory.

Trouble shoot is fault finding routine.

- Keyboard
- Mouse
- Monitor
- System Unit → PSU
                   RAM
                   HARDDISK
                   DRIVES
                   BOARD
- Printers
- Scanners
- e.t.c

Hardware Or Software faults.

Software fault is often caused by malicious agents of software, attacking System files or application files. If the Software is not working effectively, you Un install and then Re install.

Define your symptoms

Restore your Operating System if all the software on your
System is not working effectively or efficiently.

Backup your files and format.

Defragmentation is Done when a System is Slow. Separate
files.
Run An Antivirus Scan

Hardware troubleshooting.   Using Multimeter.
for flat battery:- Check power source. if you get 220, 230volt
power source is not the problem.
it is Okay but if it is giving you Less It is not Okay

Check the fuse

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Remove fuse
Use multimeter to check if it is faulty, if there is
reading it is Okay, if there is no reading the fuse is
faulty; change fuse if faulty

Cable:- Run Continuity test. If Cable is faulty you replace.
Power supply Unit:- step down Voltage, Retify Voltage
divide voltage

Power Unit:- If you do a bench test, you bridge the power unit to check if it is working, It is Okay if it is not working. Repair and Replace.

If nothing is working on the power Unit ; go and buy another.
If the output of the Adapter is 19volt it is good
If it is less repair or Replace.
If the laptop adapter is faulty the best Option is to replace.

The System Board-
If mother Board is faulty. Remove all the component excluding the power Reset.
Remove the Ram, CMOS,
Replace the processor and with a working processor
If it doesn't come up, It is bad.
Replace the Board.

Display path:- Trou bleshoot all the Display pathway
If the monitor is not coming on.
monitor, Signal cable, Ram, video circuit.
monitor, Ram flex, Ram, video circuit.

If RAM is faulty in a desktop, the system will beep.
If you don't have ram on your system or it is faulty
there will be no display.
Blow the RAM Bank/slot, change RAM slot, Change the
RAM.
If the video circuit is bad, Dispose the Board, Replace the
Board.

Keyboard:- Prevent Dust from Entering the keyboard
Dust if it not working Uninstall Driver, Install Driver
PRESS some set of keys to configure. Goggle to know the
Configuration. If it is still not working, Replace

Mouse:- If there is virus it might not work
Replace the Mouse or Mouse pad.

Harddisk. If the Harddisk is making Noise back up your
file and replace the HARDDISK.