

SEC 1: Electronic Repairing

Total Credit: 3

Total Hours: 72

SYLLABUS

Objective:

Equip the students with basic knowledge of various electronic appliances and understand the principles of operation and its care. This course also aimed at making the students to the working of electronic products used in daily life and to repair and maintenance of these products.

Unit 1:

Fault detection and troubleshooting, Fault location procedure, Fault finding aids, Service and maintenance manuals, Instruction manuals. Test and measuring instruments, Grounding systems in Electronic equipment, safety and precaution in handling electronic equipment.

Unit 2

Introduction to components: Resistor, Capacitor and Inductor. Types of resistor, colour code, power ratings. Types of capacitors, inductor types. Transformer, Relay, Fuses.

Conductor, semiconductor, Insulator, Different types of transformers, switch mode power supply (SMPS), Zener diode as voltage regulators.

Unit 3:

Soldering tools, Soldering Iron, Soldering station, Dry Solder joint, Cold Solder joint,, Soldering materials, Soldering Techniques, Tools used for De-Soldering, De-Soldering Techniques, Precautions during Soldering and De-Soldering, hot air gun.

Unit 3:

Multimeters, Analog Multimeter, Digital Multimeter, Frequency meter, Oscilloscope, Measurement with oscilloscope, testing and measurement of resistor, capacitor, inductors and semiconductors.

Unit 4: Cell phone repair

To Study about different parts of mobile phones:

Keypad, Ear piece, Mouth piece, Battery, Power switch, Power switch, Oscillator, Screen , display, Flash IC, Charging IC, CPU, Antenna etc.

SEC 2: Electronic Repairing

Total Credit: 3

Total Hours: 72

SYLLABUS

Objective:

The Objective of this subject is to make the students capable to understand the functioning of hardware parts and develop skills in diagnosing the faults and troubleshoots the cellphone system. This course will be helpful for students to get employment in the computer maintenance industry as well as self-employment.

Unit 1: Cell phone repair

Introduction to Hardware & materials: Diodes & Transistors, Crystal, ICs & SMD's, Identification of the different parts, Learn to understand the parts and functioning, Key pad LEDs fault finding, Checking of components & circuit board, Identify the faulty components by cold testing method i.e to use a multimeter to check the value of resistance during powered off condition, Identify the faulty components by hot testing method (to use a multimeter to check the value of voltage during powered on Condition)

Unit 2:

To rectify the intermittent faults:

Excess temperature, excess current or voltage, ionizing radiation, mechanical shock, stress or impact, contamination, mechanical stress, short circuits, imperfect connections

To rectify the battery charging faults by

Cleaning, re soldering or changing the charger Connector, Changing the battery and check again, Check the voltage of the battery connector using a Multimeter. Checking the fuse, coil and regulator one by one and change the faulty part., Changing the charging IC., Changing the Power IC

Unit 3:

To rectify the network problem by

Cleaning the antenna tips and points, Repairing or replacing the antenna switch, Repairing or replacing the PFO, Repairing or replacing Network IC, Replacing the power IC or CPU

To rectify the sound problems by checking

Speaker and microphone, Earpiece, Audio and power IC, CPU

To rectify the display problems by

Cleaning the display tip and display connector, De soldering the display connector, Checking the display track, Changing the display, Changing the display IC and /or CPU

SEC 3: Electronic Repairing

Total Credit: 3

Total Hours: 72

SYLLABUS

Objective:

The Objective of this subject is to make the students capable to understand the functioning of hardware parts and develop skills in diagnosing the faults and troubleshoots the Television and computer system. This course will be helpful for students to get employment in the computer maintenance industry as well as self-employment..

Unit 1

Introduction of LED/LCD /CRT TV, Identify of LED and LCD TV function, Identify of Electronics components, Difference between LED and LCD TV,

Use of Hot Gun Machine(SMD), removal and fixation of faulty components from Board, Led/Lcd TV hot and cool testing, replacement of all type of jack, port, socket and connector, check of faulty electronics components,

Unit 2:

LED and LCD TV power circuit board details, Main board testing of TV, Power supply circuit testing & repairing solutions, LED/LCD TV screen testing and repair, TV Invertor and power circuit board problems, LED repairing tools details, LED TV remote function details

Unit 3

Introduction of PC and Laptop:

Internal components, keyboard, touch-pad, motherboard, cold testing of motherboard, soldering practice, processor, PC card, DVD drives. Troubleshooting OS, application software, CPU related problem, troubleshooting motherboard, overheat problem, blue scree problem, other hardware problem solutions

Unit 4:

Install, maintain and repair computer peripheral or hardware components, Troubleshoot different computer issues, Maintain system configuration and operating system • Determine and installing appropriate security measures • Install & Configure basic computer networks • Provide technical support on-site or via phone or email • Install, configure and maintain common end user application software. Assist to train end users. • Troubleshoot software and hardware problems related to Internet applications.

