FUTURE PROOF LEARNING - NEP ALIGNED

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Professional Certificate in Mobile Phone Technology & Tablet Engineering

DURATION: 180 Hours

TOTAL CREDITS: 6

COURSE SYLLABUS

Objective

This course teaches how to fix, maintain, and troubleshoot modern mobile phones and tablets. Students will learn to find and solve hardware and software problems, replace broken parts, and improve device performance. Hands-on training with repair tools gives real-world experience, preparing students for jobs in repair shops, service centers, or as independent technicians. The course covers both basic and advanced repair skills to help students succeed in the growing mobile device repair industry.

Exit Profile

- Mobile Device Repair and Service
- Mobile Device Manufacturing and Design
- Device Testing and Quality Assurance (QA)
- Mobile Security and Forensics
- Accessory Design and Manufacturing
- Mobile Phone Repair Technician

Career Path

- Sales Representative
- Tester/QA Engineer
- Mobile phone Manufacturing Technician
- Support Specialist
- Mobile Network Engineer
- Device Security Analyst
- Technical Support
- Tablet Repair Specialist
- Refurbishing Technician

Course Outline

Course Name:	Professional Certificate in Mobile Phone Technology & Tablet Engineering	Duration:	180 H
Module	**Topic**	**Duration**	**Total Duration**
Module -I	Basic electronics	5	40 H
	Parts and their function in mobile phones	7	
	Study on mother board repair tools	8	
	Study of different OS	5	
	Study on Smart phone & tablet processors	15	
Module-2	Assembling and disassembling mobile phones	15	50 H
	Mobile phone repairing testing method	15	
	Mobile phone problems and solutions	5	
	Software servicing	10	
	Mobile phone master reset codes and secret codes	5	
Module-3	EMMC Programming	10	50 H
	Glass changing using OCA machine	10	
	Lock removing (FRP lock, pattern lock, country lock, SIM lock, etc..)	10	
	Black pasted and white pasted CPU re-balling	10	
	Schematic tracing	10	
Module-4	Deep level practical training of software flashing (Android & IOS)	20	40 H
	Deep level practical training in mobile phone chip level fault finding	20	

Course In Detail

MODULE - 1:

BASIC ELECTRONICS

- ➢ (Resistor, Capacitor, Inductor, Diode, Transistor, FET, MOS FET, IC, Crystal etc.) Identification,
- ➢ Checking and Valuation of Electronic components.
- ➢ Basic concepts: Voltage, current, resistance, power
- ➢ Understanding circuits: Series and parallel circuits
- ➢ Identification and understanding of electronic components used in mobile phones:
- ➢ Resistors, capacitors, diodes, transistors, integrated circuits (ICs), connectors, etc.
- ➢ Reading component values and markings

PARTS AND THEIR FUNCTION IN MOBILE PHONES

- ➢ Display, Speakers, Earpiece, Mic, Vibrators, Camera, Cables, Antenna, Keyboard module,
- ➢ PCB, Connectors & Switches, CPU, Power Amp., Power supply IC, Flash IC, Audio IC, Camera
- ➢ IC, Radio IC, RAM, ROM, Antenna Switch, Signal Processors, Voltage Regulator Chip, Mic
- ➢ Amp., EMI Filter, UEM and PFO.

STUDY ON MOTHER BOARD REPAIR TOOLS

- ➢ Multi Meter, Microscope, Soldering Station, Hot Air Rework Station, Soldering Iron, Solder
- ➢ Wire and Flux, De-soldering Braid or Solder Wick, Tweezers, PCB Holder, Cleaning Tools,
- ➢ Component Tester, UV Light and UV Curable Solder Mask etc.

STUDY OF DIFFERENT OS

- ➢ Android
- ➢ Apple ios
- ➢ KaiOS
- ➢ Symbian
- ➢ BlackberryOS
- ➢ Windows OS

STUDY ON SMART PHONE & TABLET PROCESSORS

➤ Learning the CPU architecture
➤ Study of major manufacturers
➤ Performance analysis
➤ Connectivity and Features
➤ Market Trends and Future Developments

MODULE - 2:

ASSEMBLING AND DISASSEMBLING MOBILE PHONES

➤ Assembling and Disassembling mobile phones

MOBILE PHONE REPAIRING TESTING METHOD

➤ Cold testing method and hot testing method

MOBILE PHONE PROBLEMS AND SOLUTIONS

➤ Charger, battery, vibrator, LED, Earpiece, Mic, Keypad, Touch screen
➤ Display, Camera, SIM Not Working, No Network, Battery Charging
➤ Problem, Phone Dead, Heating, Auto Switch OFF, Blank LCD Screen, No
➤ Sound, Wi-Fi Problem, Liquid Damage, No Incoming and Outgoing, FM
➤ Not Working, etc.

SOFTWARE SERVICING

➤ Restore Factory Settings, Phone Lock, Country Lock, Security Lock, Virus
➤ Problems, Updating and Flashing, New versions, SIM Card Registration
➤ Failed, Software Installation.

MOBILE PHONE MASTER RESET CODES AND SECRET CODES

➤ Nokia, Samsung, LG, Motorola and other China Phones
➤ Secret codes of Android mobile phones

MODULE - 3:

eMMC PROGRAMMING

➢ About eMMC
➢ Type of eMMC chip in phone
➢ How to program eMMC.
➢ Which Tools & Software use for eMMC programming.
➢ How to use UFI Box
➢ About RAM & ROM
➢ How to Upgrade RAM & ROM
➢ About VCC, VCCQ, CMD, DATO, CLK & GROUND
➢ How to dead boot repair
➢ How to Read & Write security File.
➢ How to Read & Write Dump files
➢ How to backup eMMC.
➢ What is GP Partition?
➢ Health Report.
➢ Nand Test.
➢ How to Unlock Password, FRP & Mi account.
➢ What is Partition in eMMC.
➢ How to flash of eMMC
➢ What is Read Only one-time programming
➢ How to Factory reset of eMMC.
➢ What is eMMC Pinout.
➢ How to Recovery Data from dead phone

GLASS CHANGING USING OCA MACHINE

➢ OCA Machine: Used for laminating the OCA film and glass onto the display.
➢ Separator Machine: For separating the broken glass from the display.
➢ Vacuum Laminator: Ensures the glass and OCA film are bubble-free.
➢ Autoclave: Removes any remaining bubbles after lamination.
➢ UV Light Curing Machine: For curing UV adhesive, if used.
➢ OCA Film: Optically clear adhesive film.
➢ New Glass: Replacement glass for the device.
➢ Glue Remover: For cleaning the display surface.
➢ Lint-Free Cloth and Cleaning Solution: For cleaning the display.
➢ Heat Gun: Helps in removing the old glass.

LOCK REMOVING

- Screen Lock Removal
- Network Lock (SIM Lock) Removal
- Security Lock (FRP - Factory Reset Protection) Removal
- Region-Lock or country lock

BLACK PASTED AND WHITE PASTED CPU REBALLING

- Removing the chip from the motherboard
- Cleaning the old solder
- Applying new solder balls (re-balling)
- Reattaching the chip to the motherboard

SCHEMATIC TRACING

- The purpose of schematic drawing
- Electronic Symbols, connections, nodes, signals, power and ground etc...
- How to trace a schematic drawing

MODULE - 4:

- Deep level practical training of software flashing (Android & amp; IOS)
- Deep level practical training in mobile phone chip level fault finding