

Syllabus: Certificate in Mobile Repairing (CMR)

- **Duration:** 4 Months
- **Eligibility:** 8th Pass / Beginners seeking a career in hardware and technical repair

Evaluation Scheme

- **Full Marks:** 200
- **Theory Paper (Electronics & Software Concepts):** 80 Marks
- **Practical Lab (Hardware Diagnostics & Repair):** 100 Marks
- **Internal Assessment/Viva voce:** 20 Marks

Course Syllabus

This program is designed to equip students with practical skills in diagnosing, repairing, and maintaining smartphones, enabling them to start a repair business or work as professional technicians.

Month 1: Basic Electronics & Mobile Hardware Anatomy

- **Basic Electronics:** Introduction to Current, Voltage, Resistors, Capacitors, Diodes, Coils, and Transformers.
- **Testing Equipment:** How to properly use a Multimeter (Analog/Digital), DC Power Supply, and basic testing procedures.
- **Phone Disassembly/Assembly:** Proper techniques and safety protocols for opening and assembling various types of smartphones (Android and iOS).
- **Component Identification:** Recognizing internal parts like the PCB, speakers, microphones, vibrators, and screen connectors.

Month 2: Hardware Repairing & Component-Level Maintenance

- **Soldering & Desoldering:** Using an SMD Rework Station and Soldering Iron safely to remove and replace small components.
- **Motherboard (PCB) Study:** Identifying main ICs (CPU, Power IC, eMMC, Network IC) and their functions.
- **Common Replacements:** Hands-on practice replacing broken screens (folder combos), charging jacks, batteries, and camera modules.

- **Jumper Techniques:** Using jumper wire to fix broken motherboard tracks and restore connections.

Month 3: Mobile Software, Flashing & Diagnostics

- **Introduction to Mobile OS:** Understanding Android/iOS architecture, boot processes, and firmware versions.
- **Flashing & Unlocking:** Using flashing tools (SP Flash Tool, Odin, etc.) to reinstall operating systems and remove forgotten Pattern/PIN/FRP locks.
- **Data Management:** Safely backing up and restoring user data, contacts, and media files before flashing.
- **Fault Finding:** Diagnosing whether a problem is hardware or software-related using secret codes and PC software tools.

Month 4: Advanced Chip-Level Troubleshooting & Shop Management

- **Advanced Chip-Level Repair:** Introduction to BGA IC reballing and safe extraction of glued ICs.
- **Dead Phone Diagnostics:** Step-by-step approach to troubleshooting a completely dead phone, tracing short circuits, and repairing water damage.
- **Customer Dealing & Ethics:** How to communicate with customers, provide accurate repair estimates, and handle repair warranties.
- **Shop Setup:** Essential requirements, inventory management, and tools needed to start and run a successful mobile repairing business.

Final Project: Practical Repair Portfolio

- **Project Task:** Successfully diagnose a dead or locked smartphone, replace a specified hardware component (e.g., charging port), and flash the firmware.
- **Requirement:** Demonstrate safe and precise use of the SMD rework station and software tools in front of the evaluator.
- **Submission:** A completed diagnostic report sheet and a Viva voce on multimeter testing and component safety.

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