

| <i>DEPARTMENT OF PHYSICS</i> | | | <i>Value Added Course</i> | | | | |
|------------------------------|--------------------|---|---------------------------|----------------------------|------------|------------|--------------|
| Course Type | Course Code | Course Code Course Title | Credits | Total Contact Hours | CIA | Ext | Total |
| Value Added Course | | Advanced techniques for smart phone service and troubleshooting | 2 | 30 | | | |

Training outcomes:

1. At the end of the training, the trainee will be able to Appreciate the importance of embarking on self employment and has developed the confidence
2. Identify business opportunities in chosen sector / sub-sector and plan and market and sell
3. Start a small business enterprise by liaising with different stake holders
4. Effectively manage small business enterprise
5. Establish and run a Mobile Handset Repairing unit
6. Repair and Diagnose the Problem of all kinds of faults in Mobile Phone handsets in Hardware as well Software and rectify the faults using tools and equipment and various software.
7. Use appropriate tools, spares and software updates, conduct test for repairs
8. Ensure admittance of faulty handsets, prioritize and conduct repair activities in time to ensure customer satisfaction.

Module-I

Introduction to mobile phones – Current- Voltage- Usage of Digital Multimeter - Resistors, Capacitors and coils –Diodes & Transistors -Gates – OR , NOT, AND – De Morgan’s theorem and proof – universal gates

Module-II

Introduction to Hardware & materials - Speaker, Microphone, Vibrate motor, Display, Drivers, Power switch, Crystal ICs & SMD's -Identification of the different parts of mobile .

Module-III

Basics of Mobile Electronics - Smart Phone Trouble shooting Block Diagram-Mobile Accessories Innovative application of Mobile App.

Module-IV

Practical works

- ❖ Finding mobile model
- ❖ Use of various Tools & Instruments used in mobile phone repairing
- ❖ Assembling & Disassembling
- ❖ Testing of various parts with Multimeter
- ❖ Testing of Mic, Speaker, Ringer, Vibrator, LCD, Antenna using Multimeter
- ❖ Finding faults and replacing the faulty parts
- ❖ Soldering & De-soldering
- ❖ Jumpering
- ❖ Touch /Display Replacement
- ❖ Two types of mobile testing

- Continuity test
 - Voltage test
 - ❖ Mic, Speaker, Ringer trouble shooting Solutions
 - ❖ Insert SIM /No signal solution
 - ❖ Charging Solution
 - ❖ IC Replacement
 - ❖ Keypad Problem
 - ❖ Touch Screen Problem
 - ❖ Network Problem
 - ❖ Dead Mobile trouble shooting
 - ❖ All Hardware Problem
 - ❖ SIM tray/Memory tray Replacement
 - ❖ Charging Connector pin Replacement
 - ❖ Battery Connector and Head Set pin Replacement
- How to Solder and De-solder a component using Blower
(CC pin, BCP pin, SIM tray, Memory tray, Head set pin, All mobile IC's).

Module-V

Software

- ❖ What Is Flashing?
- ❖ Flashing Tools
- ❖ Flashing Method
- ❖ Pattern Lock
- ❖ Password Lock
- ❖ Hanging
- ❖ Logo Hanging
- ❖ Auto ON/OFF
- ❖ Restart
- ❖ SIM lock
- ❖ Unfortunately Google Chrome/Settings/Whats App has Stopped
- ❖ Formatting of Virus affected handsets
- ❖ Flashing of various brands of handsets
- ❖ Unlocking of handset through codes and software.
- ❖ Use of Secret Codes.

Text Book

Course Materials prepared by the course teacher(s)

Books for References

1. H S Kalsi, Electronic instrumentation, 2012, 3rd Edition, Tata McGraw – Hill Education.
2. Helfrick and cooper, Modern electronic instrumentation and measurement techniques, 2016, Pearson.