GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI-25

STATE PROJECT COORDINATION UNIT

(Established under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	**LAPTOP SERVICING**
Course Code	**EC/2020/005**
Course Duration	60 Hours
Minimum Eligibility Criteria	10th/+2 /ITI/Diploma/Graduate
Pre-requisites (if any)	Knowledge of Basic Electronics
Course Objectives	Training module has been designed for the participants to • Understand the function of components in Laptop. • Learn the Assembling of Laptop and storage devices. • Practice Operation System Installation and checking. • Identify the problems in Laptop Systems rectification.
Course Outcomes	At the end of training, the trainees will be able to • Perform Servicing of Laptop • Perform Partition of hard disc in Laptop • Install Operating System Software • Identify and rectify the faults in Laptop • Replace the faulty Peripherals in Laptop
Expected Job Roles	Laptop Service Technician

TEACHING AND SCHEME OF EXAMINATION					
Course Code	Course Name	Hours	Assessment Marks		Duration of Examination
			Min	Max	
EC/2020/005	LAPTOP SERVICING	Theory	24	10	20	3 Hours
		Practical	36	40	80	
		Total	60	50	100	

EC/2020/005 - LAPTOP SERVICING
DETAILED SYLLABUS

Unit No	Modules	No.of.Hours	
		Theory	Practical
I	**Introduction about Laptop**	**08 Hours**	
1.1	History of laptop difference between laptop and desktop	08	-
1.2	Identification of motherboard.		
1.3	Identification of compounds Basics repaired Techniques		
1.4	Tools Required for laptop		
1.5	Over view of Basics troubleshooting basic problems in various sections and components of Laptop		
II	**Problem Identification and Troubleshooting in Laptop**	**08 Hours**	
2.1	Types of Connecters available in laptop , Types of Batteries , Troubleshooting battery problems	08	-
2.2	Troubleshooting Laptop overheating , Laptop Video Troubleshooting		
2.3	Hard disk – overview – Functionalities – Types of Hard disk		
2.4	Data cable – Troubleshooting laptop hard drives		
2.5	Types of laptop Displays – Troubleshooting displays		
2.6	Replacing display		
III	**Operating System and Software Installation**	**08 Hours**	
3.1	Troubleshooting wireless connectivity	08	-
3.2	Troubleshooting Motherboard		
3.3	CPU and memory troubleshooting laptop sound - Troubleshooting keyboard, Pointer and USB		
3.4	OS installation		
3.5	Application software installation and Drive software installation		

IV	Practical	36 Hours	
4.1	Study of Laptop basic components & layout of laptop, Bottom case & top case views- outside components, inside components & laptop inner view		
4.2	Identification of SMT (Surface Mount Technology) components, soldering &disoldering		
4.3	Identification of internal keyboard, external keyboard & touchpad - Keyboard/touchpad keys removing and refixing		
4.4	Upgrading memory modules like RAM, hard disk & BIOS		
4.5	Complete laptop disassembling and assembling		
4.6	Laptop motherboard section and components identification and dismantling a motherboard		
4.7	Components identification of power section - main as well as battery power section , troubleshooting	-	36
4.8	Replacing LCD / LED display		
4.9	Study of BIOS settings of various laptops		
4.10	Troubleshooting RAM, HDD, I/O ports related problems		
4.11	Testing frequencies of circuit and crystal using CRO		
4.12	Troubleshooting problems in power supply and battery charging / discharging section		
4.13	Formatting and Installation of operating system		
4.14	To troubleshoot the Laptop overheating and laptop crashes freezes		
Total theory / Practical Hours		**24**	**36**
Total hours		**60**	

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1	LAPTOP
2	Micro screw driver
3	Microsolder Rod, Iron, Paste

SOFTWARE REQUIREMENT

S.NO	LIST OF SOFTWARE TOOLS
1	Operating System
2	Driver Software

REFERENCE BOOKS

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1	Computer Hardware	HingLown	Independently Published, 2018
2	LAPTOP Repairing & upgrading Corse	Vishnu P.Singh	Que Publishing, 2004
3	Troubleshooting, Maintaining Rapairing PCs	Bigelow Stephen	McGraw-Hill, 2000
4	Computer Hardware and Troubleshooting Lab	Shasshidhar Ganesh G	Independently Published, 2018
5	How to become Laptop Technician	Solihin Laptop	Media Publisher
6	Laptop Repair Complete Guide: Including	Garry Romaneo	Createspace Independent Pub
7	The Laptop Repair Workbook: An Introduction to Troubleshooting and Repairing Laptop Computers	Morris Rosenthal	Foner Books

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the CIICP Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the CIICP Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The passing criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training, certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

END EXAMINATION

ALLOCATION OF MARKS

S.NO	Description	Max. Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Objective and Circuit Diagram	20
	b)Procedure and Connections / Execution	20
	c)Result and Viva	20
	d)Record	20
	Total Marks	**100**

THEORY MODEL QUESTION PAPER

EC/2020/005 – LAPTOP SERVICING

(Maximum Marks: 20)

(N.B: Answer any Twenty questions)   **20x1= 20 Marks**

1. Which type of computer is Portable?
2. What is Laptop?
3. Give the types of Laptop Parts.
4. What is Desktop Computer?
5. Give the difference between desktop computer and Laptop computer.
6. What is Track pad?
7. Draw the Laptop block diagram with neat sketch.
8. What are the blocks in Laptop?
9. Define RAM.
10. What are the types of RAM?
11. What is a Bit and Byte?
12. What are Input and Output Devices?
13. List the Motherboard components.
14. What is Cache memory on motherboard?
15. Draw the Power supply stage in Laptop.
16. Explain the common repair procedure for Hardware related faults.
17. Explain the common repair procedure for Software related faults.
18. What can you do if your windows stop responding?
19. What to do if there are problems after the installation of new software?
20. What will you do if keyboard is not working?
21. Define CPU.
22. Define External Memory.
23. Define Internal Memory.
24. Give the advanced troubleshooting techniques.
25. What are the advantages of advanced troubleshooting techniques?