DEPARTMENT OF EMPLOYMENT AND TRAINING

SYLLABUS

FOR

INDUSTRIAL SCHOOLS

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PAGE....

TOTAL:...

TRADE:

NAME OF THE TRADE : **COMPUTER SOFTWARE AND HARDWARE MAINTENANCE**

DURATION : **1 Year.**

**UNDER CODE OF
REGULATIONS FOR
INDUSTRIAL SCHOOLS** :

AS APPROVED BY

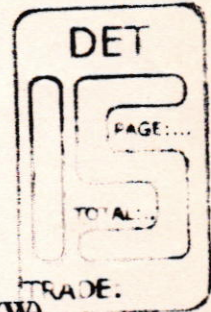**DEPARMENT OF EMPLOYMENT AND
TRAINING,
CHENNAI**

COURSE DETAILS

Name of Trade	: COMPUTER SOFTWARE AND HARDWARE MAINTENENCE
Qualification	: 10TH PASS
Age	: 14-40 Years
Duration	: 1 Year
Number of Trainees	: 20
Number of Practical hours	: 32 hrs. per week
Number of Theory Hours	: 12 hrs. per week
Space Required	
Workshop	: 300sq. feet
ClassRoom	: 200 sq. feet
Power Required in KW	: 3 k.w.

LIST OF COMMITTEE MEMBERS FOR THE TRADE OF COMPUTER SOFTWARE AND HARDWARE MAINTENANCE
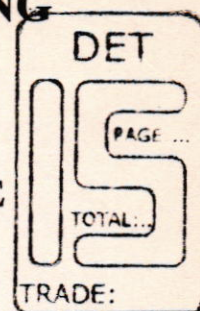
MEMBERS AND EXPERTS:

1. **Mr.K.PANEERSELVAM. M.E.,**
   Regional Joint Director,
   Madurai

2. **Mr. RAJKUMAR M.E., MBA.,**
   Principal
   Government Industrial Training Institute (W)
   Madurai.-7

3. **Mr. P.PRABHAKAR BSc., B.Tech(IT),**
   Training Officer,
   Government Industrial Training Institute
   Ambattur
   Chennai-98.

4. **Mr. G.Subramaninan   M.A., D.P.C.S**
   Vice Principal
   Industrial Technology Institute,
   -Computer Centre,
   Tirunelveli.

5. **Mr. B. SATHEISH KUMAR M.C.A.,**
   Assistant Training Officer
   Government Industrial Training Institute (W)
   Madurai-7

6. **Mrs. R.KALAISELVI D.E.C.E.,**
   Assistant Training Officer
   Government Industrial Training Institute (W)
   Madurai-7

7. **Mrs. Udhaya Lakshmi, M.C.A.,**
   Computer Instructor,
   Dr. Ambedkar Cultural Academy
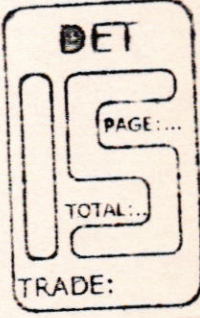   Mandela Nagar
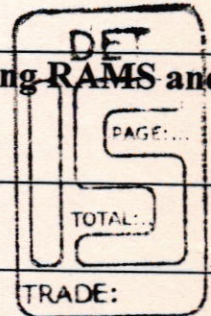   Madurai.

DEPARTMENT OF EMPLOYMENT AND TRAINING

SYLLABUS
FOR
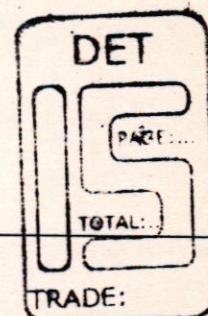## COMPUTER SOFTWARE AND HARDWARE MAINTENANCE
INDUSTRIAL SCHOOL

WEEK NO	THEORY	PRACTICAL
1	**INTRODUCTON TO COMPUTER :** History of COMPUTERS & Computer Generation, Languages ,Software and Application. Types/Classification of computers.	Introduction to the Computer peripherals and connections
2	**HARDWARE AND SOFTWARE CONCEPTS :** **INPUT & OUTPUT DEVICES.** **MEMORY DEVICES:** RAM, ROM, PROM, EPROM, ECCRAM, EDORAM,DDRAM, SDRAM,VIRTUAL, **CACHE SECONDARY MEMORY DEVICES :** FLOPPY , HDD & CD-ROM	System booting procedure for DOS opearting system
3	**INTRODUCTION TO OS** (DOS,WINDOWS,UNIX) **DOS COMMANDS:-** - Internal - External commands Profiling an OS, Booting Sequence: OS files and command processor files. Concept of batch files in MSDOS	Practice on Dos commands
4	**OVERVIEW OF WINDOWS OS** Mouse operations File management,Windows Explorer,accessories, Installation of Hardware and Software	Practice on WINDOWS : (Windows-95,98,2000,Xp.) Program manager & File manager. Accessories

5 to 7	**OFFICE AUTOMATION PACKAGES:** MS WORD-Text selection – Opening, creating,saving documents. Using The Interface (Menu,Toolbars),Editing Text (Copy,delete,move etc).Finding and replacing text.spell check feature/auto correct feature, grammer facility auotext,character formating,page formating.Using Mail merge feature for lables and envelops	**Practice on Msword.** **Creating files and familiarization of menus in MSWORD.** **Document Enhancement** **Mail Merge in Word.**
8	**MS-EXCEL:** Worksheet Basics,Data Entry in cells,entry of numbers,text and formulae. Using the Interface (Toolbars,Menus). Editing basics. Formatting and Calculations.Worksheets using Autofill. Working with formuale.Working with graphs and charts.	**Practice On MS-EXCEL :** - Creating Worksheet. - Formatting and Calculation - Creating graphs and Charts.
9	Data, commands, Instructions and Program	**Exercises on Data, Commands & Instrution in Developing Program**
10 &11	Data Processing and their types dbase, foxpro	**Exercise on Data Processing**
12	Machine language, Lowlevel language and High Level languages	**Simple Programs using Microprocessors Kit**
13	Program Concepts	**Flow Charts, and Algorithms for Simple Programes**
13&14	About BASIC Programming. types of data, declaring data, operators etc.	**Exercirses on BASIC Programming Lnaguage**
15&16	'C'language and its concepts Simple programmes involving arrays and pointers etc	**Simple Programes Using 'C'Language**
17	Computer Architecture and versions like X86, Pentium series	**Block Diagrram of Computer Architecture with Input and optput Devices**
18&19	Pirnciples of Binary , Octal, Hexadecimal Numbers systems Conversion and vice-versa-Purpose	**Exercies on Problmes with conversions between different Number systems**

		of BCD, ASCII Parity bit	
20	Functions of CPU, Memory and IO Unit	Assembling of PC using CPU and other modules
21	Construciton of BUS System and Bus Drivers	Compare the layout and wiring of modules
22	Functions of ALU and Control Unit	Exercises on Microprocessors
23& 24	Registers, Accumulators, Program Counter, Flag Register and stack register	MoreExercies using Microprocesors
25	Distinguish RAMS and RAMS SRAM, DRAM, PROM, EPROM EEPROM, EAPROM.	Locating and Identifiying RAMS and ROMs
26	Components on MOTHER BOARD or MAIN BOARD	Testing motherboard
27	INPUT AND OUTPUT DEVICES & their construction- operations	Printer servicing
28& 29	Graphic Adaptor and MONITOR, Types construction and facilities	Internal Arcitecture of Monitor servicing
30&31	Installatin of Operating Systems, Application SW and Packages	Installation of OS
32	Install Different versions of HARDWARE and SOFT WARE Programs.	Installation of New Hardware & Software
33	Memory-Permenant and Temporary Storage Devices	Handling with different types of storage devices
34&35	Types of Printers and their essentiality and functions.	Printer Installations.(DMP,LASER, INKJET,ETC.)
36&37	BASIC ELECTRONICS: Active and Passive Components, Resistsors, Capacitors, and Inductors or Coils and Transformers	Components Testing Resistsors, Capacitors, and Inductors or Coils and Transformers, Transistors and diodes
38& 39	Diodes, Transistors, FET, MOSFET,& Integrator Circuits	Constructing of Ckt using Diodes Diodes, Transistors, FET, MOSFET,& Integrator Circuits
40	ICs- TTL type and CMOS type logics	Testing Various IC's
41	Digital Electronics: Logic Gates Flip-Flops Counters.	Construct of various Ckt using Logic Gates ,Flip-Flops & Counters
42	PPI, PIC, DMAC	PIN-IN AND PIN-OUT Diagrams.
43	SMPS and its uses, Replacement and minor servicing	Fault Finding & replacing in SMPS

44	introduction to Virus and Diagnosis Softwares	Installation and removal of viruses
45 to 47	**Faults in Computer System:** i. Booting Problems ii Key board Problmes iii Printer Problmes iv Monitor Problems v Installation error Codes vi Dumping of OS	Faults finding and rectification of computer parts.
48	Scanners, Modem, Network cards and Expansion of Memories	Scanning Images
49	Knowing about Internet- Browsing and E-mail Creation and Down Loading	Practice on Internet (Creating of E_Mail ID,web site,visiting various websites,sending and receiving mails.)
50	REVISION	
51	TEST	
52	COMMON TEST	

LIST OF EQUIPMENTS FOR COMPUTER
SOFTWARE & HARDWARE MAINTENANCE COURSE

FOR A BATCH OF 20 TRAINEES

1. PENTIUM III PC SYSTEMS OR WITH LATEST CONFIGURATION :1 Set

2. 3 ½ " FLOPPY AND 5 ¼ " DRIVES :2 Nos each

3. TAPE DRIVE, CD ROM DRIVE , DVD ROM AND CDWRITER :1 each

4. MONITOR CLOUR   17 "   15 " :2 each

5. MONITOR MONOCHROME 14" :3 NOs.

6. KEY BOARD ORDINARY AND INTERNET READY :1 Each

7. SMPS 300W AND 450w :3NOs Each

8. HARD DISK DRIVE (HDD)   2GB, 4GB, 8GB,10GB, 20G BAND :1No Each
    40GB

9. OSCILLOSCOPE   10MHz :1No

10. HEAD CLEANING KIT :5Nos

11. MULTIMETER ANOLOG AND DIGITAL :8Nos. each

12. MOTHER BOARD   (845E VERSION) :5Nos

13. CPU CABINET TOWER TYPE AND DECK TYPE :5Nos each

14. VARIOUS IO CARDS :5Nos each

15. ANTI VIRUS, DIAGNOSTIC SOFTWARE LATEST VERSION :1+1 COPY

16. 80/132 COLUMN DOT MATRIX PRINTER PREFERABLY :2Nos each
      TVS/EPSON

17. SOLDERING AND DESOLDRING PUMP :10 SETS

18. MOUSE TWO BUTTONS, SCROLL, :3Nos. each
      THREE BUTTON & OPTICAL

19. ELECTRONIC COMPONENTS ASSORTED :10Nos each
      LOGIC GATE ICs (CHIPS)

20. WISH BOARD OR BREAD BOARD :5Nos

21. SCREW DRIVER KIT- PHILIPS TYPE AND SLOTTED :10sets

22. DIFFERENT CABLES (24PIN, 40 PIN 5PIN AND 4 PIN FOR CPU :5Nos each.
    COMPATIBLE

SOFTWARE

23. **WINDOWS 98/XP Operating System** — **-2Nos.**

24. **MS-OFFICE 2000 Application Software** — **-1No.**

25. **ANTI VIRUS Diagnosing Software (LATEST)** — **-1No.**

26. **CDs AND FLOPPY Diskette** — **-75Nos each**

INTERNET CONNECTION

27. **BOOKS RELATED TO**
    LANGUAGES **BASIC, 'C'**
    PACKAGES **FOXPRO, VISUAL FOXPRO** **-1Set.**

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ACHIVEMENTS
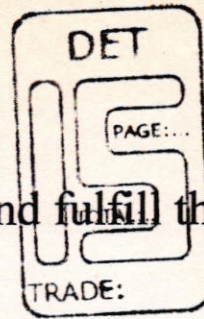
➢ This course is one the most popular and fulfill the needs of the current trends.

➢ All Industries are moving to automize their office and workshop with computer programming.

➢ Developing Programming skill

➢ Trainees can assemble and maintain their own system and there by they can develop their self employment.

➢ Installation of fouthcomming software and updating of current systems can be done.

➢ Browsing of internet (web sites) help trainees for job seeking and develop their personal skill.

➢ Servicing of storage devices (HDD, FDD, CDROM,SMPS) can be done.