

**REGULATIONS AND SYLLABUS**  
**FOR**  
**DIPLOMA IN HARDWARE & TROUBLESHOOTING**

*Offered by*

**BHARATHIYAR UNIVERSITY, COIMBATORE**  
**FROM 2010-2011**

*Under the*

**CENTRE FOR COLLABORATION OF INDUSTRY AND**  
**INSTITUTIONS (CCII)**  
**COLLABORATIVE PROGRAMME**

# **Bharathiyar University, Coimbatore-641046.**

**CENTRE FOR COLLABORATION OF INDUSTRY AND INSTITUTIONS  
(CCII)**

## **DIPLOMA IN HARDWARE & TROUBLESHOOTING** **REGULATIONS AND SYLLABUS**

### **REGULATIONS**

#### **1. Description of course/objective of the course**

This course is designed to prepare technicians with specialized skills, knowledge and attitude to work in finance and accounting field. The program will be conducted by any one of the approved by Bharathiyar University.

#### **2. Eligibility**

- a. A pass in 12<sup>th</sup> Examination or Equivalent Examination recognized by University Tamil Nadu Government

#### **3. Duration of the Course**

The Course shall extend over a period of 12 months.

#### **4. Courses and Scheme of examination**

<b>Course No</b>	<b>Course Title</b>	<b>University examination</b>		<b>Credit</b>
		<b>Internal</b>	<b>External</b>	
<b>Paper.1(Theory)</b>	<b>Hardware Basics</b>	<b>50</b>	<b>50</b>	<b>4</b>
<b>Paper.2(Theory)</b>	<b>Hardware trouble shooting</b>	<b>50</b>	<b>50</b>	<b>4</b>
<b>Paper.3(Theory)</b>	<b>Basic networking</b>	<b>50</b>	<b>50</b>	<b>4</b>

<b>Paper.4(Theory)</b>	<b>Common windows problem &amp; Troubleshooting</b>	<b>50</b>	<b>50</b>	<b>4</b>
<b>Paper.5(Theory)</b>	<b>Pc assembling</b>	<b>50</b>	<b>50</b>	<b>4</b>
<b>Paper.6(Theory)</b>	<b>Communicative English</b>	<b>50</b>	<b>50</b>	<b>4</b>

### **5. Practical Training**

Being a practical oriented program, the focus will be more on practical training. The candidate shall undergo practical training of the computer laboratory.

### **6. Requirement to appear for examination**

Candidate should put in a minimum of 90% attendance to appear for the examinations.

### **7. Passing minimum**

To pass

- A candidate shall secure a minimum of 50% in the University examination for practical and overall 50% in each of the paper (Internal/ External) to pass the examination. A Candidate failing in any one of the components has to reappear for that particular component in the supplementary examinations.

### **8. Classification of successful candidate**

- A candidate who obtains 75% and above, aggregate in theory and practical examinations, in the first attempt shall be deemed to have passed the examination with distinction.
- A candidate who obtains from 60% to 74% of the aggregate in theory and practical examinations, in the first attempt shall be deemed to have passed the examination in the first class.
- Other Successful candidates shall be declared to have passed the examination in the second class.

### **9. Conferment of degree**

A candidate who has passed all the examinations as prescribed shall be eligible to receive the “**DIPLOMA IN HARDWARE & TROUBLESHOOTING**” from Bharathiyar University.

### **10. Course Material**

Course Material shall be supplied by HIS Publications.

### **11. Revision of Regulation and syllabus**

The syllabus and regulations of the courses are subject to modification by the university whenever necessary.

### **12. Question paper pattern**

Theory examination will be for 100 marks with the following components which will be converted into 60 marks.

- Multiple Choice / one word answers: 20x1=20 marks(no choice)
- Short notes(100 words / one paragraph): 5x6=30marks (either or type)
- Descriptive(300 words / one ½ page): 5x10=50 (either or type)

**Paper.1(Theory)**  
**Hardware Basics**

**Overall objective:** At the end of the program the students will be able to understand the fundamentals of Hardware.

**Specific objective:** Student will be able to understand the operations of basic PC hardware.

**Unit 1:**

Introduction to computer hardware, components of mother boards & its types-ports, slots, connectors, add on cards,

**Unit 2:**

Power supply units, cabinet types. Storage devices. Primary & secondary storage medium

**Unit 3:**

magnetic disc, RAM ,ROM ,PROM,EPRM,Floppy,CD Rom,CDRW, DVD, Virtual memory, Cache memory, Linear & Physical memory, video memory.

**Unit 4:**

Input devices-keyboard, mouse, types of mouse, joy stick, how input is taken in & given out, gaming device

**Unit 5:**

Output devices- monitors-different types of monitors, printers & its types, projectors,

**Practical: (It will be assessed as part of internal assessment)**

1. How to troubleshoot different types of Monitors?
2. How to troubleshoot the Mouse?
3. What's the best way to protect your hard drive data?
4. How to prevent power surges?
5. What tools are used to test serial and parallel ports?

**Reference:** G.Dalin. M.Sc software engineering, **HSI PUBLICATIONS**

**Paper.2(Theory)**  
**Hardware trouble shooting**

**Overall objective:** At the end of the program the students will be able to understand the trouble shooting in hardware

**Specific objective:** Student will be able to understand the operations of basic trouble shooting in hardware in practical.

**UNIT 1:**

Introduction mother boards & its types-ports, slots, connectors, add on cards, power supply units, and cabinet types.

**UNIT2:**

Storage devices. primary & secondary storage medium-magnetic disc, RAM,ROM ,PROM,EPRM,Floppy,CD Rom,CDRW, DVD, Virtual memory, Cache memory, Linear & Physical memory, video memory.

**UNIT3:**

Hardware Trouble Shooting: Printers, floppy drive, Microphone.

**UNIT4:**

Hardware Trouble Shooting: Scanner, Network, Hardware failure, Testing, CMOS, CDRM, Hard disk drive,

**UNIT5:**

Hardware Trouble Shooting: Monitor, Mother Board, Sound Card, Video Card, Tips.

**Practical: (It will be assessed as part of internal assessment)**

1. Basic floppy disk drive troubleshooting
  - Bad floppy diskette
  - Not setup in CMOS
  - Confliction with other hardware
  - Not connected properly
2. General scanner troubleshooting
  - Verify cables connected properly to the back of the scanner
  - Ensure that the scanner is getting power
  - Additional parallel port scanner troubleshooting
  - Verify the LPT port mode
3. General microphone troubleshooting
  - Sound drivers not setup properly
  - Not connected properly
  - Issues with microphone
4. How to test a computer CD-ROM / DVD drive for failures.
5. How can you test the memory to determine if it is bad?

**Reference:** G.Dalin. M.Sc software engineering, **HSI PUBLICATIONS**

**Paper.3(Theory)**  
**Basic networking**

**Overall objective:** At the end of the program the students will be able to understand the fundamentals of networking and will be able to understand the recent networking models.

**Specific objective:** Student will be able to implement the basic networking concepts with modern networking techniques.

**UNIT 1:**

Introduction to networks: Why networks?, Basic network concepts, applications & uses of computer networks, different layers in networks, internet & web concepts, network security.

**UNIT 2:**

Software & hardware issues in networking, reference models, OSI, TCP, IP, UDP

**UNIT 3:**

Transmission medium –wired communication, wireless communication, satellite communication, PSTN-first generation, second generation, third generation.

**UNIT 4:**

Modern Network Techniques: Basic modern network mediums, basic modern Modem, Ethernet, Switch, Hub, Routers

**UNIT 5:**

Internet Standardization, fire walls, proxy server, URI, URN, HTML, XML, MIME, HTTP Sockets.

**Practical: (It will be assessed as part of internal assessment)**

1. How to check the Network card not connected properly.
2. How to identify Bad network card drivers or software settings.
3. How to Firewall preventing computers from seeing each other.
4. Demonstrate the Connection related issues.
5. How to identify Bad network hardware.

**Reference:** G.Dalin. M.Sc software engineering,  
J.Thija, **HSI PUBLICATIONS**

**Paper.4(Theory)**  
**COMMON WINDOWS PROBLEM**  
**& TROUBLESHOOTING**

**Overall objective:** At the end of the program the students will be able to understand the fundamentals of windows problems & trouble shooting

**Specific objective:** Student will be able to understand the operations of basic trouble shooting in OS.

**UNIT I:**

Overview of H/W & S/W, network, internet, Operating system, Application program, File types & managing files, file backups, **Common windows problem & troubleshooting**-windows problem:- After installation of new Software, Running slow, Running error.

**Unit 2:**

Running error, Runtime error, dived error, windows program not responding, Restart without warning.

**Unit 3:**

Turn off without warning, freezing of windows, booting slow, win32 error. Fixing: Invalid page fault.

**Unit4:** fatal exception error, General protection fault, Blue Screen, Tips do & don't.

**Unit 5:** Security-Viruses, Worms, Spam, E-Mail Virus, Securing pc, Boot device.

**Practical: (It will be assessed as part of internal assessment)**

1. Troubleshoot the following OS problems
  - Unable to copy and paste
  - Replacing Windows Splash Screens
  - Out of memory error
  - Windows cannot find Program.exe to open ...
  - Windows Installer error
2. Demonstrate the ways to solve the e-mail viruses
3. What are different types of Backups available?
4. What are the installation procedures of new software?
5. How to fix a fatal exception error?

**Reference:** G.Dalin. M.Sc software engineering, **HSI PUBLICATIONS**



**Paper.5(Theory)**  
**Pc assembling**

**Overall objective:** At the end of the program the students will be able to understand the basics of assembling a computer & installing OS

**Specific objective:** Student will be able to assemble & install a PC using WINDOWS

**Unit1:**

Steps for assembling a PC-commonly used devices an overview, assembling a SMPS in a cabinet, fixing a processor in a mother board, assembling RAM in a motherboard, pinning a cooling fan in a mother board.

**Unit 2:**

Assembling a hard disc drive in a cabinet, assembling a CD/DVD ORM in a cabinet. Assembling a floppy drive in a cabinet, fixing motherboard In a cabinet.

**Unit 3:**

Connecting the cables from the SMPS to motherboard, hard disc, drives & etc.Establishing data connection for to motherboard, hard disc, drives. Fixing wires for power restart switches, fixing wires for power & HDD LED's, fixing wires for external USB and Audio connections.

**Unit 4:**

Steps for installing windows98 & windows XP, Software Trouble Shooting:- Dos, XP, 2000.

**Unit5:**

Audio, Games, OS, Audacity error in sound device, Installation of Software program.

**Practical: (It will be assessed as part of internal assessment)**

1. Assemble a PC by fixing motherboard, processor and cooling fan.
2. Fix a Hard drive and DVD and connect the Data, power cables.
3. Connect the power cables with SMBS
4. Install windows XP Operating System with service pack
5. Install an Audio driver software and check the functionality

**Reference:** G.Dalin. M.Sc software engineering, **HSI PUBLICATIONS**

**Paper.6(Theory)**  
**COMMUNICATIVE ENGLISH**

**Objectives**

1. Acquiring a new perspective on communicative English
2. Improving and extending the range of communication in English.
3. Acquiring written and speech communication.

**Unit I –Grammar in Use: Concepts**

Parts of Speech, Tense and Aspect, Mood, Cause, Reason and Purpose, Agreement, Degrees of Comparison, Conditional clauses –Seeking Permission, Request, Command, Reprimand, etc

**Unit II–Types of Communication**

Verbal Communication –Non-Verbal Communication Language Variety – Geographical, Formal/In formal, Register, Dialect etc.

**Unit III–Written Communication**

Technical Writing (Writing Reports) Business Communication (letters, memos)

**Unit IV–Interpersonal Communication**

Dealing with Boss, Dealing with subordinates

**Unit V–Oral Communication**

Job Interviews, Public Speech, Group Discussions, Brain Storming

**References:**

- Developing Communication skills-Krishna Mohan & Meera Banerji, Macmillan India Ltd
- How to Write and Speak Better –Reader’s Digest, The Reader’s Digest Association Limited
- The Right Word at the Right Time-Reader’s Digest, The Reader’s Digest Association Limited
- Modern Linguistics, Prof. Krishnaswamy, S.K. Verma, Oxford University Press