**BSc (M/S/CS) Syllabus**

**Computer Hardware & Networking**

**Unit-I**

Evolution of Computers, Generation of Computers, Classification of Computers Analog Digital and Hybrid Computers, Classification of Computers according to size, Supercomputers, Mainframe Computers, Personal Computers (Different Types), Characteristics of Computers, Block Diagram of a Digital Computer, types of OS. Computer Fundamentals History and Generations of Computer, Types of Programming Languages, software, Classification of software, Application software and System Software, Structured Programming, Algorithms, and Flowcharts with Examples, Changing Desktop, Backgrounds, Mouse, Pointer, Screen Saver and Notepad ,WordPad, MS Paint, PC Boot Process and DOS Function and file system

**Unit-II**

Input Devices and output devices like VDU, Printers. CPU, Motherboard, RAM/ROM, Hard Disk Drive, Optical Drive, Keyboard, Mouse, Monitor , Printer, Scanner, What is a Virus? How Virus Attacks a Computer Types of Viruses (Boot Sector Virus, Partition Virus, File Virus, Trojans, Etc.), Malwares, Adwares, Spywares, Phishing Attacks, etc. Prevention and Curing Virus and Spywares, Antivirus, Internet Security Tools, Updates, Use of Internet Concepts, Surfing, Mailing & Social Media, Use of identifying different Desktop Icons. My Computer, My Documents.

**Unit-III**

Windows XP/ window 7 / window vista Architecture, Disk Management Procedure, Operating System Installations and Procedures/ Booting Procedures, Windows Configurations & Adding Device Drivers, Cabling and Characteristics, Installing and Configuring an NIC, Install and configure Internet, Diagnose faults and identify the repairs necessary, Necessary backups for the security of customer data before repairs, Perform repairs to rectify faults.

**Unit-IV**

Internet Network:Introduction to Internet, Uses of Internet, Working on Internet using various browsers like IE, Chrome, Firefox, Opera, etc. Explaining URL, HTTP, HTTPS, etc. Clearing Browser Cache, Introduction to Network Devices: ADSL Router, Wi-Fi Router, Wireless Access Point and Repeater, Firewall, Configuring and securing Wireless Networks and Access Points, Software installation and booting like Introduction to Dual Boot / Multi Boot Windows 8.1, Windows 10, Comparison between Windows XP, Win 7, Win 8.1 and Windows 10

Providing Wireless Client Access with Secure Key and MAC Filtering, Introduction to Networking /Types of Networking, Crimping RJ45 Connectors, Introduction to windows networking, Data Sharing, Printer Sharing. Remote Desktop Connection, Virtual Network Computing, Creating Shared Folders for each user, Assigning Access Rights and Changing Ownership for Shared, Folders using File Server Wizard. Installing, Configuring Windows Server, DNS, ADS, DHCP Configuration.

**References:**

1. The Architecture of Computer Hardware and System Software fourth edition, by Irv Englander
2. Computer Repair - A Complete Illustrated Guide To Pc Hardware by Karbo Michael
3. Computer Networking & Hardware concepts by Nurul Sarkar
4. Computer Fundamentals: Pradeep K. Sinha & Priti Sinha
5. [Upgrading and Repairing PCs](https://www.goodreads.com/book/show/106354.Upgrading_and_Repairing_PCs) by [Scott Mueller](https://www.goodreads.com/author/show/61575.Scott_Mueller)
6. [Data Communications And Networking (SIE) 4th Edition](https://www.amazon.in/DATA-COMMUNICATIONS-NETWORKING-Behrouz-Forouzan/dp/0070634149/ref=sr_1_1?qid=1657905526&refinements=p_lbr_books_authors_browse-bin%3ABehrouz+A.+Forouzan&s=books&sr=1-1) by Behrouz A. Forouzan

**Teaching Plan 2022**

**BSc (M/S/CS) Syllabus**

**Paper Name: Computer Hardware & Networking** **Paper Code:** 1

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| **Computer Hardware & Networking L T P**  **60 30 00** | | |
| **Unit No.** | **Unit Name /Topic Name** | **Expected No. of Teaching Days 90** |
| **I** | Evolution of Computers, Generation of Computers, Classification of Computers Analog Digital and Hybrid Computers | **Total Lec.-19** |
| I. 1 | Classification of Computers according to size, Supercomputers, Mainframe Computers, Personal Computers (Different Types) | 3=L(2)+T(1) |
| I. 2 | Characteristics of Computers, Block Diagram of a Digital Computer, types of OS. Computer Fundamentals History and Generations of Computer | 5=L(3)+T(2) |
| I. 3 | Types of Programming Languages, software, Classification of software, Application software and System Software, | 4=L(3)+T(1) |
| I. 4 | Structured Programming, Algorithms, and Flowcharts with Examples | 3=L(2)+T(1) |
| I.5 | Changing Desktop, Backgrounds, Mouse, Pointer, Screen Saver and Notepad ,WordPad, MS Paint, PC Boot Process and DOS Function and file system | 4=L(2)+T(2) |
| **II** | **Use of Tools/ Equipment and Various components in**  **the computer,** **Input Devices and output devices like VDU, Printers.** | **Total Lec.- 22** |
| II.I | CPU, Motherboard, RAM/ROM, Hard Disk Drive, Optical Drive, Keyboard, Mouse, Monitor , Printer, Scanner | 5=L(4)+T(1) |
| II.2 | What is a Virus? How Virus Attacks a Computer Types of Viruses (Boot Sector Virus, Partition Virus, | 5=L(3)+T(2) |
| II.3 | File Virus, Trojans, Etc.), Malwares, Adwares, Spywares, Phishing Attacks,etc. Prevention and Curing Virus and Spywares.Antivirus, Internet Security Tools, Updates | 5=L(3)+T(2) |
| II.4 | Use of Internet Concepts, Surfing, Mailing & Social  Media | 4=L(3)+T(1) |
| II.5 | Use of identifying different Desktop Icons. My Computer, My Documents | 3=L(2)+T(1) |
| **III** | **Windows XP/ window 7 / window vista Architecture** | **Total Lec.-21** |
| III.1 | Disk Management Procedure, Operating System Installations and Procedures/ Booting Procedures | 5=L(3)+T(2) |
| III.2 | Windows Configurations & Adding Device Drivers, Cabling and Characteristics | 3=L(2)+T(1) |
| III.3 | Installing and Configuring an NIC, Install and configure Internet | 5=L(4)+T(1) |
| III.4 | Diagnose faults and identify the repairs necessary | 4=L(2)+T(2) |
| III.5 | Necessary backups for the security of customer data before repairs, Perform repairs to rectify faults | 4=L(3)+T(1) |
| **IV** | **Internet Network :** Introduction to Internet, Uses of Internet | **Total Lec.-28** |
| IV.1 | Working on Internet using various browsers like IE, Chrome, Firefox, Opera, etc. Explaining URL, HTTP, HTTPS, etc. Clearing Browser Cache | 5=L(3)+T(2) |
| IV.2 | Introduction to Network Devices: ADSL Router, Wi-Fi Router, Wireless Access Point and Repeater, Firewall. | 4=L(3)+T(1) |
| IV.3 | Configuring and securing Wireless Networks and Access Points, Software installation and booting like Introduction to Dual Boot / Multi Boot Introduction to Windows 8.1, Installation, Installation and Working on Windows 8.1, Windows 10, Comparison between Windows XP, Win 7, Win 8.1 and Windows 10 | 6=L(4)+T(2) |
| IV.4 | Providing Wireless Client Access with Secure Key and MAC Filtering. | 4=L(3)+T(1) |
| IV.5 | Introduction to Networking /Types of Networking, Crimping RJ45 Connectors, Introduction to windows networking, Data Sharing, Printer Sharing. Remote Desktop Connection. | 4=L(3)+T(1) |
| IV.6 | Virtual Network Computing, Creating Shared Folders for each user, Assigning Access Rights and Changing Ownership for Shared, Folders using File Server Wizard. Installing, Configuring Windows Server, DNS, ADS, DHCP Configuration | 5=L(3)+T(2) |

**References:**

1. The Architecture of Computer Hardware and System Software fourth edition, by Irv Englander
2. Computer Repair - A Complete Illustrated Guide To Pc Hardware by Karbo Michael
3. Computer Networking & Hardware concepts by Nurul Sarkar
4. Computer Fundamentals: Pradeep K. Sinha & Priti Sinha
5. [Upgrading and Repairing PCs](https://www.goodreads.com/book/show/106354.Upgrading_and_Repairing_PCs) by [Scott Mueller](https://www.goodreads.com/author/show/61575.Scott_Mueller)
6. [Data Communications And Networking (SIE) 4th Edition](https://www.amazon.in/DATA-COMMUNICATIONS-NETWORKING-Behrouz-Forouzan/dp/0070634149/ref=sr_1_1?qid=1657905526&refinements=p_lbr_books_authors_browse-bin%3ABehrouz+A.+Forouzan&s=books&sr=1-1) by Behrouz A. Forouzan