

Significance of the Add-on Courses

The objective of add-on course is to make under graduate course career and market-oriented, providing the students the knowledge for self employment. The benefit of globalization is that a vast world of opportunities is open for our young youth. Our aim must be to prepare them to it fully in this fast changing challenging world. No most of the IT jobs of the major foreign companies are done by Indian IT companies. To meet the standards of these foreign clients our students must get better knowledge in computer technology to get jobs in IT field. So the department decides to offer the following computer based add-on courses as one of the complementary course offered is Computer Applications.

1. Computer Applications
2. Advanced Programming
3. Information Technology
4. Computer Hardware Maintenance and Networking

Budget for the Courses

Year I

Description	Hours	Amount	Total
Teaching Faculty Remuneration (Theory)	150	250	37500
Teaching Faculty Remuneration (Practical)	150	250	37500
Library Books			10000
Stationary & Miscellaneous			2000
Computer for Co-ordinator			25000
Equipments (Color A4 Laser Printer)			18000
Co-ordinator Remuneration			5000
		Total	1,35,000

Year II

Description	Hours	Amount	Total
Teaching Faculty Remuneration (Theory)	300	250	75000
Teaching Faculty Remuneration (Practical)	300	250	75000
Library Books			3500
Stationary & Miscellaneous			1500
Co-coordinator Remuneration			5000
		Total	1,60,000

Year III

Description	Hours	Amount	Total
Teaching Faculty Remuneration (Theory)	450	250	112500
Teaching Faculty Remuneration (Practical)	450	250	112500
Library Books			3500
Stationary & Miscellaneous			1500
Co-coordinator Remuneration			5000
		Total	2,35,000

Year IV

Description	Hours	Amount	Total
Teaching Faculty Remuneration (Theory)	450	250	112500
Teaching Faculty Remuneration (Practical)	450	250	112500
Library Books			3500
Stationary & Miscellaneous			1500
Co-coordinator Remuneration			5000
		Total	2,35,000

Year V

Description	Hours	Amount	Total
Teaching Faculty Remuneration (Theory)	450	250	112500
Teaching Faculty Remuneration (Practical)	450	250	112500
Library Books			3500
Stationary & Miscellaneous			1500
Co-coordinator Remuneration			5000
		Total	2,35,000

Total Budget for 5 Years

Annual Budget	Amount
I Year	1,35,000
II Year	1,60,000
III Year	2,35,000
IV Year	2,35,000
V Year	2,35,000
Total	10,00,000

Detailed Syllabus of the applied Courses

1. COMPUTER APPLICATION

CERTIFICATE COURSE

Introduction in Computer

History and Developments of computers
Computer Components
Number Systems
Input and Output Devices
Operating System
Introduction of Operating System
Disk Operating Systems(DOS)
Windows 98,XP,Vista
Microsoft Word
Microsoft Excel
Microsoft Power Point

Soft Skill and Writing Techniques

Communication
Vocabulary
Conversational English
Resume Writing
Group Discussion
Writing Skills
Email and Telephone Etiquette
Project/training

DIPLOMA COURSE

Programming in C

Introduction to C languages and C Compiler
Data types ,Variables
if - else statements, switch statements
Loops - while, do-while, for
Arrays
Functions
Structures
Pointers
Files

Database Management Systems

Introduction to Database Management Systems
Creating, Altering, deleting databases
Adding, Editing and Deleting records

Web Page Designing

Introduction to Web Page Designing

HTML

DHTML

VB Script

Java Script

Microsoft FrontPage

Project/training

ADVANCED DIPLOMA COURSE

Programming in C ++

Introduction to C languages and C Compiler

Data types ,Variables

if - else statements, switch statements

Loops - while ,do-while, for

Arrays

Functions

Structures

Class and Objects

Function Overloading and Operator Overloading

Friend functions and Bridges

Pointers

Files

Programming in VB

Introduction to VB

Forms ,Environment ,Tools

Data types and Variables

Intrinsic Controls

Procedures and functions

Database programming

ActiveX Controls

Personality Development and Interview techniques

Attitude

Motivation

Grooming

Confidence

Body language

Interview Skills

Project/training

2. ADVANCED PROGRAMMING

CERTIFICATE COURSE

Paper I. Fundamentals of D T P - 4 credits

Navigating in Page Maker, Page Maker Environment Elements, Navigating a Page Maker Document, Creating a Document, Document Setup and Saving, Using text, Using and Importing Graphics, Multi – Page Documents, Multi – Page Document Setup, Master Pages, Inserting Pages and Working with Text, Working with Frames, Creating Text Frames, Formatting Text, Character Formatting, Paragraph Formatting, Working with Indents, Tabs, and Rules, Graphics – Working with Text and Graphics, Attaching Text to a frame. type options.

Basic of MS Words, Excel and Power Point.

Photoshop – Introduction overview of Photoshop Elements Interface and functionality of different options. Basic Operations, edit image, layer, filter and view options, workspace, the Caption, Rotate and Stack Features, Getting to know the View and Organize Photos Interface and their purpose. Getting Photos, Selecting Images. Auto Smart Fix, Version Set, Photo Compare, Set as Wallpaper, Photo Review Tagging Photos. Cropping and Resizing Images, Auto Color Correction, Shadows and Highlights, Brightness and Contrast, and Adjust Smart Fixfeatures. Red Eye Removal and Spot Healing Brush Tool, Creating a Simple Slide Show.

Paper II Programming Logic and Objective Oriented Programming - 4credits

Principles of object oriented programming – procedure oriented programming, concepts of oop, benefits of opp, applications of oop, object oriented languages, the structure of a C++ data types – basic, user defined and derived data types, declaration of variables, operators in C++.

Functions in C++ - - - overview, function prototype, call by reference, return by reference, inline functions, default arguments, const arguments. Overload functions. Friend and virtual functions.

Class and objects - - - Introducing C++ classes, Arrays within a class, arrays of objects, objects as function arguments, pointers to members, Constructors and Destructors, different types, static data members, static member functions, dynamic initialization of object. Operator overloading – Overloading unary and binary operators, overloading using friend functions,

Manipulation of strings using Operators.

Inheritance – types of inheritance, inheritance and protected members, inheriting multiple base classes, virtual base classes, constructors in derived classes.

Virtual functions, and iostream library – Virtual functions – pointers to objects, this pointers, pointers to derived classes, pure virtual functions, early and late binding. C++ streams – the output operators <<, input, Additional input / output operators, classes for stream operations, opening and closing a file.

Text books:

Object Oriented Programming with C++ by Balaguruswamy

C++ primer by Stanley B Lippman

Reference Text:

Programming with C – Byron S Gottfried (Schaum's outline series), Tata Mc-Graw Hill

Paper III. Soft skills and writing Techniques - 4 credits

Communication

Grammar

Vocabulary

Conversational English

Resume writing

Group discussion

Written skills

E-mail & Telephone etiquette

Paper IV - On-the-job Training and Project Based on 1.1 / 1.2 - 8 credits

DIPLOMA COURSE

Paper I Programming Tolls I (Elective) - 4 credits

Programming Techniques using VB. NET / C#.NET

Introduction to Relational Database Management System: Introduction to database Systems, Entity – Relationship model, Relational model and Relational Algebra, SQL – the Relational database standard, database design, Overview of transaction management.

Text books:

Database system concepts – Silberschatz, Korth and Sudarshan

Database management systems – Alexis Leon, Mathews Leon, Vikas Publishing house
VB. NET

Introduction to Programming with Visual Basic. NET, Basic Concepts and a Simple Application Using Variables, Constants, Functions, Processing Decisions, Looping Structures and Lists, File and Database Applications, File Access, Dialog Boxes, Error Handling, Menus, Connecting to Database, Advanced Programming Constructs, Sub Procedures, Function Procedures, Modules, Arrays, Structures, Collections. NET Architecture and Advanced Tools, Objected – oriented Programming, Creating Distributed Web Applications, XML and ADO.NET, Graphics, Printing, Reporting.

Text books:

Koneman, P. A. (2004). Visual Basic.NET: Programming for business. Upper Saddle River, NJ: Prentice Hall.

OR

C#

The Introduction to C#

MS Visual C# IDE, Variables and Data Types, Operators and Operands, Data reading / Formatting, Introduction to Conditions, conditional Statements, Formulating Expressions, Members of the Main Class, Methods and their Parameters. Introduction to Classes –The Properties of a Class, Classes interactions, Inheritance Fundamentals of Control Design, Common Characteristics of Windows Controls.

Methods of Managing Windows Controls, Form and Dialog – Based Application

Controls Containers, Applications Resources, File Processing, Database through ODBC, Graphics overview, ADO.net.

Text books:

Mastering visual C#

Microsoft Visual C#

Paper II Web Designing tools I - 4 credits

Introduction – understanding tags, Attributes, html editors – web browsers creating your first Html Documents, Applying structure tags, Applying Common tags and Attributes, including fancier formatting. Linking your Documents – URL – Types of URL – Constructing Link Anchors – Linking to a specific location in a documentation –inserting email links. Using Style sheets, properties – Setting classification properties. Publishing your HTML documents – Including Images – Developing images – Adding Images – Adding an image including alternative text – Specifying the height and width – Using Image as links – Creating the image map. Developing tables – Creating basic tables – Adding or removing rows and columns – Spanning rows and columns – Adding captions – Formatting tables – Developing HTML forms – Determining for content – Creating forms – Processing forms – creating frames – use of frame – creating frames – enabling effective navigation.

PHP

Writing PHP page. Variables, contents, data types – Literals and identifiers, data values, Type juggling and Type casting, variable variables. Useful functions for variables – get type (), set type (), isset (), empty (). Different type of operators, variable assignment shortcuts, operators precedence and associativity. Conditional statements, Loops, including files in PHP pages exiting a PHP page. Functions – passing arguments, life time nested functions & recursion, assigning functions to variables, Arrays – simple arrays – string indexed arrays, multi– dimensional arrays, sorting functions, using arrays with form elements, string manipulation and regular expression – basic string functions, regular expressions, basic pattern matching, the regular expression functions. File handling and data storage – file handling, Non Relational database – opening the database, lopping through the database, searching the database, deleting an entry, displaying and entry, adding a new entry, updating the database.

PHP and SQL database – architecture of a web database application – structured query language, a PHP SQL code tester, SQL language reference – data definition statement – create, drop. Data manipulation statement – insert, replace, update, delete. Database search statements – select, HP support for database connectively, MySQL API supporting PHP.

Text book:

Mastering HTML – Deborah S. Ray / Eric J. Ray – BPB publications

Professional PHP programming wrox publications – Jesus Castagnetto, chris Scollo, Harish Rawat, Deepak Veliyath.

Paper III Personality development and Interview Techniques - 4 credits

Attitude

Motivation

Grooming

Confidence

Building Presentation skill

Body language
Interview skills

Paper IV On-the-job training and Project based on 2.1 - 8 credits

ADVANCED DIPLOMA COURSE

Paper I Introduction to Linux - 4 credits

I. Introduction to Linux – History, Architecture, comparison with unix, features and facilities of Linux, shells in linux, different variants of linux – Red Hat, Ubuntu, Mandrake, Debian, Susse.

II. Files and file structure – linux file system, file naming conventions, path types of file names and users, directory commands, file commands, text editors, various editors, - vi editor, emacs editor, joe editor, locating files, standards files, redirection, filters, pipes

III. Files access permissions (FAP), viewing changing FAPs, introduction to shells, shell variables – local and global variables, command substitution – exp command, arithmetic expression, conditional execution constructs, iterations, parameter haling in shell script, shift command, controlling process execution, scheduling tasks. Communication in linux.

IV. X – window system, x desktop, GNOME desktop environment – feature, GNOME panel, control center – caplets, document handlers, multimedia caplet, peripherals, file manager K desktop environment – interface, desktop, panel, conqueror, koffice, kmail, KDE control centre, Kjots Hdiskfree.

Text book:

Operating system – Linux, NUT press, PHI publishers.

Reference book:

Unix – Shell programming, Yashwant Kanetkar, BPB publishers.

Paper II Programming Tools II (J2EE) 4 credits

I. Java introduction features, Comparison with C & C++, Data Types, Operators, Loops, conditional Statements, Arrays, Simple Java program compilation / execution, String class, Methods and sample string programs, String array, Functions and Constructors, Method overloading and Constructor overloading, Reading user input, Multi Classes.

II. Interfaces, Packages, Threads, Multithreading, Exceptions: try – catch, throw, Throws, Exception Handling, util classes, Vector class, Array List, String Tokenizer, Date, File class, File Streams, Byte Streams, File Streams, Char Streams, DBMS and SQL Concepts, JDBC & DBMS, Applets, AWT, Listener Interfaces.

II. SWING Basic [Botton, Label, Text Field, Text Area, JFrame, JPanel] SWING [Check Box, Radio Button, Button Group, Tabbed Pane, JMenu, JMenu Item, JMenu Bar] Network concepts, Inet addresses, Socket Class, URL, URL Connection, Datagram, RMI,HTML, JavaScript, servlets, JSP

Text book:

J2EE Complete reference.

Paper III Web Designing Tools II (Elective) 4 credits

ASP.NET

Introduction – Basic Concepts – Introduction to ASP.NET, features – ASP.NET advantages – Migrating ASP to ASP.NET. Getting in to et working – Object Oriented Model – ASP.NET server control – Common Language Runtime – Application Domain – Runtime Host.

Language Support – Primitive Types, Operators – Variable deceleration – Statements – comments – Accessing Index Properties – Declaring Simple Properties – Arrays – Initialization – IF statement – Case statement – For Loop – While Loop – String Concatenation – Event Handlers – Casting – Conversions.

Web Forms – Asp.Net Web Forms – Using ASP <%%> Render Blocks – Introduction to ASP.NET Server Controls – Server Side Processing of the Client – side Events – Ad-rotators – Handling Server Control Events – List Data and Data Binding – Data List – Repeat Columns – Form Validation Controls.

HTML Controls – Button form – Image – Check Box – Image – Text – Text Area
Web Controls – Ad-rotator – Button – Calendar Web Control – Selection link Graphics – Check Box – Check Box List – Comparison Validatiior – Custom Validatiior – Selecting items in Data List – Editing Data List Items – Drop Down List – Label Link Button – Table – Table Row – Table Cell.

Application or Session Scoped Object – Managing Application State – Using Session State – Configuring Session State – Using client Side Cookies – Setting the expire property in Session – Using the view state HTTP Handlers and Factories – Creating about the custom HTTP Handler – Cashing Page Output Cashing – Output Cashing with Database – Selectively querying the Database – Page Data Cashing.

Text books:

ASP.NET Made Simple – BPB Editorial Board

Mastering ASP.NET – Russell Jones – BPB Publications

ASP.NET TIPS & TECHNIQUES – Greg Buczek – TATA McGRAW – Hill Edition.

OR

MACROMEDIA FLASH

BASICS OF TOOL BOX

2D DRAWING

BASICS OF ANIMATION

MOTION TWEEN

SHAPE TWEEN

MOTION GUIDE

BITMAP TRACING AND EDITING

BASICS CONCEPTS ABOUT ACTION SCRIPTS.

DREAMWEAVER

Design a Website

Explore the Dreamweaver Environment

Creating a Website

Define a Website

Create Basic Web Pages

Save a Web Page

Building a Website

Organize Files and Folders

Create Templates
Adding Content to Web Pages
Insert Images
Manage Tables
3DS MAX (foundation)
BASIC CONCEPTS ABOUT 3D ANIMATION
3D MODELING
MATERIAL EDITING
LIGHTING AND EFFECTS
CAMERA AND 3D ANIMATION RENDERING

Paper IV On the job Training and Project Report based on 3.2 / 3.3 - 8 credits

3. INFORMATION TECHNOLOGY (IT)

CERTIFICATE COURSE

Paper I - 4 credits

Unit 1- Introduction to Computers

Introduction to computers, uses of computers in modern society History of computers. architecture of computers, characteristics of computers-speed, accuracy, storage and versatility; Computer Languages-Evolution of languages, machine language. assemble and high level language, third, fourth and fifth generation languages; interfacing with computers- I/O devices; Storage devices-primary storage devices, secondary storage devices. 2 hrs

Unit II - Operating Systems & MS-Office

Operating System- Categories of OS, Functions of OS, Windows OS, MS-DOS. Linux. UNIX; MS-Office (Word, Excel, Power Point. Access), Information Systems, Automated Office Functions. 13 hrs

Unit III - Introduction to Publishing

Introduction to Publishing - Print, Visual, Web; DTP, Word Processing, Page Layout Font, Typesetting and Layout, Softwares -Adobe Page Maker, Quark Express etc.; Image Processing, Understanding Color, Computer Graphics, Graphic Designing. Website Designing, Prepress Technology; Softwares- Adobe Photoshop, Corel DRAW. Adobe InDesign, Macromedia Flash etc. 40hrs

Unit IV- Essentials of Printing Technology, Offset Printing techniques; Advertising Industry, Industrial Techniques, Hardware requirements; Visual Media, Introduction to Animation - 2D and 3D. 5 hrs

Practical

File management in Windows, Creating and formatting a document, Spreadsheet handling with Excel, Presentation Packages, Internet etc.

References:

1. Peter Norton's Introduction to Computers, Sixth Edition, Tata Mc Graw Hill.
2. Fundamentals of Computers, V. Rajaraman, Prentice Hall of India, New Delhi.
3. Computer Fundamentals, P.K. Sinha, BPB Publications, New Delhi.
4. Systems Programming and Operating Systems, D.M. Damdhere, Second Revised Edition.
Tata MC Graw Hill
5. Operating System Principles, Seventh Edition, Abraham Silberschatz, Peter Galvin and Gagne, John Wiley.
6. Windows 98, Users Guide and Reference.

Paper II – Object oriented programming and C++ 4 credits

Unit I -Introduction to object oriented concepts; C++ Programming basics, Loops and decisions, Structures, functions; Objects and Classes: Access specifiers- specifying the class, using the class, C++ objects as physical objects, objects as data types, constructors. destructors, Objects as function arguments, returning objects from functions. 12 hrs

Unit II - Arrays: arrays, arrays as class member data, arrays of objects, string, strings as

class members. 6 hrs

Unit III - Inheritance: derived class and base class constructors, class hierarchies. private and public hierarchies, levels of inheritance, multiple inheritance, classes within classes.

8 hrs

Unit IV - Pointers in C++: memory management-new and delete, pointers to object. pointer to pointer, polymorphism-operator overloading -overloading unary operator. overloading binary operators. Function overloading, virtual functions and other subtleties. friend functions, assignment and copy-initialisation, this pointer. 13 hrs

Unit V - Files and Strings: streams, string I/O, character I/O, object I/O, I/O with multiple objects, file pointers, disk I/O with member functions, redirection. 6 hrs

Unit VI - Introduction to VB: Introduction, VB developing environment, exploring the menu bar, using the tool box, elements of VB syntax, using literals, declaring and using constants, data types, declaring and using variables, using the operators, subroutine and functions, looping and decision control structure, If/then/Else structure, select structure. For/next structure, Do loop structure, while/wend structure

References:

- 1.Object oriented programming in Microsoft C++ - Robert Lafore
- 2.A C++ primer- Stanley B Hippman
- 3.The C++ programming language- Bjarne Stroustrup
- 4.Mastering Visual basic 6 - Evangelos Petroustos

Paper III – Communicative English – 4 credits

Unit 1 - Meeting People --Greeting - Wishing Farewell - Expressing Gratitude. Appreciation - Apologizing - Introducing Oneself - Introducing Others ...

Unit 2 - Importance Of Correct Utterance --Phonetics - Pronunciation - Accent - Modulation

Unit 3 - How To Make A Statement -- Subject -Verb Order - Affirmative and Negative Sentences -Agreement Between Subject And Verb.

Unit 4 - How To Ask Questions? - Subject -Verb Order - Types of Questions - Affirmative and Negative Questions.

Unit 5 - How To Make Requests? -- Give Orders or Commands - Subject -Verb Order Use of "Let with First and Third Person Subjects".

Unit 6 - Different ways of Stating Some thing - -When the Object Assumes Importance {Active and Passive}.

Unit 7 - Speaking About Today's Activities --Stages of an Action Expressed in Different Present Tense Forms.

Unit 8 - Speaking About Yesterday's and Tomorrow's Actions or states --Use of Past and Future Tense Forms.

Unit 9 - Auxiliaries and Their Common Uses in Speech Making.

Unit 10 - Meaning Modification -- Correct Use of Adverbs, Adverbials and Adverb Clauses.

Unit 11 - Reporting Statements -- Direct - Indirect Statements and Questions -Quoting Others.

Unit 12 - Making Suggestions, Polite Enquiries Granting Requests, Accepting and Rejecting Suggestions. Making Alternate Suggestions

Unit 13 - Speech Markers --Use of Link Words and Conjunctions
Unit 14 - Expressing Opinions, Necessity, Obligation, Intentions, Permission, Prohibition etc.
Unit 15 -Making Comparison --Contrast --Degrees of comparison --Intensifiers - Adjectives -Articles.
Unit 16-Rules about the Use of Prepositions.
Unit 17 -Stylish Ways of Speaking --Special Vocabulary --Idioms -Proverbs -Unit 18 -Tips for Public Speaking -- Debates --Group Discussions.
Unit 19 - Tips for Formal Interviews.
Unit 20 - Tips for Formal Writing -- Drafting Letters, Applications, Resume.
The whole programme is activity based. Maximum speaking time is given to the participants. Grammar tips are given after each speaking session and specially designed situations and activities.

Presentations

Exercises

Paper IV – project/training 8 credits

DIPLOMA COURSE

Paper I – Programming with visual basic 4 credits

Unit I - Introduction, VB developing environment, exploring the menu bar, using the tool box, elements of VB syntax, using literals, declaring and using constants, data types. declaring and using variables, using the operators, subroutine and functions, looping and decision control structure, If/then/Else structure, select structure, For/next structure, Do loop structure, while/wend structure. 24 hrs

Unit II - Using intrinsic controls, pointer, label, frame, check box, combo box, scroll bar, timer, dir list box, shape, image, OLE, picture box, Text box, command button, option button, list box, adding check box controls, adding combo box, standard MDI form features, building the MDI form, using menus, building a wizard. 16 hrs

Unit III - Database programming, data view window, query designer, data report designer, creating a data environment, adding queries to data environment, ADO-DAO connecting to the data base, adding records, editing records, closing the database connection. 20 hrs

Paper II – Operating system 4 credits

Unit-I

Fundamentals of OS-monitors, buffering, spooling, multi programming, operating system services 10 hrs

Unit-II Processes- States, management, scheduling, context switching, concurrent processes, CPU scheduling, algorithms 15 hrs

Unit-III Dead locks-characterization, prevention, detection, recovery 8 hrs

Unit-IV Memory management- partitioning, swapping, paging, segmentation, virtual memory, direct memory access 12 hrs

Unit-V File system- file concept, access methods, directory system, file protection methods 15 hrs

References:

1. Systems Programming and Operating Systems, D.M. Damdhare, Second Revised

Edition, Tata MC Graw Hill

2. Operating System Principles, Seventh Edition, Abraham Silberschatz, Peter Galvin and Gagne, John Wiley.

3. Windows 98, Users Guide and Reference.

Paper III - Internet and web page designing

Unit I

Introduction to networks-types of networks-advantages, LAN, WAN, MAN 10 hrs

Unit II

Internet-services-addressing scheme, Machine addressing, mail address, resource addressing, TCP/IP, URL, MODEM 15 hrs

Unit III

Internet connectivity-setting up a connection-ISP-visiting a web site-e-mail attachments 10 hrs

Unit IV

Types of web sites-need for web sites, web pages, search engines scope of web designing, a good web site 10 hrs

Unit V

Introduction to HTML-Creating an HTML document-displaying and re using of HTML document, creating a sample web page 12 hrs

Unit VI -Recent trends and techniques in IT 3 hrs

Practicals:

Web page creation E-mail address creation Resource gathering

1. The Internet, Complete Reference, Harley Hahn, Tata McGraw Hill

2. HTML Complete Reference, Wiley Publications.

3. A Text Book on Computer Awareness and Applications, Gireesh Kumar, Prakash Publications.

Paper IV – Project and training - 8 credits

ADVANCED DIPLOMA COURSE

Paper I – Microprocessor 8085

Unit-I 8085 microprocessor-pin diagram, function, architecture, data address register, stack, pointer 10 hrs

Unit-II Interfacing- Introduction, interfacing with ROM and RAM, Interfacing with input and output- I/O ports, synchronizing I/O data transfer using interrupts, address decoding 15 hrs

Unit-III

Programming- Machine and assemble language, instruction set, arithmetic operations, logical operations, data transfer, Branch operation, sub routine calls return operations, programming, branching, and looping 12 hrs

Unit-IV Programming techniques-straight line programs, looping programs, mathematical programs 8 hrs

Unit-V

Applications- traffic control, temperature control, digital clock, washing machine control

15 hrs

Practical:

Microprocessor programming using 8085 microprocessor kit. R.S. Goankar, Microprocessor Architecture, Programming and Applications with 8085, Wiley Eastern Edition.

Paper II – Computer hardware fundamentals I - 4 credits

Unit-I System concepts, H/W, S/W, H/W components of a system 8 hrs

Unit-II Types of memory, RAM, ROM, Speed of memory, Cache memory, BIOS, CMOS 12hrs

Unit-III Mother board functions, Components of a mother board. 15 hrs

Unit-IV Storage devices, floppy, hard disk, CD ROM, DVD ROM. 10 hr

Unit-V Hard disk components, Disk formatting, disc partitioning, hard disk components, hard disk installations etc. 15 hrs

Reference:

PC Hardware, BPB Publications.

Paper III – Computer hardware fundamentals – II - 4 credits

Unit-I System Configurations, System Installations

Unit-II Installing peripherals.

Unit-III Trouble shooting.

Unit-IV Control organization, design of hardware control, and design of processor unit

Unit-V CRT Display, LCD, TFT, Printers, Scanners. Reference:

PC Hardware, BPB Publications.

Paper IV-On the Job Training and Project Report - 8 credits

4. Computer Hardware Maintenance & Networking

First year (Certificate course)

Paper 1 Fundamentals of Electrical and Electronics

1. Electric Theory

Ohms law, Kirchoff's Laws-current law and voltage law

2. Resistors

General information: Symbol, colour code, Types, Variable resistors and measurement of resistance using multimeter

3. Inductors

General information: Symbol, Types, Chokes Inductance measurement

4. Transformers

General information: Principle, Types, and Design of main transformer

5. Capacitors

General information: Symbols, Colour codes, Types - Fixed and variable capacitors, measurement of capacitance

6. Basic Electronics

Diodes, Transistors, FET, UJT, MOSFET, IC, Bread Board

7. Measuring Devices

Thermometer, Barometer, Multimeter, LCR meter, Voltmeter, Ammeter, Galvanometer, Signal

generator, CRO

Practicals

Identification of terminals of active and passive components

Testing of components

Soldering Practice

Paper II House wiring and Installation of equipments

1. Electrical Components- Switches, Cables and Electrical fittings Bulbs, Tubes, Plugstesting

of connection. Single phase and three-phase wiring, Different types of loads, Earthing Method

2. Power consumption General information, Methods to reduce power consumption – Bulbs and Tubes

Practicals

1. House hold single-phase wiring

2. Illumination Techniques-Domestic Applications

Paper III Assembling & Maintenance of Household Electrical Equipments

Assembling and Servicing

Power supply Adapters, Battery Chargers, Regulated Power Supply, Electronic Choke-Tube fittings

Household equipment Maintenance- Iron Box, heater, mixer, grinder and fan

Practicals

1. Computers-Familiarization of input and output devices and connections

2. Maintenance of Iron Box, heater, mixer, grinder and fan

On The Job Training

Second year (Diploma Course)

Paper I Power supply and Stabilizers

1 Power supply- Rectifiers, filters, and regulators-different types

SMPS

Uninterrupted power supply (UPS)- different types, Charger- Battery,

2. Various Types of Stabilizers, UPS and its working

Practicals

1. Assembling and servicing of different types of power supplies

Paper II Illumination and Inverters

1. Different Types of Lamps –Filament Lamp, Fluorescent Lamp, Sodium Lamp, Mercury Lamp, UV and IR Lamps, Halogen Lamps , CFL Lamps-Their domestic and industrial applications. Basic Principle and working of lux meters. Modern Methods of lighting- Stages, rooms and auditorium. Light Sensors.

2. Various Types of Inverters- working.

Practical

Maintenance - Inverters

Paper III Computer Hardware and Maintenance.

1. History of Computers-Architecture of Computers-Characteristics-Speed, Storage, Accuracy and Versatility.

2. Hardware-Peripheral Devices-Input Devices- –Output Devices- Audio Out Put Devices- Storage Devices-Primary storages-RAM, SRAM, DRAM, ROMs-Secondary Storage Devices-Magnetic Tapes, Magnetic Disks, Floppy Disks, Hard Disks, Optical Disks, CDs and DVDs-Bubble Memory, Memory Button, Memory Cards, Smart Cards.

Practical.

1. Computer Assembling

2. Software Installations.

On The Job Training

Third Year (Advanced Diploma Course)

Paper I Embedded Systems

Microprocessors and microcontrollers

PC- Architecture- different versions, Modules, Instruction set.

Practicals

Simulation

Paper II Protection circuits

Different types of protections- over voltage, under voltage, over load, short circuit, Relays, Indicators

Practicals

Assembling different types of protection circuits

Paper III Television Engineering

TV receiver- different blocks, power supply lcs used in TV receivers

Operation Principles of picture tube

Antennas, Boosters

Practicals

Servicing of Television

On The Job Training

Comments & Requests to Joeson Sir

1. The same budget could be placed for all the other computer courses