

Maharashtra State Board of Vocational Examination, Mumbai 400 051

1	Name of Course	Diploma Course in Computer Information Technology									
2	Course code	101408									
3	Max no. of Students	25 Students									
4	Duration	2 year									
5	Course Type	Full Time									
6	No. of Days per week	6 days									
7	No. of hours per day	7 Hrs									
8	Space require	Theory Class Room – 200 sqft Three Practical Lab – 500 sqft each									
9	Entry qualification	S.S.C. Pass									
10	Objective of syllabus	To get Knowledge of Computer fundamentals, To Understanding the Computer operation skills, To understand the programming skills, To train to handle the Documents, Worksheets, Presentation packages. To understand the internet skills.									
11	Employment opportunities	To work as a Computer Operator in the offices/Schools, To work as a tutor for computer basics.									
12	Teachers Qualification	1) For Vocational Subject : B.E.Computer Science/B.E. Computer Engg./ B.E. Computer Technology 2) For Non Vocational Subject : Master Degree in Concern Subject.									
13	Teaching Scheme –										
	Sr.	Subject	Subject Code	Clock Hours / Week					Total		
				Theory	Practical						
	1	English (Communication Skill)	90000001	2 Hrs	1 Hrs				3 Hrs		
	2	Elective – I	--	2 Hrs	1 Hrs				3 Hrs		
	3	Elective – II	--	2 Hrs	1 Hrs				3 Hrs		
	4	Computer Fundamentals & Applications	10140001	3 Hrs	8 Hrs				11 Hrs		
	5	Computer Programming Elements	10140002	3 Hrs	8 Hrs				11 Hrs		
	6	Micro Soft Office	10140014	3 Hrs	8 Hrs				11 Hrs		
	Total								42 Hrs		
14	Internship	Two Month Summer Internship from 1 st May to 30 th June is Compulsory.									
15	Examination Scheme – Final Examination will be based on syllabus of both years.										
	Paper	Subject	Subject Code	Theory			Practical			Total	
				Duration	Max	Min	Duration	Max	Min	Max	Min
	1	English (Communication Skill)	90000001	3 Hrs	70	25	3 Hrs	30	15	100	40
	2	Elective – I	--	3 Hrs	70	25	3 Hrs	30	15	100	40
	3	Elective – II	--	3 Hrs	70	25	3 Hrs	30	15	100	40
	4	Computer Fundamentals & Applications	10140001	3 Hrs	100	35	3 Hrs	100	50	200	85
	5	Computer Programming Elements	10140002	3 Hrs	100	35	3 Hrs	100	50	200	85
	6	Micro Soft Office	10140014	3 Hrs	100	35	3 Hrs	100	50	200	85
	Total								900 375		
16	Teachers – Three Teachers per batch for vocational component. For English, Elective-I & II guest faculty on clock hour basis.										
17	a) For Elective I – Student can choose any one subject Code Subject Name 90000011 Applied Mathematics 90000012 Business Economics 90000013 Physical Biology (Botany & Zoology) 90000014 Entrepreneurship 90000015 Psychology						b) For Elective II – Student can choose any one subject Code Subject Name 90000021 Applied Sciences (Physics & Chemistry) 90000022 Computer Application 90000023 Business Mathematics				

Subject No. : 10140001

Computer Fundamentals & Applications– 1st year

Theory	Practical
Detailed Syllabus : 1.0. Introduction 1.1. Basic idea about Computer 1.2. Applications of Computer 1.3. History of Computer generation 1.4. Different phases of computer invention (Analytical Engine to Analog Computer and Digital Computer) 1.5. Computer types and their applications 1.6. Comparative table of capabilities as per the type	Detailed Syllabus 1.0. Computer basics 1. Identification of Keyboard, Printer, Monitor Scanner, Webcam, Microphone, Speaker
2.0. Computer Architecture & Organization 2.1. Concept of Computer as a System 2.2. The structural block diagram of a computer 2.3. Different blocks of a Computer and their functions 2.4. Different input devices and their uses & limitations 2.5. Different output devices giving their uses & limitations 2.6. Memory: definition, types. 2.7. Primary memory and its classification with applications 2.8. Secondary memory devices 2.9. Classification giving specifications of different secondary storage media	2.0. Practice 1. Sample collection of various type of storage devices, specifications and charts
3.0. Data representation & organization 3.1. Data/ information, file, directory 3.2. Binary number system 3.3. Conversion of binary numbers to decimal numbers 3.4. Conversion of decimal numbers to binary numbers 3.5. Binary arithmetic (Binary addition, subtraction) 3.6. Introduction to different number system (Octal and Hexadecimal) 3.7. Data representation using Binary codes, ASCII codes 3.8. Bit, Byte.....	1. Conversion of binary to decimal 2. Conversion of binary to hexadecimal 3. Conversion of binary to octal

Computer fundamentals & Applications– 2nd year

Theory	Practical
Detailed Syllabus : 1.0. Introduction to Softwares 1.1. Basic idea about Softwares 1.2. Types/ Classification of Softwares 1.3. Functions of System Softwares 1.4. Use of Application Softwares 1.5. Applications of Programming Softwares	Detailed Syllabus 1.Study of application software 2.Study of System software
4.0. Computer Hardware & Software 4.1. Definition of Hardware & Software 4.2. Functions of hardware devices 4.3. Types Softwares and their applications 4.4. Introduction to Operating system 4.5. Study of MS DOS environment and DOS commands 4.6. Study of MS Windows environment & Windows default icons 4.7. Windows explorer 4.8. Creating files & folders in Windows O.S. 4.9. Introduction to Unix	1. Study of various dos command 2. Study of various type of printers 3. Study of dos, windows, windows xp. 4. Creation of directory, folders, files
2.0. Windows Accessories 2.1. Study of different features of Windows Accessories 2.2. Note Pad 2.3. Paint Brush 2.4. Word Pad	2.0. Practice 2.1 Create any document in notepad 2.2 Draw different shapes in paint
3.0. Software Installation 3.1. Installation procedure of different Softwares 3.2. Installation of Antivirus Softwares 3.3. Installation of Windows Operating System	1.Installation of antivirus 2.Installation of Windows xp
4.0. Installation of Hardware devices 4.1. Installation of Drivers 4.2. Installation of Printer 4.3. Installation of NIC 4.4. Installation of Modem 4.5. Running Setup programs	4.0. 1.Installation of printer 2. Installation of NIC card 3. Installation of Modem

Reference Books:

1. Computer fundamentals by P K Sinha
2. PC Software For Windows 98 Made Simple by Taxali
3. MS DOS Operating system user manual
4. Windows Operating system user manual

Subject No. : 10140002

Computer Programming Elements – 1st year

Theory	Practical
1.0. Computer Languages 1.1. General Introduction 1.2. Computer Languages 1.2.1. Definition of a Program 1.2.1. Data, Instruction/command 1.2.2. Source codes, Object codes 1.2.3. Machine code languages 1.2.4. Assembly code languages 1.2.5. High level languages 1.3. Interpreter, Compiler	1.0. Study of different interpreter 2.0. Classifying the interpreters and compilers
2.0. Basic Programming 2.1. Algorithm 2.2. Flow charts & Data flow diagrams 2.3. Different DFD symbols 2.4. Use & application of DFD 2.5. Constants, Variables & expressions 2.6. Operators: Arithmetic, Logical, Relational in general 2.7. Application of different operators with examples	1.0. Drawing flow charts for simple programs/problems 2.0. Simple DFDs for various problem solving 3.0. Expression building for different problems
3.0. Introduction to QBasic 3.1. Understand the concept of QBASIC programming 3.2. Getting started with QBASIC 3.3. Input Commands 3.4. Loop commands 3.5 .IF....ELSE...THEN 3.6. Planning a simple program 3.7. Different programs using logical and loop statement	1.0. At least 10 programs using I/O commands 2.0. At least 5 programs using each loop statements. 3.0. At least 5 programs using IF, IF ... Else... THEN statements.

Computer Programming Elements – 2nd year

Theory	Practical
1.0. Data structure 1.1. Data 1.2. Domain 1.3. Data Object 1.4. Data Representation	
2.0 Stack 2.1 push 2.2 pop 2.3 Reverse of string 2.4 LIFO method	Implement operations on stack. Reverse of string using stack.
3.0. Queue 3.1. FIFO method 3.2. Front 3.3. Rear 3.4. Doubly ended queue 3.5. Examples	Implement operations on queue. Insertion & display elements in queue. Deletion & display elements in queue
4.0 Linked list 4.1 single linked list 4.2 Circular linked list 4.3 Doubly linked list 4.4 First ptr, Next ptr, Prev ptr	Display single linked list. Find out middle elements in list. Find out last elements in list.
5.0 Searching 5.1 Linear search 5.2 Binary search	Searching the elements using linear search. Searching the elements using binary search.
6.0 Sorting 6.1 Bubble sort 6.2 Insertion sort 6.3 Selection sort 6.4 Merge sort 6.5 Radix sort 6.6. Quick sort	Sort the elements using bubble sort. Sort the elements using Radix sort. Sort the elements using Insertion sort. Sort the elements using Selection sort. Sort the elements using Merge sort. Sort the elements using Quick sort.

Text Book:

1. K.R Venugopal 'Mastering C++', Tata Mcgrawhill 1997

References:

1. B.Stroustrup 'C++ Programming Language' (3rd Edition). Addison Wesley, 1997
2. B.chandra Narosa 'A Treatise On Object Oriented programming using C++'- Publications, 1998
3. Herbert Schildt, "The Complete Reference C++", Tata McGraw-Hill, 2001.

Subject Code : 10140014**MS Office – 1st year**

Theory	Practical
1.0. Microsoft Word 1.1. Introduction to MS Office 1.2. MS Word applications 1.3 Creation of Document and file operations 1.4. Formatting features of document 1.5. Modification/ editing documents 1.6. Inserting images, files, tables, symbols and various attributes 1.7. Creating and formatting of tables 1.8. Mail merge 1.9. Page layout and design features 1.10. Spell & grammar check in documents 1.10. Print preview & printing of documents 1.11. Converting documents to PDF files.	1.0. Documentation 1.1. Create and save a document 1.2. Format the text with different font size, font styles 1.3. Setting up different page sizes, orientation. 1.4. Making various type of documents like Bio Data, letters, project reports 1.5. Printing of documents
2.0. Microsoft Excel 2.1. Introduction to Excel and its applications 2.2. Features of MS Excel 2.3. Outline of Worksheet & Workbook 2.4. Data types 2.5. Study of various menus of MS Excel 2.6. Creation of worksheet, editing worksheets, save, copy & deleting worksheets. 2.7. Functions of MS Excel 2.8. Formulas of MS Excel. 2.9. Types of charts, creation of data Charts, editing and insertion of charts. 2.10. Sort facility 2.11. Interconnecting Charts 2.12. Page setup, printing worksheets, charts... etc. 2.13. Converting Worksheets to PDF files.	2.0. Practice of Worksheets 2.1. Create and save worksheets 2.2. Editing the worksheets 2.3. Formatting worksheets 2.4. Insert charts 2.5. Making worksheets using formulas & functions 2.6. Making worksheets & printing with different formatting effects 2.7. Making worksheets with images, numbers and print them
3.0. MS Power point 3.1. General Introduction 3.2. Features & Applications of MS Power point 3.3. Creating Presentations 3.4. Study of different layouts and making presentations using different layouts 3.5. Using different animation effects. 3.6. Add Audio/Voice and visual effects to slides. 3.7. Filtration 3.8. Converting presentations to PDF files. 3.9. Inserting images, symbols to slides	3.0. Power Point practice 3.1. Create Slides of different types 3.2. Running presentations 3.3. Add slide transition effects and run slide show 3.4. Make presentations with audio/visual effects. 3.5. Printing PPT files 3.6. Making PDF format of PPT files

MS Office – 2nd year

Theory	Practical
Detailed Syllabus : 1.0. Introduction MS Access 1.1. Objects of learning MS Access 1.2. Applications of MS Access 1.3. Database and Database Management System 1.4. Elements of Database Management System 1.5. Types of Data Bases & the merits & demerits	1.0. Study of overview of MS Access 1.1. Accessing MS Access and its menus to get familiar with it
2.0. Controlling Data Entry 2.1. Restrict Data Entry using field properties 2.2. Establish a pattern for entering field values 2.3. Create a list of values for a field	2.0. Creating Data Tables, Designing Fields and setting field properties
3.0. Joining Tables and creating Queries 3.1. Create Query joins 3.2. Join unrelated tables 3.3. Relate data within a table 3.4. Set Select Query properties 3.5. Create Parameter Queries 3.6. Create Action Queries	3.0. Creating Queries
4.0. Forms & Reports 4.1. Design a Form Layout 4.2. Enhance the appearance of a Form 4.3. Restrict Data entry in forms 4.4. Adding a command button to a Form 4.5. Create a Subform 4.6. Organize report information 4.7. Format the report 4.8. Set Report Control properties 4.9. Control Report pagination 4.10. Summarize Report information 4.11. Add a sub report to an existing report 4.12. Create a mailing label report	4.0. Practicing Forms and Reports 4.1. Creating different forms using different layouts 4.2. Data entry in to the forms 4.3. Creating different Reports using different layouts 4.4. Data formatting in to reports
5.0. Sharing data across applications 5.1. Import data in to Access 5.2. Export data from Access 5.3. Analyze Access data in Excel 5.4. Export Access data to a Text file 5.5. Merge Access data with a Word document	5.0. Practice: 5.1. Import Excel sheets in to Access 5.2. Import Tables in to Access 5.3. Export Access tables in to Excel format 5.4 Export Access data to a Text file 5.5. Merging data

6.0. Study of Application packages 6.1. Introduction to application oriented software packages 6.2. Study of Railway reservation Package 6.3. Study of different modules and menus available in online Railway Reservation Package 6.4. Study of Banking packages 6.5. Study of Library Management packages 6.6. Study of Inventory control packages 6.7. Study of School Management Packages	6.0. Practice 6.1. Collection of different trial packages 6.2. Visiting Organizations to collect different formats and procedures used in the system 6.3. Creating forms and Reports for the different packages using appropriate data bases
7.0. Project work 7.1. Understand the concept of making projects and preparing the project reports. 7.2. Visiting different organizations to have an idea of different packages 7.3. Preparation of a project using the software skills learned during the course.	7.0. Project Work 7.1. Making a working model/project using MS Access 7.2. Project Report

List of Equipments required for a batch of 25 students:

1. 15 Computers with the latest technology having at least core2duo processor minimum.
2. Out of 15 Pcs one PC exclusively as a server with higher configuration
3. LAN with centralized network connected with hub
4. Internet connectivity with unlimited access
5. Scanner, Printer Dotmatrix (132 col.), Deskjet/Inkjet printer one each
6. 15 Computer tables with electrical and internet connectivity
7. One data projector for the presentations with sound system
8. Speaker sets at least 5sets
9. Web cams at least 5
