

# Maharashtra State Board of Vocational Examination, Mumbai 400 051

1	Name of Course	Diploma Course in Computer Animation									
2	Course code	101418									
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 learn the Computer operation skills, To learn DTP and its applications, Learn Computer Graphics & animation and its applications									
11	Employment opportunities	To work as a Computer Operator is the offices/Schools, To work as a tutor for computer basics, To start DTP shop, To start Graphics and Printing office, To work for an Animation companies.									
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	DTP & Print Technology	10140004	3 Hrs	8 Hrs				11 Hrs		
	6	Computer Animation	10140015	3 Hrs	8 Hrs				11 Hrs		
	Total									42 Hrs	
14	Internship	Two Month Summer Internship from 1 <sup>st</sup> May to 30 <sup>th</sup> 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 (Commu- nication 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	DTP & Print Technology	10140004	3 Hrs	100	35	3 Hrs	100	50	200	85
	6	Computer Animation	10140015	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 Code : 10140001**

**Computer Fundamentals & Applications – 1<sup>st</sup> year**

Theory	Practical
<b>Detailed Syllabus :</b> <b>1.0. Introduction</b> 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
<b>2.0. Computer Architecture &amp; Organization</b> 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
<b>3.0. Data representation &amp; organization</b> 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– 2<sup>nd</sup> year

Theory	Practical
<b>Detailed Syllabus :</b> <b>1.0. Introduction to Softwares</b> 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	<b>Detailed Syllabus</b> <b>1.Study of application software</b> <b>2.Study of System software</b>
<b>4.0. Computer Hardware &amp; Software</b> 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	<b>1. Study of various dos command</b> <b>2. Study of various type of printers</b> <b>3. Study of dos, windows, windows xp.</b> <b>4. Creation of directory, folders, files</b>
<b>2.0. Windows Accessories</b> 2.1. Study of different features of Windows Accessories 2.2. Note Pad 2.3. Paint Brush 2.4. Word Pad	<b>2.0. Practice</b> <b>2.1 Create any document in notepad</b> <b>2.2 Draw different shapes in paint</b>
<b>3.0. Software Installation</b> 3.1. Installation procedure of different Softwares 3.2. Installation of Antivirus Softwares 3.3. Installation of Windows Operating System	<b>1.Installation of antivirus</b> <b>2.Installation of Windows xp</b>
<b>4.0. Installation of Hardware devices</b> 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	<b>4.0.</b> <b>1.Installation of printer</b> <b>2. Installation of NIC card</b> <b>3. Installation of Modem</b>

### 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 Code – 10140004

### Desk Top Publishing & Print Technology – 1<sup>st</sup> year

Theory	Practical
<b>1.0. Introduction</b> 1.1. Introduction to Desk Top Publishing 1.2. History of Publishing, Traditional & Computerized Publishing methods 1.3. Aims and objectives of DTP 1.4. Study of different printing presses (Explanation of principle of letter press, offset and Gravure) 1.5. Study of Library Management packages 1.6. Study of Inventory control packages 1.7. Study of School Management Packages	<b>1.0. Practice</b> 1.1. DTP software for publishing industry – study the application of page maker, Photoshop, Illustrator, instant artist, coral draw, quark press and In design
<b>2.0. PageMaker</b> 2.1. Software for Graphic Arts – Introduction 2.2. PageMaker - Basics of PageMaker & quark press Job suitability overview of tools in PageMaker 2.3. Setting up of Printer and page setting – paragraphs, bullets, columns, and drop letters. 2.4. Creating style sheets, Importing of text and graphics 2.5. Master pages and multiple master pages 2.6. Layers 2.7. Plug in operations – imposition of pages	<b>2.0. PageMaker</b> Preparation of any design using PageMaker (at least 5 designs)
<b>3.0. PHOTO SHOP</b> 3.1. Photoshop – Basics 3.2. Overview of Tools 3.3. Application of different tools	<b>3.0. Photoshop</b> Preparation of any design using Photoshop (at least 5 designs)
<b>4.0. Corel Draw</b> 4.1. Illustrator and Corel Draw 4.2. Creating various images 4.3. Creating monograms 4.4. Handling files (Save, copy, edit.....)	<b>4.0. Corel Draw</b> Preparation of any design with graphics using Corel draw

#### 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 Dot-matrix (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

## Desk Top Publishing & Print Technology – 2<sup>nd</sup> year

Theory	Practical
<b>1.0. FRONT PAGE</b> 1.1. Introduction to Front Page 1.2. Uses & users of Front Page 1.3. Front Page features 1.4. Creating a Web Page using Front Page 1.5. Supporting HTML document format 1.6. Integrating MS Word documents 1.7. Supporting multilingual programs	
<b>2.0. Front Page Programming</b> 2.1. Working with Front Page 2.2. Creating a Web site 2.3. Viewing a Web site structure 2.4. Building a Web Page 2.4.1. Developing a Web Page structure 2.4.2. Adding a content 2.4.3. Choosing a view in Front Page editor 2.4.4. Changing object properties	
<b>3.0. Editing Web pages</b> 3.1. Applying a theme 3.2. Using styles 3.3. Importing content 3.4. Organizing Navigation	
<b>4.0. Tables &amp; Frames</b> 4.1. Creating a Table 4.2. Using Frames 4.3. Creating Web pages using forms 4.4. Using components	
<b>5.0. PHOTO Draw</b> 5.1. Introduction to PhotoDraw software 5.2. Purpose & features 5.3. Working with PhotoDraw 5.3.1. Using PhotoDraw tools 5.3.2. Exploring the PhotoDraw workspace 5.3.3. Creating Pictures using Drawing & painting 5.3.4. Creating Pictures using Templates 5.3.5. Creating Pictures using clipart gallery	
<b>6.0. Editing in PhotoDraw</b> 6.1. Editing pictures 6.2. Modifying Digital images 6.3. Adding text, text objects and text effects 6.4. Modifying lines, outlines, fills and color effects 6.5. Creating pictures for webpages	

**Subject Code : 10140015**

**Computer Animation – 1<sup>st</sup> Year**

<b>Theory</b>	<b>Practical</b>
<b>1.0. Introduction</b> 1.1. Introduction to Animation 1.2. History of Computer animation and its features 1.3. Applications of Computer Animation 1.4. Structure of C Program 1.5. Library functions	
<b>2.0. Animation</b> 2.1. Types of Animation 2.2. Hand Drawn 2.3. Stop motion 2.4. Animatronics 2.5. Performance animation: Puppetry, Motion Capture 2.6. Character Animation 2.7. Effects Animation: Particle, Dynamic simulation 2.8. Visual effects animation	
<b>3.0. Principles of Animation</b> <b>3.1. Mechanics:</b> 3.1.1. Timing, Spacing, Hard and soft accents 3.1.2. Slow in, Slow out 3.2. Moving holds 3.3. Squash and Stretch 3.1.5. Straight ahead and pose to pose action 3.1.6. Ones or Twos	
<b>4.0. Acting</b> 4.1. Exaggeration 4.2. Anticipation and follow through 4.3. Overlap and secondary action	
<b>5.0. Drawing</b> 5.1. Design unity 5.2. Solid drawing 5.3. Appeal/ un-appeal 5.4. Line of action	

## Computer Animation – 2nd Year

Theory	Practical
<b>1.0. Animation 2D</b> 1.1. Introduction to Flash 1.2. Workspace overview 1.3. Customize the workshop 1.4. About the stage and Tools panel 1.5. About the Timeline 1.6. Using Flash panels	At least 5 experiments over the workspace and customization
<b>2.0. Flash Documents</b> 2.1. About Flash files 2.2. Create/open a Flash document and set its properties 2.3. View a document 2.4. Working with project 2.5. importing art work in to Flash 2.6. Adding media to the library 2.7. Working with scenes 2.8. Find and Replace commands 2.9. About Templates	At least 10 experiments Using Create, Open, View documents, Working with project, Importing, Adding media, Scenes, Find, Replace and Templates.
<b>3.0. Drawing/ Graphics</b> 3.1. About vector & bitmap graphics 3.2. Flash drawing mode, Overlapping shapes 3.3. Flash drawing tools 3.4. Reshaping & Snapping 3.5. Selection objects 3.6. Moving, Copying and deleting objects 3.7. Arranging objects (Stack, Align, Group, Break apart and object) 3.8. Transforming object 3.9. Using Symbols, instances and Library assets	At least 10 experiments Using different drawing tools
<b>4.0. Creating Animation</b> 4.1. Creating Motion, creating key frames 4.2. Representation of Animation in the Timeline 4.3. Frame rates, frame by frame animation, Onion skinning, Extended still images, Mask layers 4.4. Using Time-line effects, Twinned animation, special effects, blend motion 4.5. Working with Text, Sound, Video	At least 5 experiments Creating Motion Creating Frames Skinning Text Sound Video
<b>5.0. Animation – 3D</b> 5.1. Introduction to 3D animation 5.2. Interface of 3D Max 5.3. Basics of 3D Max modeling 5.4. Exporting using the menus 5.5. Floating and docking 5.6. Customizing the interface 5.7. Drag and Drop 5.8. Different workspaces	At least 10 experiments Using different tools
<b>6.0. Other tools</b> 6.1. Geometry 6.2. Sub objects Extruding, welding, bridging etc. 6.3. Modifiers 6.4. User defined Hot keys	At least 10 experiments Using different tools