

1. Introduction

The objectives of Vocational Educational System in the context of fulfillment of national goal are to train the students for employment in the growing sectors of economy both organized and unorganized, to provide an alternative channel for higher education and to prepare students for self-reliance and gainful employment. There has been a great improvement in the demand for computer professionals during the past few years. To cater to certain graphical oriented requirements of the business sector the Computer graphics and Animation course syllabus has been drafted.

2. Objectives of the Course

To train the students to acquire skills in generating marketable computer graphics and animated pictures, specially in the area of advertisements, and to acquire skill in Telugu s/2 packages.

To train the students to acquire skills and mastery in the use of different softwares producing graphics and animation.

To impart the student real-life advertisement exposure in an organisation/PTC (Production cum Training centre) under OJT.

3. Job Opportunities

Media Production as Animators

Computer Aided course-ware development as Animation Assistants

Drawing/Film making

DTP Works

Photo editing assistants in studios

4. ANNUAL SCHEME OF INSTRUCTION AND EXAMINATION FOR VOCATIONAL COURSES 1ST & 2ND YEAR

Part - A	Theory		Practicals		Total	
	Periods	Marks	Periods	Marks	Periods	Marks
1. English	185	75	-	-	185	75
2. G.F.C.	185	75	-	-	185	75
Part - B						
3. Vocational Subjects						
Paper - I	160	50	160	50	320	100
Paper - II	160	50	160	50	320	100
Paper - III	160	50	160	50	320	100
Part - C						
4. On the Job Training -	-	-	210	50	210	50
Total	850	300	690	200	1540	500

Scheme of Instruction per week for Vocational Courses

Part - A	Theory	Practicals	Total
1. English	6	-	6
2. G.F.C.	6	-	6
Part - B			
3. Vocational subjects			
Paper - I	5	5	10
Paper - II	5	5	10
Paper - III	5	5	10

**V. BOARD OF INTERMEDIATE EDUCATION
ANDHRA PRADESH - HYDERABAD**

**THEORY PAPER-I
1st YEAR**

**SUBJECT : COMPUTER FUNDAMENTALS
& PROGRAMMING IN C**

1. Introduction to Computing (50 Periods, 15 Marks)

Introduction to Computers

Classification of computers based on size, purpose and operation

Anatomy of computers

Number systems used in computers

Input and output devices

Block diagram of CPU

Operating system software

Programming language

Utility Software

2. Introduction to problem solving (30 Periods, 10 Marks)

Algorithms

Flow Charts

Pseudo code

Coding

3. Programming in 'C' (80 Periods, 25 marks)

Structure of a C-program

Data types

Constants and Variables

Operators and expressions

Arrays, structures and Unions

Pre-defined (built-in) functions

Control Statements-Decision making (if,if...else, switch...case)

- Looping (for , while, do...while)

User defined functions and reursive functions

Working with files in C (Fopen, fclose, fprintf, fscanf, fread, fwrite)

Reference Books :

1. Let us C (Yashwanth Kanithkar)
2. Computers and Common sense (Roger thunt and PB Shelly)
3. Introduction to Computers (V. Raja Raman)

**BOARD OF INTERMEDIATE EDUCATION
ANDHRA PRADESH - HYDERABAD**

**PRACTICAL PAPER-I
1st YEAR**

SUBJECT : PROGRAMMING IN C

List of Experiments :

1. Programs on datatypes in 'C'
2. Programs on 1d and 2d arrays
3. Programs on decision making using if, if...else, switch
4. Programs on looping using for, while, do...while loops.
5. Programs on using functions.
6. Programs on structures
7. Programs on unions
8. Programs on searching
9. Programs on sorting
10. Programs on files

Paper 2 : P. C. Software Tools

Unit/Chapter	No of Periods
I	30
II	30
III	40
IV	30
V	30
VI	30
Total	160

1. Overview of Operating Systems

- * DOS
- * Working with DOS Commands
- * Configuring DOS and Batch files
- * Windows
- * Basics
- * Accessories
- * File Manager and Program Manager

2. MS-Word

- * Introduction to Word Processing
- * Editing a Document
- * Move and Copy Text and Help System
- * Formatting Text and Paragraph
- * Finding and Replacing Text and Spell Checking
- * Using Tabs
- * Enhancing Document
- * Columns, Tables and Other Features
- * Using Graphics, Templates and Wizards
- * Using Mail Merge
- * Miscellaneous features of Word

3. MS-Excel

- * Introduction to Spreadsheet
- * Creating Worksheets & feeding data

- * Using functions
- * Editing Cells and Using commands and functions
- * Moving and Copying, Inserting and Deleting Rows and Columns
- * Formatting a Worksheet
- * Opening, Saving and Printing a Worksheet
- * Working with Charts
- * Working with Macros

4. MS-PowerPoint

- * Creating Presentations using AutoContent Wizard, Template & Blank Presentation
- * Working with Master's Slide, Title handout and Notes
- * Viewing a Presentation
- * Drawing Objects & Inserting OLE
- * Drawing freeform shapes
- * Rotating Objects

5. MS-Access

- * Creating Database
- * Creating Tables, Forms and Queries

Reference Books:

1. PC Software for Windows made simple by R K Taxali
— *Tata McGraw Hill*
2. Fundamentals of MS-Office
— *BPB Publication*

PRACTICALS :

Word, Excel, Powerpoint & Access

PRACTICAL PAPER-II

Ist YEAR

SUBJECT : MS-OFFICE

List of Experiments :

1. Introduction to Windows
2. Working with MS-Word and Telugu language package
3. Creating, editing and formatting a document
4. Working with using templates and wizards
5. Inserting tables and Mail Merge
6. Creating worksheets, data entry and editing
7. Working with Charts
8. Working with macros
9. Working with presentation, clip art and sounds
10. Creating database, Tables, and working with forms & queries

Paper 3 : Computer Hardware

1. **Hardware Fundamentals** — (20 Peiroids, 6 Marks)
Identifying components and their use
Measuring voltages at different levels
2. **Motherboards and their related components** — (35 Periods, 10 Marks)
Studying about different types of Motherboards
Studying about different ports like serial, parallel & standard
Different port settings
3. **BIOS and CMOS** — (35 Periods, 12 Marks)
Bootstrap loader program
BIOS features
Configuration of system through BIOS
4. **Operating Systems** — (35 Periods, 12 Marks)
Installing different Operating Systems like DOS & Windows
Touble shooting through software
5. **Anti-virus Softwares** — (35 Periods, 10 Marks)
Installation of Anti-virus Softwares
Recovery of system through Anti-virus patches

Reference Book :

Upgrading and repairing PC's – 8th Edition, QUE (PHI) – 1997
— *Scott Mueller*

Practicals :

Handling SMPS, BIOS, Operating System Installation,
Anti-virus Installation

Using Multi-meter to measure voltages.

PRACTICAL PAPER-III
Ist YEAR
SUBJECT : PC HARDWARE

List of Experiments :

1. Identifying external posts and interfacing
2. Identifying PC cards and interconnecting
3. Identifying posts on the cards and interfacing
4. Preventive maintenance of a PC
5. Understanding CMOs
6. Partitioning and formatting Harddisks
7. Installing System and application software
8. Understanding control panel settings
9. Working with anti-virus software
10. Working with backups and archival utilities

SYLLABUS
IInd YEAR
SUBJECT : GRAPHICS & ANIMATION

Paper 1 : Graphics and Animation (20 Periods, 6 Marks)

1. Introduction to graphics system

Hardware (AGP Card, VGA card, SVGA card, etc)

I/O devices (mouse, scanners, plotters, etc)

Software (Graphics Packages like Auto CAD)

Vector Graphics and bitmapped graphics

2. Graphics file formats (35 Periods, 10 Marks)

1D Graphics - Primitive shapes, Transformations and filters

3. Bitmapped Images (35 periods, 10 Marks)

Resolution

Compression

Manipulation

Geometric transformations

4. 3D Graphics

Representations

Viewing

Shading

5. Color (20 Periods, 8 Marks)

Color and science

Color models

Channels and color corrections

Consistent color

6. Animation (20 Periods, 8 Marks)

Captured animation and image sequences

Digital cell and sprite animation

Key frame animation

3D animation

Reference Book :

Tay Vaughan - Multimedia : Making it Work, Fourth Edition MC
Graw 1998

John Villamy & Louis molina, Multimedia an introduction. PHI-
1998.

Practicals :

Flash

3d Studio max and

Photoshop

IInd YEAR
PRACTICAL PAPER-I
SUBJECT : GRAPHICS & ANIMATION

List of Experiments :

1. Drawing regular and irregular shapes with 2D-primitives.
2. Transformations and filling of 2D images.
3. Working with color palette.
4. Working with layers.
5. Creation of images with special effects.
6. Working with layers in the time line.
7. Keyframe animation.
8. Using tween to animate.
9. Familiarization with 3D Max studio.
10. Create animated cartoon using 3D primitives.

THEORY IInd YEAR

PAPER - II

SUBJECT : MULTIMEDIA TECHNOLOGIES

1. Multimedia Fundamentals (Periods 30, Marks 10)

Meaning & importance of MM4

Application of Multimedia, Structure and Organisation

Multimedia Hardware

2. Multimedia Presentation Building Blocks

(Periods 50 Marks 15)

Text and Graphics

Media Player

Video Capturing, Sound Capturing and Editing

Video Compression

3. Interactive Multimedia Software Authoring Basics

(Periods 50, Marks 15)

Structure and Function of Authoring Basics

Fundamentals of Authoring Software

Multimedia Applications

4. Testing, Packing, Copyrighting and Distributing a Multimedia Application

(Periods 30, Marks 10)

Reference Books:

Multimedia-An Introduction by John Villamil and Louis Molina
Printed by Prentice Hall of India

Ramesh Bangia, Multimedia and Web Technology, Firewall Media-
2004

Practicals:

Practice on Audio and Video Capturing and Editing Softwares

IInd YEAR
PRACTICAL PAPER-II
SUBJECT : MULTIMEDIA TECHNOLOGY

List of Experiments (With respective editing Softwares)

1. Working with PDF files using Acrobat distiller.
2. Storing BOICE Data
3. Manipulating with windows sound recorder
4. Working with education multimedia
5. Copying Video Media into digital media
6. Storing Photoes using digital media
7. Fast-tracking the sound media
9. Computer based learning
10. Computer based teaching

THEORY IInd YEAR

PAPER III

SUBJECT : INTERNET TECHNOLOGIES

1. Introduction — (10 Periods, 5 Marks)

- 1.1. Introduction to Internet
- 1.2. Advantages of Internet

2. Internet Connectivity — (30 Periods, 10 Marks)

- 2.1. Learning about client/server system
- 2.2. Internet domains and addresses
- 2.3. Dialup internet connection and ISP

3. Internet Services — (30 Periods, 10 Marks)

- 3.1. www.browsing and searching
- 3.2. Fundamentals of electronic mail
- 3.3. Telnet, FTP
- 3.4. News rooms, Mailing lists and Chat rooms

4. HTML — (50 Periods, 15 Marks)

- 4.1. Basics of HTML
- 4.2. Web Graphics
- 4.3. Advanced HTML
(Frames, Forms, CGI Scripts, Dynamic Documents, HTML Tools,
Cascading Style Sheets)

5. Client and Server Side Scripting — (40 Periods, 10 Marks)

- 5.1. Java Script (JSP), JSP, Accessing database.

Reference Books :

- 1. Raymond Grenlaw, Ellen Hepp - Fundamentals of the internet and World Wide Web, TMH - 2000
- 2. HTML & Java Script for visual learners by Chris Chamber

IInd YEAR
PRACTICAL PAPER-III
SUBJECT : INTERNET TECHNOLOGIES

List of Experiments (With respective editing Softwares)

1. Expositive to internet connectivity
2. Working with Web browser and information rehieval
3. Working with e-mail clients (Sending/receiving/attachments)
4. Working with FTP
5. Working with basic THML tags and HTML forms
6. HTML - image maps
7. Working with style-sheets
8. Using Java script for client side data validation
9. Creation and hosting of personal home pages
10. Accessing data from data base using JDBC and JSP.

VI. LIST OF EQUIPMENT

HARDWARE AND SOFTWARE REQUIREMENT

I. Hardware requirement

1. Inter Pentium IV processor 2.8 GH2
2. 1 MB L2 Cache
3. 512 MB Ram
4. 80 GB Harddisk
5. DVD CD/RW combo
6. Sterio Speakers
7. 17" Color Monitor
8. Intel 865GB Chipset
9. Mouse
10. Micro Phone
11. Digital Camera cum Webcam

II. Software requirement

1. Windows XP
2. Office XP
3. Turbo C/C++
4. Flash
5. Macro Media director
6. Photoshop
7. Audio/Video Capturing and editing softwares.

VII.a) Collaborating institutions for curriculum transactions

DTP centres locally available

Data Conversion centres

TV production centres

Advertisement agencies

b) On Job Training Centres

AVRC, Osmania University

Color Chips

All TV channels including DD

Infotech enterprises

Newspapers/Magazines publications centres

Ramoji Film City

VIII. Qualification for Lecturers

M.Sc. (CS/IT/IS)

M.C.A.

B.E./B. Tech (CS/IT)

Any post graduate with higher diploma in Multimedia

B.Sc. (CS/IT) with PG Diploma in Computers

B.C.A. with any PG Diploma

IX. Vertical Mobility

Eligibility to attend A Level course recognised by DOEACC

To certain science degree courses on completion of Bridge course (Maths, Physics & Chemistry)

B.C.A. and other courses

Polytechnics

MODEL QUESTION PAPERS

COMPUTER

GRAPHICS

& ANIMATION

MODEL QUESTION PAPER-I
FIRST YEAR
SUBJECT : COMPUTER FUNDAMENTALS

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions 10 x 2 = 20
(ii) Each Question carries 2 marks

1. What is a personal computer?
2. What are the logical operations performed by ALU?
3. List any 2 popular Input & Output devices.
4. State any 2 difference between Software and Hardware
5. Find out the binary equivalent of $(45)_{10}$
6. Who invented "C" language and where?
7. What do you mean by recursive function?
8. What is the difference between "freade" and "fscanf" function in "C"?
9. List the logical operators in "C".
10. What is the difference between pre-defined function and user-defined function?

Section - B

Note : (i) Answer any 5 Questions 5 x 6 = 30
(ii) Each Question carries 6 marks

11. Draw the block diagram of a computer and explain its parts
12. Discuss about any two number systems used in computers
13. Write an algorithm and draw a flowchart for finding the simple interest
14. Explain about the structure of a "C" program with an example.
15. Write a program to print the members of the fibonacci sequence
16. Write a program to check whether a given string is a palindrome or not.
17. Write short notes on the following :
 - a) Key board
 - b) Switch ... case statement

MODEL QUESTION PAPER-II
FIRSTYEAR
SUBJECT : P.C.SOFTWARETOOLS

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions 10 x 2 = 20
(ii) Each Question carries 2 marks

1. Write briefly about the Control Panel.
2. What are the uses of short-cut keys?
3. Explain about the spell-check utility in Word.
4. What is the use of print-preview?
5. How many maximum rows and columns are there in Excel Worksheet?
6. What are macros?
7. What is the use of Auto-Content Wizard in Power Point?
9. What is a database?
10. What are queries?

Section - B

Note : (i) Answer any 5 Questions

5 x 6 = 30

(ii) Each Question carries 6 marks

11. Explain about GUI.
12. Explain about Mail-Merge utility in Word.
13. Explain about inserting a table in a document.
14. Write a procedure to sort a given column of values in Excel.
15. The following table displays the marks of 3 students in Maths, Physics & Chemistry scored in an EAMCET examination. Draw the below table in your answer sheet and write the formulas to calculate the values in the blank boxes.

	A	B	C	D	E	F
1	Names	Maths	Physics	Chemistry	Average	Best Average
2	Gandhi	60	45	57		
3.	Nehru	75	50	72		
4.	Tilak	68	49	55		

16. Discuss with an example what is the use of "Query" in Access.
17. What is the use of Auto-Content Wizard?

MODEL QUESTION PAPER-III
FIRSTYEAR
SUBJECT : COMPUTER HARDWARE

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions 10 x 2 = 20
(ii) Each Question carries 2 marks

1. Name the different components in a digital computer.
2. Expand SMPS.
3. Which type of Input is given to the SMPS?
4. What is CMOS?
5. Name the different types of ports in a computer.
6. What is USB?
7. Expand BIOS?
8. What is the difference between ROM and RAM?
9. What is cache memory?
10. What is a Boot sequence?

Section - B

Note : (i) Answer any 5 Questions 5 x 6 = 30
(ii) Each Question carries 6 marks

11. Discuss the use of SMPS.
12. Write the procedure to install Windows?
13. Write the procedure to create partitions in Hard disks.
14. What is a virus? How can it be removed from a computer?
15. What is data bus? Explain its use.
16. What is the procedure to set a password while the computer is booting?
17. What is a modem? What is its use?

MODEL QUESTION PAPER-I
IInd YEAR
SUBJECT : GRAPHICS & ANIMATION

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions 10 x 2 = 20
(ii) Each Question carries 2 marks

1. What is the difference between interlaced and non-interlaced Monitor?
2. What is panning?
3. What is a Meta File?
4. What is rendering?
5. What are the common resolution used for storing bitmap images?
6. What is a wireframe?
7. What is a color palette?
8. What is morphing?
9. What is lut animation?
10. What is meant by anti-aliasing?

Section - B

Note : (i) Answer any 5 Questions 5 x 6 = 30
(ii) Each Question carries 6 marks

11. List the differences between vector and bit mapped graphics?
12. What are the various spatial filtering operations on bit mapped images ?
13. Explain the steps in 3D drawing and rendering.
14. What are the various techniques used to increase the range of available colors on output device?
15. Outline the main similarities and differences between 2D and 3D animation.
16. What are the main differences between painting and drawing programs.
17. Explain the Key Frame animation?

MODEL QUESTION PAPER-II
IInd YEAR
SUBJECT : MULTIMEDIA TECHNOLOGIES

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions 10 x 2 = 20

(ii) Each Question carries 2 marks

1. What is interactive multimedia?
2. What is frame grabber?
3. What are the true type fonts?
4. Write the formula to determine the file size in bytes for stereo.
5. List two authoring softwares for game appliances.
6. List the basic multimedia applications navigational structures.
7. What are internet multimedia playback tools?
8. What is point size?
9. What is frame rate of PAL standard?
10. What is palette flasing?

Section - B

Note : (i) Answer any 5 Questions 5 x 6 = 30

(ii) Each Question carries 6 marks

11. What are different templates used in multimedia application development. Give their purpose.
12. Explain how would you use five editing tools in a graphic application such as adobe photoshop.
13. Explain the working of MIDI.
14. What are the basic functions of multimedia authoring tools?
15. Define the icons in the icon palette of authorware and explain how they can be used?
16. What are the advantages and disadvantages of distribution of multimedia through network.
17. Explain how do you integrate video into multimedia presentation?

MODEL QUESTION PAPER-III

IInd YEAR

SUBJECT : INTERNET TECHNOLOGIES AND WEB DESIGNING

Time : 3 Hours

Max. Marks : 50

Section - A

Note : (i) Answer all the Questions 10 x 2 = 20
(ii) Each Question carries 2 marks

1. What is internet?
2. What is DNS?
3. Name any two ISP's in our country.
4. What is book mark?
5. Name any two popular search engines
6. Name any two popular web graphics formats
7. What is the function of ALIGN attribute of input tag?
8. Name any two popular HTML editors.
9. How do you put style sheet top the HMTL documents?
10. How do you use eval function in Java script?

Section - B

Note : (i) Answer any 5 Questions 5 x 6 = 30
(ii) Each Question carries 6 marks

11. What are the different ways of connecting to the internet?
12. Explain the difference between attaching a file and inserting a file in relation to an e-mail message.
13. Generate a HTML table that describes your class time-table
14. How events are handled in Java Script
15. How do you access a database using JSP/JDBC?
16. How do you create image Maps
17. Write short notes on
 - a) Classes of Internet address
 - b) Clor handling by CSS

COURSE NAME : COMPUTER GRAPHICS & ANIMATION

EQUIVALENCYTABLE

(FOR 1st YEAR THEORY AND PRACTICALS)

New Pattern (Revised Curriculam) Theory

1. Computer Fundamentals & C Programming
2. PC Software Tools
3. Computer Hardware

(Practicals)

1. C-Programming
2. MS-Office
3. PC Hardward

Old Pattern (Restructed Curriculam)

	Therory	Equivalance from revised Curriculam
1.	Foundations of Computer Science (CD, DS,OS, Networks)	2
2.	Marketing and Advertisement	No equivalence for this paper
3.	Computer programming	1
4.	PC Software Tools (Ms-Office, Windows-95 etc)	2
	Practicals	
1.	Practical-1	3
2.	Practical-2	2
3.	Practical-3	3
4.	Practical-4	2

COURSE NAME : COMPUTER GRAPHICS & ANIMATION

EQUIVALENCYTABLE

(FOR IInd YEAR THEORY & PRACTICALS)

New Pattern (Revised Curriculum)

Theory

1. Graphics & Animations
2. Multimedia Technologies
3. Internet Technologies & Web designing

Practicals

1. Graphics & Animation (Practical Paper-I)
2. Multimedia Technolgies (Practical Paper-II)
3. Internet Technologies (Practical Paper-III)

Old Pattern (Restructured Curriculum)

Theory

Equivalancy from revised Curriculum

- | | | |
|----|--------------------------------------|---|
| 1. | Visualization & Animation | 1 |
| 2. | Internet Technologies | 3 |
| 3. | Multimedia Technology & applications | 2 |
| 4. | TV & Film Technology | |
| | (Peripheral devices & Interfaces | 2 |

Practicals

- | | | |
|----|-------------|---|
| 1. | Practical-1 | 1 |
| 2. | Practical-2 | 3 |
| 3. | Practical-3 | 2 |
| 4. | Practical-4 | 2 |

11. LIST OF PARTICIPANTS

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VOCATIONAL CURRICULUM-2005

(With effect from the Academic Year 2005-2006)

Curriculum of Intermediate Vocational Course
in
COMPUTER
GRAPHICS
& ANIMATION



**STATE INSTITUTE OF VOCATIONAL EDUCATION &
BOARD OF INTERMEDIATE EDUCATION A.P.
Nampally, Hyderabad**

FOREWORD

The National Policy on Education (1986) while proposing educational reorganization, placed high priority on the programme of vocationalisation of education. It emphasized that well planned, systematic and rigorously implemented vocational education will create a distinct stream to prepare students for identified occupations encompassing several areas of activity. The primary aim of vocational courses was to cut across several occupational fields and prepare students with employable skills in organized sectors and self employment. Vocationalisation through re-orientation of educational strategies focused on creating a talent pool of skilled youth who are trained in courses relevant to the market and emerging needs of the various sections of the economy.

Inspired by this vision of the National Policy, the Government of Andhra Pradesh introduced Vocational Education at +2 level with an aim to diversify a sizeable segment of students at the senior secondary stage to the world of work. The State Government aimed at reducing the pressures on higher education through empowering youth by harnessing their capabilities. The requirement of skilled manpower industry is being fulfilled by charting a student's career with right options based on aptitude and talent. An right alternative to medical and engineering courses is envisaged in vocationalisation of education in the State.

In view of the changing needs of the students and growing demand for a spectrum of skill competencies in the economy, the Board of Intermediate Education has reviewed the curriculum of Vocational Courses in order to re-orient them based on their viability and practicability. The revised curriculum for Vocational Courses at Intermediate Level will come into effect from the Academic Year 2005-06 1st Year and from Academic Year 2006-07 for 2nd Year students.

I am confident that the revised curriculum will attract more and more students into vocational stream and help them train in need-based, productive courses leading to gainful employment.



SHASHANK GOEL

Secretary, BIE

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