

**Course Name : Diploma in Electronics & Video Engineering**

**Course Code : EV**

**Semester : Sixth**

**Subject Title : Video Engineering**

**Subject Code : 9187**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER HRS	TH	TEST	PR	OR	TW	TOTAL
03	--	02	03	80	20	50#	--	25@	175

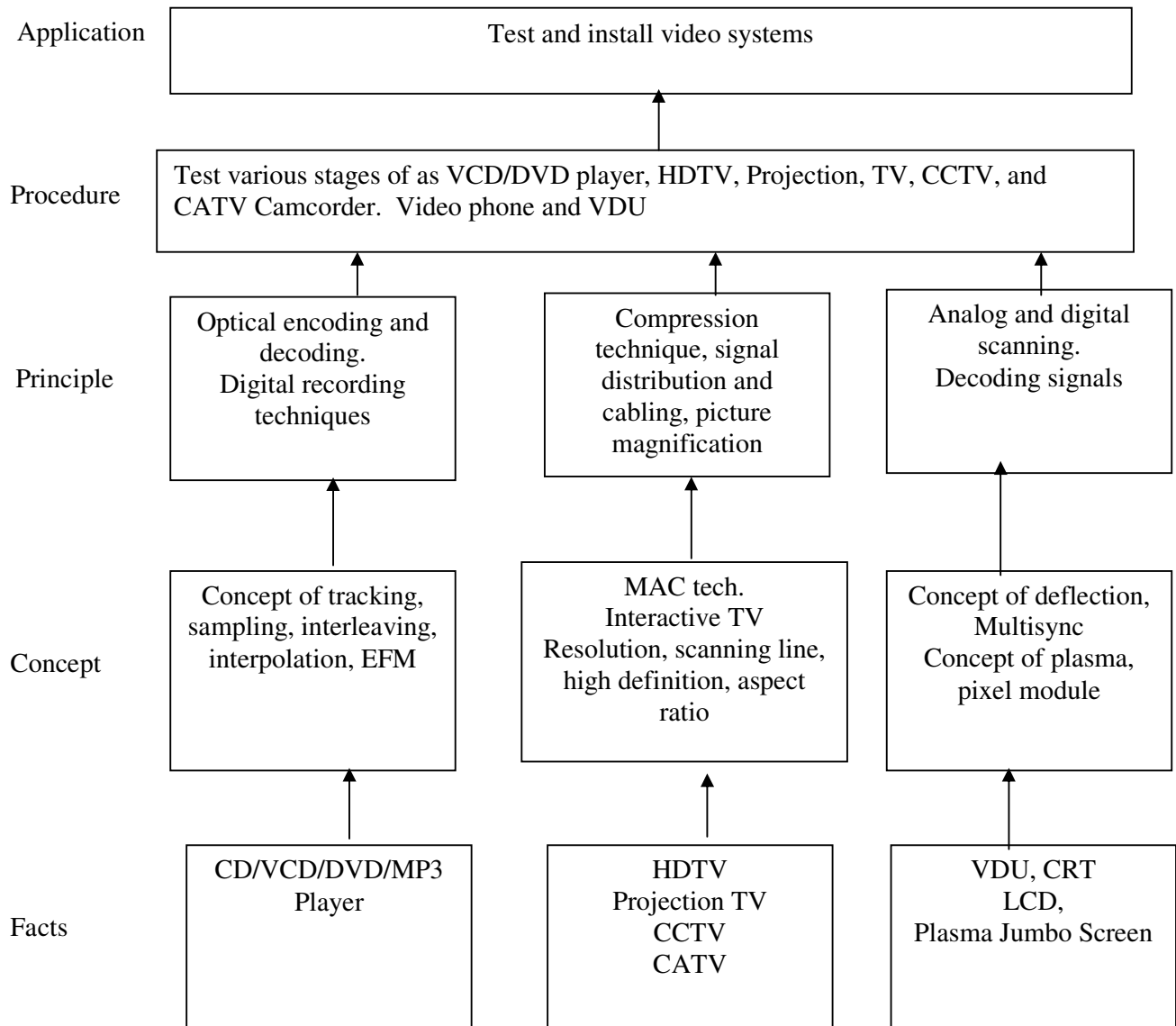
**Rationale:**

This subject is an Applied Technology subject and is intended to develop competencies to work with state-of-the-art video equipment.

**Objective:**

1. Understand concept and working principle of modern video equipment.
2. Maintain, test and install video equipment.
3. Carry out logical analysis of symptoms and troubleshoot video equipment.

**Learning Structure:**



**Contents: Theory**

<b>Chapter</b>	<b>Name of the Topic</b>	<b>Hours</b>	<b>Marks</b>
01	<b>VCD / DVD/ MP3 Player</b> 1.1 What is CD 1.2 Block diagram of CD encoding and function of each block 1.3 Block diagram of VCD / DVD / MP3 player and function of each block 1.4 Three beam optical pickup assembly. 1.5 Servo System 1.5.1 Need for servo system. 1.5.2 A basic servo system block diagram. - Tracking servo system - Carriage servo system 1.5.3 Need for spindle motor servo system. 1.6 Motors in VCD/ DVD/ MP3 player 1.6.1 Different motors used in VCD/ DVD/ MP3 player and their function only. 1.7 Introduction to DVD player 1.7.1 DVD advantages. 1.7.2 Enhancing Data storing capacity	<b>14</b>	<b>24</b>
02	<b>TV Systems</b> 2.1 Application of CCTV 2.2 Cable TV System 2.3 Block diagram of cable TV System and it's working. 2.4 Head end 2.5 Signal processing and distribution 2.6 Coaxial Cable 2.7 Applications of CATV 2.8 Conditional access built in scrambling system.	<b>07</b>	<b>14</b>
03	<b>High End TV Systems</b> 3.1 HDTV System 3.2 Aspect ratio, Resolution, Number of scanning lines 3.3 Active lines, bandwidth 3.4 Compatibility 3.5 Digital video signal vs analog signal, digital sound 3.6 Bandwidth reduction, MUSE System, MAC Signal 3.7 Block diagram of MAC Muse encoder and it's working 3.8 Block diagram of HDTV and It's working 3.9 Concept of Interactive TV 3.10 Projection TV Systems 3.11 Concept of Projection TV to get large screen 3.12 Block diagram of projection TV and it's working 3.13 Applications of Projection TV.	<b>09</b>	<b>16</b>
04	<b>Video Display Unit</b> 4.1 CRT Monitor 4.1.1 Classification of Monitor 4.1.2 Specification of monitor 4.1.3 Block diagram of colour SVGA	<b>09</b>	<b>12</b>

	4.1.4 Multi sync Monitor – Low radiation Screen 4.2 Block diagram of LCD Monitor. 4.3 Plasma TV 4.3.1 Display Basics 4.3.2 What is plasma 4.3.3 Inside display gas , electrodes and phosphor 4.3.4 Advantages of plasma. Display Technology 4.4 Jumbo TV screen. 4.4.1 Jumbo screen size, brightness 4.4.2 LED module 4.4.3 Computer system, power control system & wires		
05	<b>Advanced Video Equipments</b> 5.1 List of different equipments used in production studio and their function only. 5.2 Video editing techniques 5.3 Editing equipments used in editing room. 5.4 Block diagram and working of camcorder 5.5 Analog formats std VHS, VHS-C, super VHS, 8 mm Hi – 8 5.6 Digital format mini DV Digital 8, DVD 5.7 Concept of video phone 5.8 Concept of video compression techniques MPEG 1/2/4 JPEG 2000. 5.9 Introduction to commonly used file formats. TIFE, BMP, GIF, PNG, JPEG	09	14
<b>Total</b>		<b>48</b>	<b>80</b>

**Practical:**

Skills to be developed:

Intellectual Skills:

1. Investigate, Analyse
2. Interpret
3. Decision making

Motor Skills:

1. Drawing
2. Accuracy in Measurement
3. Operate
4. Trouble shooting

**List of Practical: (ANY TEN)**

1. To locate various stages , draw layout of VCD/ DVD/ MP3 player and record functions of various IC's.
2. To observe the symptom, do logical analysis and rectify the fault in front panel switches.
3. To observe the symptom, do logical analysis and rectify the fault in eject driving circuit/ mechanism.

4. To observe the symptom, do logical analysis and rectify the fault in spindle motor driving circuit / mechanism.
5. To observe the symptom, do logical analysis and rectify the fault in optical pickup unit and driving circuit.
6. To observe the symptom, do logical analysis and rectify the fault in optical unit and unit movement circuit and mechanism.
7. To observe the symptom, do logical analysis and rectify the fault in power supply. (minimum two faults)
8. To observe the symptom, do logical analysis and rectify the fault in RF modulator.
9. Select different components of CC Tv System, Install and operate
10. Install, adjust and tune the DTH receiver.
11. Experts lecturer on HDTV/ projection TV
12. To identify various stages and draw layout of monitor
13. To observe the symptoms, do logical analysis and rectify the fault in monitor.
14. Capturing of video images and recording of sound using different sources, file formats and software
15. Video editing and sound dubbing / adding / mixing eg. :- adding titles , transitions, sound clips, grabbing pictures, splitting images etc.
16. Movie making by selecting file formats and write movie on CD using Nero Software.

**Learning Resources:**

**Books:**

Sr. No.	Author	Title	Publisher
01	R.R. Gulati	Modern Television practice	New Age International
02	R.R. Gulati	Monochrome and colour Television	Wiley Eastern Ltd.
03	Bernad Grobe	Basic TV and Video system	McGraw Hill International
04	Maini	Colour T.V. and Video Technology	PHI Publications. New Delhi
05	John D. Lenk	Compelete Guide To Laser Video Disc Player.	Prentice Hall of India
06	Lotia Nair	Modern -All About Monitors	BPB publication
07	Manahar Lotia	Modern MP3/VCD Servicing Manual	BPB Publication