



**SATHYABAMA**

INSTITUTE OF SCIENCE AND TECHNOLOGY  
(DEEMED TO BE UNIVERSITY)

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**SCHOOL OF SCIENCE AND HUMANITIES**  
**DEPARTMENT OF VISUAL COMMUNICATION**

**UNIT – I – TELEVISION PRODUCTION THEORY – SVCA1402**

# I. Introduction

## Unit 1 -Introduction to Television Production

Introduction to Visualization-First Visualization means it is a way a communicating with people through audio-visuals. Visualization is the process of conveying messages effectively but it requires a lot of observation, creativity, technical knowledge and experience.

In visualization where one person says something and the other totally misunderstands it differently because of understanding of language, way of perception because each have different way of perception because the point is that perception is based only on our experience.

Principles of Visual Grammar- There are few principles which we must follow during a shooting process like edges of the frame as they play an important role in composing a visual. These are the following principles in a visual grammar:-

- Headroom- The space above the object or character within a frame.
- Nose room/Lead room- The space within the frame that connects to an outside space of interest.
- 180-degree rule- It is a basic guideline regarding the on-screen spatial relationship between a character and another character or object within a scene. An imaginary line called the axis connects the characters and by keeping the camera on one side of this axis for every shot in the scene, the first character will always be frame right of the second character, who is then always frame left of the first. If the camera passes over the axis, it is called jumping the line or crossing the line.
- Shot, reverse-shot sequence-This is the basic sequence in a classical narrative construction. For example, shot of two characters engaged in a dialogue will favor one and another.

### Different approaches to Visualization

- TV (Television)-An electronic apparatus that receives such signals, reproducing the images on a screen, and typically reproducing accompanying sound signals on speakers.
- Films-A sequence of images of moving objects is been photographed by a camera and providing the optical illusion of continuous movement when projected onto a screen. It is a form of entertainment, information, etc., composed of such a sequence of images and shown in a cinema, etc.
- AD films- Is a form of marketing communication used to encourage, persuade, or manipulate an audience (viewers, readers or listeners; sometimes a specific group) to take or continue to take some action. Most commonly, the desired result is to drive consumer behavior with respect to a commercial offering, although political and ideological advertising is also common.

### Different stages of production

There are 3 different stages of production

- ❖ Pre-Production
- ❖ Production
- ❖ Post Production

#### 1. Pre-Production- The planning stage.

There are various steps to be processed in a Pre-production stage like

- Generating Ideas- In a production an idea is the basic unit or they bring out new ideas.

- Scripting-It is the backbone of the story .Writing down the theme or the topic on which the shooting is going to be processed. It is the basic our ability to convey the story using right words and imagination.
  - Writing the treatment- Treatment itself is not the total script it is just the synopsis or indicator of the whole story.
  - Storyboarding- Pictorial representation of shots in a sequential order. It is very handy during shooting shorter videos like commercial or public service messages.
  - Planning- They plan about the following
- ❖ Location Hunting- Searching for a good or perfect location for the script.
  - ❖ Budgeting- It is the producer’s responsibility he/she should have the knowledge of the amount of equipments, production, personnel and transportation.
  - ❖ Requisitioning Facilities & Equipments- We clearly need to specify the kind of equipment we need for production purpose. Even a small missing cable will lead to rising of cost in production.
  - ❖ Procuring Permits- The production manager must get permit from the shooting location before the crew lands up.
  - ❖ Shooting Schedule- It is like a class time table in which it shows what we will be shooting on a given say. It must be given to all the personnel ( Director, Production Assistant, Video Editor, Sound Editor, Graphics Artist, Special effects engineer, Video tape log assistant, Dubbing Editor, Dubbing artist)
  - ❖ Briefing the Crew- They brief the crew member before the shoot is crucial. It is done because they must know their role and responsibilities during the shoot.
2. Production- The shooting stage.
- Managing Video Equipments while travelling.
    - ❖ Video tapes.
    - ❖ Batteries
    - ❖ Managing the Camera
    - ❖ Camera Movements
    - ❖ Zoom
    - ❖ Focus
    - ❖ Composition
    - ❖ Managing the Light & Audio Equipments.
  - Blocking, Rehearing & shooting-Rehearsing helps out in bringing out good output. Blocking means viewing the shots with the actor to know the camera movements without recording and it helps to avoid mistakes.
  - Planning & Executing Shoots-In which we execute the pre-planned work on the shooting spot with the characters.
  - Handling the Master Shot- First Master shot means Entire scene shot in one long shot, Next it is broken down into various shots like Mid Long Shot, Close-Up shot, Over-shoulder shot etc...
  - Dealing with Visualising Problems- To avoid spiritual and philosophy problems.
3. Post Production- The completion stage
- Logging-Helps to rewind and forward the tapes again and again. It helps to locate the scene in correct position.
  - Editing- The process of selecting and re-recording the footage and eliminating the bad.
  - Promotion & Distribution of the movie.

### Personnel for Video Production

- Executive Producer- He is the boss of the production team & supervises. As the administrative head of the team, the Executive Producer is appointed normally for a series of programmes.
- Director/ Producer- He is the one who approves the script. In smaller productions, the producer and director may be same. As the creative head of the production, the producer is in charge of the technical aspects of a production.
- Scriptwriter- He writes the script for the production and he is responsible for coming up with creative ideas and translating them into words that will be used in the making of video. In the case of fiction, based on the storyboard and synopsis, the scriptwriter pens the script.
- Production Assistance- He is responsible to make sure the script, talent, the production, the production crew before the shoot proceeds. Other responsibilities include holding rehearsals, organizing on location and co-operating.
- Production Manager-He is responsible to take care of production and production within budget. He ensures that equipment, transport, talent, crew are in place for the shoot. Managing the crew production team and also hiring equipments and personnel for the post production.
- Cameraperson- He works with lighting director and set designer to get the right mood and picture for the video. A cameraperson composes and reflects the mood that the director desires for a shot.
- Set Designer- He is responsible for all the sets and looks at the location. He has number of people working with him for designing the set. He takes charge for procuring the right material to erect sets, decides on the place and size of the sets.
- Lighting Director- He is responsible for in charge of rigging up and controlling all lighting equipments working with a number of assistance (also called gaffers) and electricians. He makes sure that the set is well lit up as per the technical and aesthetic requirements of a shot.
- Make-Up Artist- He designs and applies make-up to all artistes. The make-up artist is helped, in the case of bigger production, by assistant make-up artist and hairstylists.
- Costume Designer- He designs costume for the talent in a production. The CD makes notes on the brief of every character in the video and what costumes and accessories suit a character.
- Choreographer- He is in charge of all composing dance sequence in a production. Often working with a number of assistants and working in close co-ordination with the director, the music composer, set designer, cameraperson, and lighting director.
- Properties Manager- He is responsible for all the properties needed on a set are ready. Properties required for the particular shoot.
- Audio Engineer- He is in responsible for overall sound levels, balance and quality of sound. He is in charge for overall sound levels, balance, and quality of sound. He is also involved in post-production during dubbing, mixing tracks, etc
- Electrical Engineer-He is responsible for all power requirements for production. Manages all equipment, right from a power generator to cables and connectors.
- Music Director- He is in charge of music requirements for a production and composes original tracks or use available music with permissions.
- Graphic Engineer- He is responsible for graphics used on the video.
- Video Editor- He is responsible who operates production equipment-the linear & non-linear editing machines. He works in close association with director in making

creative decisions in shaping the production. In smaller production, the VE also creates graphics. In large productions involving complex graphic work.

- Talent- Actors who are playing a role or those who appear in front of the camera as themselves-newscasters, anchorpersons, interviewers, personalities, contestants. They are non technical workers like directors/producers, scriptwriters, set designers etc...

### Personnel for News

- News Editor- He is the captain of TV news as he is responsible for all news appearing on the channel. The NE sets the policies, hires and fires other personnel, and works with other department in the channel. The NE provides direction to the channel.
- News Producer-He is the one who collates & packages stories from various sources for a bulletin. She also ensures that all videos/audios/graphics required for a story are in place.
- Chief reporter/assignments editor- He instructs reporters and camerapersons to cover specific events. The CR depends on press notes or engagements or personal contacts to assign a story.
- Reporter/Correspondent- He ensures that the visuals required for a story reach the station. The reporter also does interviews, vox-populi (voice of people), piece of camera (stand ups) & writes story for a newscast.
- Cameraperson- He operates the camera to cover an event. He is responsible to provide good visuals and cutaways as also good audio required for a story.
- Video Editor- He edits the video inputs from the reporter in accordance to latter's story script. He also transmits the edited story to the station through VSAT (Very Small Aperture Terminal).
- Voice-Over Artist- He provides the commentary. He provides background commentary for the news story.
- Anchor/ Newscaster- He reads out in Lead-in to a news story. They also interviews experts on the panel on live shows.
- Weathercasters/Sportscasters-He present weather or sports report.
- Multimedia Producer-He ensures that all stories are written for the channel websites and update it on regular basis. He ensures images, graphics and illustrations and all other content on the websites.

## UNIT I

### Part A

Q.No	Questions	CO(L)
1.	List down Above-the-line personnel?	1(1)
2.	List down Below-the-line personnel	1(1)
3.	What do you mean by Visualization?	1(1)
4.	Write a brief note on Scriptwriter?	1(1)
5.	Explain the role of a Producer?	1(2)
6.	Define an Editor?	1(1)
7.	Explain the role of News correspondent?	1(2)
8.	Who are called Newscaster?	5(1)
9.	Distinguish between EFP & ENG?	1(4)
10.	What do you mean by “piece to the camera”?	1(1)
11.	Explain Vox - Populi?	1(1)
12.	What do you mean by Headroom?	3(1)
13.	Differentiate Nose room and lead room?	3(4)

### Part B

Q.No	Questions	CO(L)
14.	What are the rules of Visual Grammar? Explain each factor in detail?	3(2)
15.	What care would you take during the shooting phase of the production? Explain in detail?	1(5)
16.	Explain the importance of pre-production stage and list down the detailed process involved in pre-production stage?	1(4)
17.	Explain Pre-production, Production and post-production in detail?	1(1)
18.	Draw a chart of all the above-the line personnel and below-the-line personnel reporting to the producer/director?	5(6)
19.	Draw up a list of crew members that you think are required for a music video?	5(6)
20.	Draw up a list of crew members that you think are required for a short film?	5(6)
21.	What are the roles and responsibilities of production personnel in a video production?	5(6)



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**UNIT –I I – TELEVISION PRODUCTION THEORY – SVCA1402**

## Unit 2-Video and Broadcast Technology

### Analogue & Digital Technology

Definition-Almost everything in the audio-video world is either analogue or digital. 'Analogue' is similar to the word 'analogues', which means similar or equivalent. The word 'digital' is similar to the word 'digit', which is used to describe whole numbers, from 0 to 9.

- Digital watches are called so because they display time without touching all the intermediate values. On the other hand, the old grandmother's clocks are analogue, because the hands move continuously moves around the clock face.
- Today all computers are digital. Digital describes any system based on discontinuous data & events. Computers are digital machines because at their most basic level they distinguish between just two values 0 & 1 or off & on.
- When we play a CD, the CD player reads the digital data, translates it back into its original analogue forms, and sends it to the amplifier and eventually the speakers.
- We have seen old radios with those huge volume controls. We operate the volume control; it operates in an analogous fashion, that is the volume increases smoothly from anywhere between volume level 1 to 2.
- Now let's see the volume control in television with the help of remote control. It increases volume level 5 to 6.
- While the volume control on old radio can be termed as analogue, in analogous mode we can move in parts and the volume control of television set can be termed as digital, in digital mode we can only move in wholes.

### How does a Television Set Work?

- At the heart of television monitor is a Cathode Ray Tube (CRT). The CRT consists of the screen and cone combined into a unit, and within this is positioned the electron gun and the shadow mask.
- The electron gun produces beams in red, blue and green colours that continuously hit the screen. The inside of the screen is coated with light sensitive red, green, blue crystals called phosphors, in 480 lines.
- A magnetic deflection coil is placed outside the neck of the cone. It scans the screen. Moving left to right and up and down.
- The pictures is first created by all odd lines (1, 3, 5...480) which is scanned from left to right and from top to bottom. This is then followed by the scanning all the even lines (2, 4, 6... 480). The result is that a single scan creates half an image.
- One scan takes 1/50 sec. This means that every second 25 complete images are formed.
- The horizontal lines of two fields on a receiver or monitor screen are produced by a scanning electron beam that strikes on the picture tube and cause phosphor to glow.
- The density of the beam and the resultant brightness of the screen is controlled by the voltage level of a video signal applied between the controlling aperture and the cathode in the electron gun.
- All the colours that we see on TV are the combination of 3 primary colours red, green, and blue. A proper combination of certain intensity of each colour will result in white.



## Videotapes Format

- There are four levels of quality in videotape formats: consumer, prosumer, industrial and broadcast professional. Tape generation loss is an important aspect to consider when dealing with analogue video tape format.
- During the linear editing process, there is loss of video quality as the image goes through various editing and dubbing phases.
- During non-linear the more compression is added to video, the lower the quality of the image.
- Analogue Tape- Videotape that records a representation of a continuous electronic signal.
- Composite Video- All colour, luminance, and synchronising information are carried together as a part of the same signal. Composite video was the norm until the early 1990s.
- Component Video- With component video, the luminance (black & white levels) and chrominance are transmitted as separate signals. The picture quality is superior to composite video.
- Compression- A term for the process of reducing the size of a digital file, to help with shortage or transmission, through a codec (Compression/ Decompression formula).
- Digital Tape- Videotape that records a numerical representation of how an electronic signal changes over time. A digital recording is produced from a digital file that may be compressed or decomposed as part of the recording/duplicating process.

## There are few popular videotape formats

- Name –VHS & S-VHS, System–Analogue and Purpose- Mainly for home/ consumer use.
- Name –3/4” U-matic and 3/4” U-matic SP, System–Analogue and Purpose- Mainly for industrial/ broadcast purposes.
- Name – Betacam and Betacam SP, System–Analogue and Purpose- for industrial/ broadcast purposes.
- Name – Video8 and Hi8, System–Analogue and Purpose- for amateur use.
- Name – Mini DV, System–Digital and Purpose- for both prosumer and amateur use; mostly used in educational institutions for training purposes; occasionally used for broadcast purposes.
- Name – DVCPPro (also known as D7), System–Digital and Purpose- for broadcast use.
- Name – DVCAM, System–Digital and Purpose- for broadcast use.
- Name – Betamax, System–Analogue, and Purpose- for industrial/ broadcast purposes.

## Broadcasting Formats

- The meaning of Analogue and Digital technology, move on to understand different broadcast standards in the world. Different parts of the world have different broadcast standards.
- Television sets require a source of reference signals that tell the TV receiver to be ready to receive the next picture in the stream of images.
- National Television Systems Committee- This standard was introduced in the US in 1940 as first set of standard protocols for television. It was used throughout the US, Canada, and Japan and has been adopted in other countries as well. NTSC has 525 lines displayed at 30 frames per second. It has lower resolution than PAL or SECAM but a faster frame rate,

which reduces the flicker. The first broadcasts were made in 1939, transmitting 340 lines at 30 frames/sec., The composite video signal with a refresh rate of rate of 60 half frames (interlaced) per second. Each frame contains 525 lines and can contain 16 million different colours.

- Phase Alternating Line or PAL- This broadcast standard was developed by Walter Bruch at Telefunken (German State Television). PAL was introduced in Germany in 1967. It has higher resolution than NTSC with 625 lines, but uses only 25 frames per second. After several minutes of viewing a PAL video, our eyes get used to it, and the flicker becomes unnoticeable. Each of the 25 frames in a second consists of two fields (half a frame). Fields are transmitted & displayed successively. There are 50 fields per second.
- Sequential Colour with Memory- Sequential colour with memory is so named because it uses memory to store lines of colour information in order to eliminate the colour artefacts found on NTSC systems. Video information is transmitted in alternate lines, and a video line store is used to combine the signals together. SECAM uses the same resolution and frame rate as PAL, but its processing of the colour information makes it incompatible with PAL. SECAM was introduced in France in 1967, where it is still used and adopted in many former French colonies, as well as parts of Eastern Europe and the former Soviet Union. Since NTSC is recorded at 60 frames/sec as compared to the 50 frames/sec of PAL and SECAM, its recording consumes more tape per given amount of recording time.

### Transmission Technologies

- Television involves production, transmission and reception technologies. When television was launched, the transmissions were on terrestrial (land-based) systems.
- Satellites used for television signals are generally in the geo-stationary orbit 37,000km (approx 23,000miles) above the earth's equator.
- Satellite television, like other communications relayed by satellite, starts with a transmitting antenna located at an uplink facility.
- Uplink satellite dishes are very large, as much as 9 to 12 meters (approx 30" to 40") in diameter. The uplink dish is pointed towards a specific satellite and the uplinked signals are transmitted within a specific frequency range, so as to be received by one of the transponder tuned to that frequency range aboard that satellite.
- The transponder retransmits the signals back to the earth but at a different frequency band (to avoid interference with the uplink signal). The leg of the signal path from the satellite to the receiving earth station is called downlink.
- Terrestrial Television- It is also known as Over-The-Air or OTA. It is the traditional method of television broadcast signal delivery. Terrestrial television broadcasting dates back to the very beginning of television as medium itself with the first long distance public television broadcast from Washington DC in 1927. Television channels are transmitted via ultra-high frequency (UHF).
- Antennae- It receives signals from the transmitter and sends the same to the TV set through a cable. Television waves travel in straight lines rather like light rays.
- Masthead Pre-Amplifiers- They are mounted close to aerial and fed power via download, can help to improve picture quality if signals are weak or long down lead is required. Pre-Amplifiers may also give disappointing results.
- Reflections or Ghosting- Ghosting on a TV picture is caused by reflected signals from hills, tall buildings, etc arriving at the aerial a tiny fraction of a second after the direct signal from the transmitter.

- Co-Channel interference- To overcome such problems in analogue terrestrial broadcasting, broadcaster have switch over to digital terrestrial broadcasting by changing the transmission format analogue to digital.
- Satellite & Cable Broadcasting-A broadcast system in which signals that come from the satellite to the cable operator are distributed via co-axial cables to individuals subscribers.
- Conditional Access System- A TV signal receiving system wherein the subscriber can choose which channels to watch and pay for; an extension of the cable system, involving a set top box.
- Direct to Home- A TV signal receiving system in which the subscriber receives signals directly from a satellite to a small dish, involves a set-top box.
- Internet Protocol Television- A method of receiving video as a stream and viewing it on television through the internet protocol.

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## UNIT II

### Part A

Q.No	Questions	CO(L)
1.	Illustrate progressive scanning and explain its working process?	2(3)
2.	Illustrate Interlaced scanning and explain its working process?	2(3)
3.	Differentiate between component and composite output?	2(4)
4.	Explain chrominance?	2(2)
5.	Explain luminance?	2(2)
6.	Can you identify the difference between "Y" & "C" channel? If so, explain the difference in detail?	6(4)
7.	Distinguish PAL and NTSC formats?	2(4)
8.	What SECAM stands for?	2(1)
9.	Can you recall the nick name behind SECAM? If so, What is the nick name?	2(1)
10.	Describe direct to home technology?	6(1)
11.	What CAS stands for?	6(1)
12.	Who are called MSO's?	6(1)
13.	Write down the full form for SCO and explain their role in terrestrial transmission?	6(1)

### Part B

Q.No	Questions	CO(L)
14.	What are the three broadcast systems? Explain each one of them in detail.	2(1)
15.	Discuss in detail the different broadcasting formats and its restriction of usage in our country?	6(6)
16.	What is CAS? In what manner is it an improvement over satellite and cable system?	2(3)
17.	Explain the working of DTH in detail.	6(1)
18.	Illustrate Progressive and interlaced scanning method in detail?	2(3)
19.	List down the advantages and disadvantages of traditional cable transmission and DTH transmission?	6(6)



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## Unit 3-Techniques of Television Camera

### Camera & its Parts

A camera is an optical instrument that records images that can be stored directly, transmitted to another location, or both. These images may be still photographs or moving images such as videos or movies. The term *camera* comes from the word *camera obscura* (Latin for "dark chamber").

- Lens - It draws the light into the camera and focuses it on the film plane.
- Shutter - It open and closes to control the length of time light strikes the film. There are two types of shutters: a leaf shutter, located between or just behind the lens elements, and a focal plane shutter, located in front of the film plane.
- Shutter Release - The button that releases or "trips" the shutter mechanism.
- Aperture - It dilates and contracts to control the diameter of the hole that the light passes through, to let in more or less light. It is controlled by the f-stop ring.
- Viewfinder - The "window" through which you look to frame your picture.
- Film Rewind Knob-This knob rewinds the film back into the film cassette.
- Camera Body - The casing of the camera which holds and encloses the camera parts.
- Flashes Shoe - This is the point at which the flash or flash cube is mounted or attached.
- Self-Timer - This mechanism trips the shutter after a short delay - usually 7 to 10 seconds - allowing everyone to be in the photograph.
- Shutter Speed Control - This knob controls the length of time the shutter remains open. Typical shutter speeds are measured in fractions of a second, such as: 1/30 1/60 1/125 1/250 1/500 and 1/1000 of a second.

### Camera Features & Effects

This section deals some of the important features of a camera and their effects

- Focal Length- The distance from the optical centre of the lens to the point where the image is seen in focus by the lens.
- Wide-Angle Lenses- The wide angle lens can show a large field of view. It is used to shot large group of people. It can also create illusion of speed and is most suitable for high action shot as speeding cars.
- Telephoto Lenses – It is just opposite to Wide-Angle lenses because it does not have a large field of view, it needs constant focussing and zooming makes the movements slower.
- Macro Setting- Zoom lenses often have a macro setting that allows to focus on an object very close to the front element of the lens.
- Focus- In lighting, to vary a spotlight's beam size and intensity; the sharpness with which a shot appears.
- Depth of Field- The range in which all objects in front of the camera lens appear to be in focus is called depth of field.
- Aperture - It dilates and contracts to control the diameter of the hole that the light passes through, to let in more or less light. It is controlled by the f-stop ring.
- Shutter Speed- The length of time a shutter remains open to allow light to reach the CCD is called shutter speed.
- White Balance- A function that tells the camera what colour white looks like, achieved by the use of a white card when the camera shifts from one location to another with different colour temperature.
- Aspect Ratio- The ratio of the width of the frame to its height 4:3.

## Camera Mounting Equipments

The two most common types of supporting or mounting device are Tripod and Human Shoulders. The following are Camera Mounting Equipments:-

- Tripods- It is a three-legged device for supporting the camera, Camera is mounted on the top of the three legs is a tripod head- a device with handle allows the camera to move smoothly. The adjustable legs allow for the tripod to be levelled even on uneven surface. The camera can be raised up from 2 to 6 feet.
- Dollies- Dollies come from various sizes. Usually, one person drives or pulls the dolly while another operates the camera. They are excellent for moves that involve forward and backward.
- Cranes & Jibs- Cranes are large pieces of equipment used in outdoor that can move the camera from very low to very high above the set. Cranes move forward, backward, sideways and in arcs. Jib-arms are known as Jibs they are the smaller version of cranes they are used to swing the camera out over an area. They are small and used for indoor shoot.
- Track & Trolley- The horizontal band across the time line window that graphically represents a series of clips. In this equipment the camera is mounted. It requires a great amount of practice to work on track & trolley since the speed and control are crucial factor in executing track shots.

## Camera Movements

- Pan/Tilt- To include or exclude the subjects. To show spatial relationships. To shift attention. To build or clear suspense. To show panoramic views.
- Dolly/ Track In- To exclude some objects. To focus attention on part of action. To shift emphasis on an object or part of action. To create subjective movements. Increase emotional tension within the frames. To decrease field of view. To get closer to subject.
- Dolly/Track Out- To increase field of view. To go farther away from objects. To include more objects. To create subjective movements. Decrease tension.
- Truck/Crab Right or Left- To follow moving subjects across the screen. To reveal context. To create subjective movements. To emphasise depth of field.
- Arc Left or Right-To provide fresh point of view. Exclude or include the background or foreground. To reframe a shot. To provide subjects position to the set/ location. To avoid transitions and maintain continuity.
- Zoom In/Out- To adjust framing by removing or including certain objects. To get a bigger view of far away objects or get a wider shot when the normal lens cannot provide the desired field. To increase the flexibility in terms of production. To produce distorted images or otherwise.
- Ped Up/Down- To show the relationship between foreground and background. Ped up helps in seeing foreground and overall action even while decreasing the significance of the primary subject. Ped down helps see primary subject in the foreground and lends significance to them. Ped up and Ped down together provide fresh view points.

## Camera Angles

- Top Angle- It is not as extreme as a bird's eye view. The camera is elevated above the action using a crane to give a general overview. High angles make the object photographed seem smaller, and less significant (or scary). The object or character often gets swallowed up by their setting - they become part of a wider picture.

- Eye Level-A fairly neutral shot; the camera is positioned as though it is a human actually observing a scene, so that e.g. actors' heads are on a level with the focus. The camera will be placed approximately five to six feet from the ground.
- Low Angle - These increase height and give a sense of speeded motion. Low angles help give a sense of confusion to a viewer, of powerlessness within the action of a scene. The background of a low angle shot will tend to be just sky or ceiling, the lack of detail about the setting adding to the disorientation of the viewer.

### Camera Distance

The actual distance of the lens from the objects is capable of resulting in different compositions. Different camera distances (normally it is altered through physical shifting of the camera or using a zoom lens) provide different perspectives of an object. Often the camera distance & the lens angle are adjusted simultaneously to produce changes to size relationships in shot.

### Camera Lens & its Uses

- Zoom Lenses- is a mechanical assembly of lens elements for which the focal length (and thus angle of view) can be varied, as opposed to a fixed focal length (FFL) lens.
- Focal Length- The distance from the optical centre of the lens to the point where the image is seen in focus by the lens.
- Wide-Angle Lenses- The wide angle lens can show a large field of view. It is used to shot large group of people. It can also create illusion of speed and is most suitable for high action shot as speeding cars.
- Telephoto Lenses – It is just opposite to Wide-Angle lenses because it does not have a large field of view, it needs constant focussing and zooming makes the movements slower.

### Shot

A series of frames; the number of frames shot between the switching on and off the record button on the camera.

### Different Types of Shots

- Extreme wide shot (EWS) -shows a broad view of the surroundings around the character and conveys scale, distance, and geographic location.
- Wide shot (WS) -shows an entire character from head to toe.
- Mid Long shot (MLS) - shows a character usually cut off across the legs above or below the knees. It is wide enough to show the physical setting in which the action is taking place, yet it is close enough to shot facial expression.
- Medium shot (MS) -shows a character's upper-body, arms, and head.
- Medium Close-up (MCU) -shows reaction and indicates what subject is feeling.
- Close-up shot (CU) -shows a character's face and shoulders. It is close enough to show subtle facial expressions clearly.
- Extreme close-up shot (ECU) -shows only a part of a character's face. It fills the screen with the details of a subject.

### Lighting Instruments

Sun is the primary source of light-even for video productions-unless shooting indoors. The early morning and the evening sun throw long shadows, whereas the shadows are shorter during afternoon. As the sun moves across the sky, there are subtle colour shifts.

There are numerous artificial lighting sources in the form of tungsten light. Not all tungsten is 3200 K. A common 100-watt light bulb, as seen earlier, is 2800K. Since fluorescent lamps produce greenish blue hue/light, colour balanced fluorescent tubes are now largely used in most studios because they produce cool & result in good picture

Following are the most common lighting instruments used in video production:-

- Sun Gun- They come in handy when they want to shoot in big area with light. Sun guns are very cost effective but produce a flat effect. To achieve softer results and avoid stark shadows, the light is best reflected off surface.
- Fresnel- They produces a lot of heat and are being slowly replaced by fluorescent lights, which are also called cool light. The light is controlled by using barn doors.
- HMIs- It stands for Hydrargyrum medium arc-length iodide. They are used to replace the day light. They are flood light used at indoor shoot whether its day or night shoot.
- Cool Fluorescent Lights- They scores over the tungsten lamps because they produce less heat and are most useful in studio situations. The advantage is they produce 90% light and 10% heat only.
- Soft Light- They are also known as soft-boxes or floodlights. Although these lights produce soft and diffused light to cover broad areas, their spread can hardly be controlled and require cutters to prevent undesirable areas being lit.
- Follow Spots- They throw narrow beams used to follow characters and find use in entertainment programmes.
- Gobos- These are small or big stencils or cut-outs used with lights, which throw pattern of leaves, windows and other decorative images.

Following are the most common lighting accessories used in video production:-

- Gels- Coloured gelatine sheets. They are placed in front of the lights will create different intensities of reds, yellows and blues.
- Diffusers- Flame-Proof 'Spun' fibreglass fixed over lamp as in frame, like butter sheets are supported in large frame.
- Reflectors- Including white umbrellas and handheld circular flexible material and white thermocoal. There are two types of reflectors hard & soft. The hard reflectors are a flat surface, either hand held or stand mounted with a polished surface to reflect light. Soft reflectors are flexible or foldable and fabric made. One side gold and the other silver or pure white.
- Reflectors Outdoors- Early morning & late afternoons are the best times to use reflectors.
- Reflectors Indoors- They are used to bounce off strong light from a window or even from the artificial lights.
- Scrims- They are perforated, thin metal sheets that reduce the intensity and soften light to certain extent.
- Barndoor- They are two or four panels in front of the light, used to shape the beam & shade the camera lens or scene.

### Properties of Light



- Intensity-Light intensity refers to the luminous power of a light source and it is usually measured in candelas. This is the strength of light as transmitted from a source of light. Some of the more common measurements include radiant intensity and luminous intensity.
- Colour Quality- It is a quantitative measure of the ability of a light source to reproduce colours of illuminated objects. Developed by researchers at NIST, the measure is a possible answer to the criticism of the widely used colour rendering index. It is based on coloured samples used in the Colour Quality Scale. Predictions of the CQS and results from visual measurements were compared.
- Dispersion- Visible light is actually made up of different colours. Each colour bends by a different amount when refracted by glass. That's why visible light is split, or dispersed, into different colours when it passes through a lens or prism. Shorter wavelengths, like purple and blue light, bend the most. Longer wavelengths, like red and orange light, bend the least.
- Direction- When it comes to the direction of light, there are 360 degrees of possibilities. When the light isn't working for you, change it by moving your position, your subject's position, or the light itself, if possible.

### UNIT III

#### Part A

Q.No	Questions	CO(L)
1.	The long shot in which the entire scene is played out is called the-----	3(4)
2.	The ring on the camera that allows us to increase or decrease the exposure is -----	3(4)
3.	-----is the person who actually records news on video	3(4)
4.	Explain white balance and its importance in detail?	3(1)
5.	Explain point of view shot?	3(1)
6.	What is focal length? How focal length determines the choice of lens?	3(2)
7.	Differentiate between Directional light and diffused light?	3(4)
8.	What purpose does a close-up shot serve?	3(2)
9.	Write the basic difference between a tripod and dolly?	3(4)
10.	What is scrim?	3(1)
11.	What is the purpose of using barndoors?	3(2)

#### Part B

Q.No	Questions	CO(L)
12.	What are the seven basic shot sizes? Explain their characteristics and uses in video?	3(1)
13.	What are the various movements of camera? Explain their uses with examples of your own?	3(1)
14.	Illustrate studio pedestal in detail?	3(3)
15.	Draw and explain 180 – degree rule? Why should not be broken while shooting?	3(6)
16.	List out the various camera mounting device (monopod, tripod, tripod dolly, pedestal, crane & jimmy jib) and its uses?	3(1)
17.	What are the objectives of good lighting?	3(2)
18.	Explain three-point lighting with a diagram.	3(1)

19.	What are the most commonly-used lighting instruments? Explain each one of them.	3(1)
20.	Explain the uses of Reflectors, Diffusers, Reflectors indoor, Reflectors outdoor, Gels, barn doors, scrims, and cutters?	3(2)
21.	Draw the various parts of a video camera? Explain in detail?	3(6)
22.	How does focal length of a lens affect an image? How is the focal length related to the depth of field?	3(5)



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**SCHOOL OF SCIENCE AND HUMANITIES**  
**DEPARTMENT OF VISUAL COMMUNICATION**

**UNIT – IV – TELEVISION PRODUCTION THEORY – SVCA1402**

## Unit 4 – Scripting & Editing

### Script

It always develops from the idea, a TV news copy that has voice over's, sound bites, stand-ups, the visuals list.

### Treatment

A film treatment or treatment is a piece of prose, and the first draft of a screenplay for a motion picture, television program, or radio play. It is generally longer and more detailed than an outline or one-page synopsis, and it may include details of directorial style that an outline omits. Treatments read like a short story, except they are told in the present tense and describe events as they happen.

### Storyboard

Pictorial representation of shots in a sequential order. It is very handy during shooting shorter videos like commercial or public service messages. In other words it is a graphic organizer in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion picture, animation, motion graphic or interactive media sequence.

### Genres & Formats

TV genres are categories of programmes that have similar characteristics. They are broadly classified as fiction & non-fiction.

- Drama- Single episode dramas, serials and soap operas.
- Factual- Documentary, science, consumer programmes, business programmes, ethnographic films, crime investigation.
- News & Current Affairs- Daily newscast and all other programmes coming up on news channels.
- Arts-Theatre, music, dance, cinema, visual arts, photography and literature.
- Entertainment- Comedy, game show, sitcoms, popular music, chat shows, variety shows and satire.
- Children's Programmes- Shows drama, cartoons, and entertainment.
- Religion- Issues of mortality, faith and belief as well as acts of worship.
- Sports- Magazine and news programmes as well as coverage of sports events.
- Youth Programmes-Magazines on youth, college life, etc.
- Education-Programmes made for use by school and college students.
- Women's Programmes- All programmes aimed at women. While there are several genres, they can be presented to audience in different forms. Producers normally use the following formats to present the above genres.
- Demonstration- As the name suggests, demonstration is a programme that focuses on demonstrating the way something is done or works. A demonstration may be shot in the studio or on the field.
- Documentary- A documentary explores a topic in depth. Most often, the treatment for a documentary is first written out and shot and the final script written before actually editing it.

- Dharma- A drama has actor playing the parts of a story's characters. The story, which develops through various events, involves audience. It demands considerable preparation time because the actors must learn their lines.
- Animation-Animation involves combining still drawings at the rate of 25 frames per second to produce the illusion of movement. The means 25 separate pictures of each second of picture is drawn out.
- Illustrated Talk- Usually involving an expert or a host, the illustrated talk normally uses a lot of illustrations as cutaways to show what the presenter is talking about.
- Puppets- Puppets are yet another effective and novel way of presenting interesting programmes. Rehearsal time is less than that required for drama or animation. However, if the puppets are not made attractively made, it can result in a damp show.
- Graphics- Graphics means painted pictures and words. They are done manually or by using software. The camera moves across the graphics to create a sense of movement. Care must be taken to draw all pictures in the right aspect ratio (4:3).

### Introduction to Editing

Editing is the process of selecting and re-recording just the good footage, eliminating the bad. In other words it is a process in the post-production like including titling, effects etc. It is a process of joining a series of disjointed shots to create meaningful scenes and sequence in turn a film in totality. Omitting the unwanted, irrelevant scenes. Increase or Decrease the duration of the programme.

### Editing Theories

Editing has travelled a long way- from simple continuity editing to complex and dynamic MTV style of editing. As long video is delivered on television, it can afford to show shots ranging from ECU to MLS and sometimes long shots. When a sequence concluded, there would be a fade-out or a title that would take us to the next sequence.

#### ❖ Montage

- A single pictorial composition made by juxtaposing or superimposing many pictures or designs. The art or process of making a composition of different shots.
- A relatively rapid succession of different shots in a scene. The juxtaposition of such successive shots as a cinematic technique.
- Metric Montage- The shots are joined together according to their length, with the absolute length if the piece already determined.
- Rhythmic Montage- The action within the frame is given as much weight as the actual physical length of each shot.
- Tonal Montage- The emotional tone of a sequence directs the montage. This montage follows the cognitive reaction audience members have to certain presentation of real-world experience.

- Over Tonal Montage- It is a combination of all the three types of montage discussed above. It follows the cognitive component of the tonal montage, and then adds emotional response to it through additional montage elements.
  - ❖ Linear Editing
    - Linear video editing is a video editing post-production process of selecting, arranging and modifying images and sound in a predetermined, ordered sequence. In other words traditional form of tape to tape video editing.
  - ❖ Non-Linear Editing
    - A non-linear editing system is a video or audio editing, digital audio workstation system that performs non-destructive editing on source material. In other words the digitising & random access of clips to edit on a computer; is also known as digital editing.
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#### UNIT IV

##### Part A

Q.No	Questions	CO(L)
1.	Define Chroma key?	4(1)
2.	Explain Location hunting?	4(2)
3.	Classify Story Board?	4(4)
4.	Differentiate Rough cut and Jump Cut?	4(4)
5.	Discuss about Montage?	4(2)
6.	Recall Nose room?	4(3)
7.	Identify Video Transition?	4(2)
8.	Compare Fade in/out and Dissolve	4(5)
9.	Write a small statement about Time Code?	4(6)
10.	Explain Non-linear Editing?	4(2)

##### Part B

Q.No	Questions	CO(L)
11.	Elaborate different types of Montage with examples?	4(3)
12.	How Non-linear editing different from linear editing? Explain the advantages of non-linear editing?	4(1)
13.	Write a proposal for the documentary film of your choice and also write the probable flow of ideas.	4(6)
14.	Explain the different script formats used in TV news copy? Give examples for each of them?	4(2)
15.	Distinguish and importance of documentary and feature films?	4(4)



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**UNIT – V – TELEVISION PRODUCTION THEORY – SVCA1402**

## Unit 5- Studio Production & Control

### ❖ Studio Production

#### Set Design

- Scenic design (also known as stage design, set design or production design) is the creation of theatrical, as well as film or television scenery. Scenic art should provide an experience that engages your heart and mind. It takes you to a person, place or thing that can cause us to value it.

#### Composition

- The arranging of all the visual elements in a frame in a manner that makes the image pleasing to look at, satisfactory & complete.
- The way in which something is put together or arranged the combination of parts or elements that make up something.

#### Single-Camera Production

- The single-camera setup, or single-camera mode of production, is a method of filmmaking and video production.
- An alternative production method, which is more widely used is still called a "single-camera", but in actuality two cameras are employed - one to capture a medium shot of the scene while the other to capture a close-up during the same take, which saves time as there are half as many set-ups for each scene.
- Action films will use three or more cameras to capture multiple angles as action scenes take a great deal of time for only seconds to a few minutes of footage. With this method multiple set-ups for the same sequences can be largely avoided.

#### Multi-Camera Production

- Multi camera production is a method of shooting television programs and films where several cameras are employed on the set to record or broadcast a scene simultaneously.
- There are two outer cameras for close shots of the most active characters and a central camera for the master shot, capturing the overall action and establishing the geography of the set. Multiple shots are thus obtained without interrupting the action.

#### Field Production

- It is a television industry term referring to a video production which takes place in the field, outside of a formal television studio, in a practical location or special venue. Typical



applications of electronic field production include awards shows, concerts, major newsmaker interviews, political conventions and sporting events.

- It places the emphasis on high-quality, multiple-camera setup photography, advanced graphics and sound.

### Production Management

#### ❖ Definition

"Production management deals with decision-making related to production processes so that the resulting goods or service is produced according to specification, in the amount and by the schedule demanded and at minimum cost."

#### ❖ Meaning

- Production management means planning, organising, directing and controlling of production activities.
- Production management deals with converting raw materials into finished goods or products. It brings together the 6M's i.e. men, money, machines, materials, methods and markets to satisfy the wants of the people
- Production management also deals with decision-making regarding the quality, quantity, cost, etc., of production. It applies management principles to production.
- Production management is a part of business management. It is also called "**Production Function.**"

### Production Team

- A production team is the group of technical staff who produce a play, television show, recording, or film. Generally the term refers to all individuals responsible for the technical aspects of creating of a particular product, regardless of where in the process their expertise is required, or how long they are involved in the project.
- In a theatrical performance, the production team includes not only the running crew, but also the theatrical producer, designers and theatre direction.

### Wardrobe

- The Costume Designer is responsible for all the clothing and costumes worn by all the actors that appear on screen. They are also responsible for designing, planning, and organizing the construction of the garments down to the fabric, colours, and sizes.
- The Costume Designer works closely with the Director to understand and interpret "character", and counsels with the Production Designer to achieve an overall tone of the film.
- The Costume Supervisor works closely with the Designer. They supervise construction or sourcing of garments, hiring and firing of support staff, budget, paperwork, and department logistics. They are also called the Wardrobe Supervisor

## Make Up

- Make-up Artists work with makeup, hair and special effects to create the characters look for anyone appearing on screen. Their role is to manipulate an Actor's on-screen appearance whether it makes them look more youthful, larger, older, or in some cases monstrous. There are also Body Makeup Artists who concentrate their abilities on the body rather than the head.

## Sets & Properties

- The production set is the set of possible input and output combinations. So that this set can be defined by restrictions on a collection of vectors with the dimension of the number of goods, one element for each kind of good, and a positive or negative real quantity in each element.

## Floor Management

- A floor manager is a member of the crew of a television show. The floor manager is responsible for giving information from the director in the control room, to the crew on the studio floor, and then back to the director.
- Ensure all equipment is working on the set, before and during show, Inform director and producer of off-camera action, Give the talent/floor staff/guests time counts and cues: Understand entire show in order to make changes when needed to set, props, etc, Brief talent/guests on what to expect during show.

### UNIT V

#### Part A

Q.No	Questions	CO(L)
1.	Define Wave length?	5(1)
2.	Elucidate Cyclorama?	5(4)
3.	Discuss about Omni Directional Microphone?	5(2)
4.	Relate Amplitude cut and Frequency?	5(2)
5.	Categorize different kind of microphones?	5(4)
6.	Recall Segue?	5(3)
7.	Distinguish Uni and Bi-directional microphone?	5(4)
8.	Classify Wardrobe?	5(4)
9.	Write a short notes on Floor Manager?	5(6)
10.	Explain Timbre?	5(4)

#### Part B

Q.No	Questions	CO(L)
11.	Describe the process involved in the production phase of a multi-camera production?	5(1)
12.	What are the elements of an OB van? Explain the functions of each one of them?	5(1)
13.	Analyze in detail the different types of Programme sounds?	5(4)
	Explain ENG and EFP in detail. What are the four modes available for a reporter to send news to the television channel?	5(2)

14.	Discuss about various equipment involved in a multi-camera production?	5(2)
15.	Explain dynamic and condenser microphones? How is a Uni-directional microphone different from an Omni-directional microphone and a bi-directional microphone?	5(2)

References:

1. Herbert Zettl, Television production handbook, Seventh edition, Wadsworth Publishing Company (2000).
2. Vasuki Belavadi, Video Production, published by Oxford university press ,2008