PRECISION EXAMS

Television Broadcasting

EXAM INFORMATION

Items
46
Points
55
Prerequisites
NONE
Grade Level
10-12
Course Length
ONE SEMESTER

Career Cluster
ARTS, A/V TECHNOLOGY, AND COMMUNICATION

Performance Standards
INCLUDED

**Certificate Available**
YES

DESCRIPTION

This course is designed to provide students with the basic knowledge and skills related to the television broadcasting industry. This includes instruction and hands-on assignments in the following areas: camera operation, audio systems, lighting systems, pre-production, studio operations, control room operations, visual effects and graphics, and copyright laws.

EXAM BLUEPRINT

| STANDARD	PERCENTAGE OF EXAM
1- Camera Operation	21%
2- Audio Systems	11%
3- Lighting Systems	13%
4- Production Equipment	14%
5- Control Room and Studio Personnel	11%
6- Pre-production	4%
7- Post-production	7%
8- Visual Effects and Graphics	11%
9- Television Standards	4%
10- Copyright Laws, Ethics, and Legal Issues	4%
11- Professional Skills for the Workplace (Optional)	
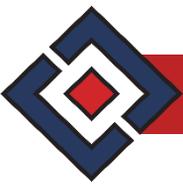
STANDARD 1
STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF THE CORRECT OPERATION OF THE CAMERA

Objective 1   Basic parts of a camera
1. Image Sensor
2. Lens
3. Body
4. Viewfinder

Objective 2   Camera operation
1. Focus
2. White balance
3. Basic exposure
4. Quality and format settings

Objective 3   Camera Support
1. Tripod
2. Monopod
3. Jib

Objective 4   Shot Composition (Framing)
1. Rule of thirds
2. Nose room
3. Head room
4. Two shot

Objective 5   Shot Type
1. Wide or long (LS)
2. Full
3. Medium (MS)
4. Close up (CU)
5. Bumper (bump)

Objective 6   Shot Angle
1. High
2. Eye level
3. Low

Objective 7   Camera movements
1. Pan
2. Truck
3. Tilt
4. Pedestal
5. Zoom
6. Dolly

Standard 1 Performance Evaluation included below (Optional)
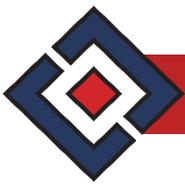
STANDARD 2

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF AUDIO SYSTEMS AND HOW THEY ARE USED

Objective 1   Microphones
1. Microphone types
    1. Lavaliere - Omnidirectional
    2. Handheld mic - Cardioid
    3. Shotgun/Boom mic – Hyper cardioid
2. Filters
    1. Pop filter
    2. Wind screen \

Objective 2   Audio Recordings
1. Audio levels
2. Voice overs
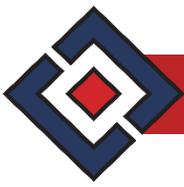3. Music tracks
4. Ambient sounds
    1. Useful
    2. Harmful

Standard 2 Performance Evaluation included below (Optional)

STANDARD 3

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF LIGHTING SYSTEMS AND HOW THEY ARE USED

Objective 1   Principles of Lighting
1. Triangle or three-point lighting
2. Key (Spot)
3. Back or Halo (Spot)
4. Fill (Flood)

Objective 2   Lighting instruments and accessories
1. Spot (direct)
2. Flood (diffused)
3. Barn doors

Objective 3   Lighting situations
1. Base lighting
2. Chroma key lighting
3. Background lighting
4. Fall off

Standard 3 Performance Evaluation included below (Optional)

STANDARD 4

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF PRODUCTION EQUIPMENT AND COMPONENTS

Objective 1   Production Switcher
1. Preview Bus
2. Program Bus
3. Key Bus
4. Mix/Effects (M/E)
5. Fader Bar

Objective 2   Audio Mixer
1. Mic/line Inputs
2. Mic/line faders
3. Pan
4. Master Fader
5. VU Meter

Objective 3   Lighting controller

Objective 4   Teleprompter

Objective 5   Connectors
1. BNC
2. HDMI
3. Mini (1/8")
    1. Stereo/Mono
4. ¼"
    1. Stereo/Mono
5. RCA
6. USB
7. XLR

Standard 4 Performance Evaluation included below (Optional)

STANDARD 5

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF CONTROL ROOM AND STUDIO PERSONNEL

Objective 1   Control room crew responsibilities
1. Producer
2. Director
3. Technical director
4. Audio engineer
5. Video playback
6. Graphics
7. Teleprompter

Objective 2   Studio crew responsibilities

    1.   Floor director

    2.   Camera operator

    3.   Talent

Standard 5 Performance Evaluation included below (Optional)

STANDARD 6

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF PRE-PRODUCTION

Objective 1	Planning (broadcasts, packages, news stories, PSA, commercial, etc.)
Objective 2	Communication

    1.   Purpose

    2.   Audience

    3.   Speaking style

Objective 3	Storyboarding
Objective 4	Script

    1.   Writing style

    2.   Vocabulary

    3.   Pacing

|	
Objective 5	Rundown
Objective 6	Studio preparation

Standard 6 Performance Evaluation included below (Optional)

STANDARD 7

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF POST-PRODUCTION

Objective 1	File management

    1.   Transferring

    2.   Organizing

    3.   Naming

Objective 2	Editing

    1.   Cuts

    2.   Transitions

    3.   Effects

    4.   Graphics

Objective 3	Output

    1.   Compression/CODEC

    2.   Formats (web, mobile, movie screen, TV, etc.)

Standard 7 Performance Evaluation included below (Optional)
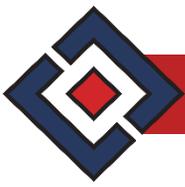
STANDARD 8

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF VISUAL EFFECTS AND GRAPHICS

Objective 1   Visual effects
1. Chroma key
2. Over-the-shoulder box
3. Virtual Studio
4. Transitions

Objective 2   Graphics
1. Text
2. Font styles
3. Colors
4. Title safe area
5. Computer-generated design
6. Still Images
7. Lower Third

STANDARD 9

STUDENTS WILL UNDERSTAND AND DEMONSTRATE KNOWLEDGE OF TELEVISION STANDARDS

Objective 1   NTSC vs PAL
Objective 2   High definition vs Standard definition
Objective 3   Aspect ratio
Objective 4   Frames per second (fps)
Objective 5   Interlaced vs Progressive

STANDARD 10

STUDENTS WILL UNDERSTAND COPYRIGHT LAWS, ETHICS, AND LEGAL ISSUES AS IDENTIFIED IN UNITED STATES CODE TITLE 17 CHAPTER 1 SECTION 101

Objective 1   Define copyright, ethics, and fair use.
Objective 2   Practice ethics and rules governing photojournalism.
1. Fair use
2. Time limitations
3. Copying and distribution limitations

STANDARD 11 (Optional)

STUDENTS WILL ENHANCE THEIR UNDERSTANDING OF GRAPHIC/PRINTING AS A PROFESSION AND WILL DEVELOP PROFESSIONAL SKILLS FOR THE WORKPLACE

Objective 1   As a participating member of the SkillsUSA student organization, complete the SkillsUSA Level 1 Professional Development Program.

1. Complete a self-assessment inventory and identify individual learning styles.
2. Discover self-motivation techniques and establish short-term goals.
3. Determine individual time-management skills.
4. Define future occupations.
5. Define awareness of cultural diversity and equity issues.
6. Recognize the benefits of conducting a community service project.
7. Demonstrate effective communication skills with others.
8. Participate in a shadowing activity.
9. Identify components of an employment portfolio.
10. Demonstrate proficiency in program competencies.
11. Explore what is ethical in the workplace or school.
1. Master a working knowledge of SkillsUSA.
    1. State the SkillsUSA motto.
    2. State the SkillsUSA creed.
    3. Learn the SkillsUSA colors.
    4. Describe the official SkillsUSA dress.
    5. Describe the procedure for becoming a SkillsUSA officer.

Objective 2 Understand the use of skills obtained in this field of study and how they relate to career opportunities.

Objective 3 Display a professional attitude toward the instructor and peers.
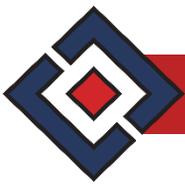
Television Broadcasting Preparation Performance Standards (Optional)

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of **8 or higher** on the rating scale. Students may be encouraged to repeat the objectives until they average **8 or higher**.
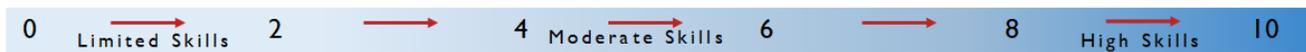
Students Name_____

Class_____

STANDARD 1 Camera Operation   Score:
☐ Understand and demonstrate camera operation

PERFORMANCE RATING SCALE

0   Limited Skills   2   4   Moderate Skills   6   8   High Skills   10

STANDARD 2 Audio Systems   Score:
☐ Understand and demonstrate audio systems and how they are used

STANDARD 3 Lighting systems   Score:
☐ Understand and demonstrate lighting systems and how they are used

STANDARD 4 Production Equipment and Components   Score:

STANDARD 5 Control Room and Studio Personnel   Score:
☐ Understand and demonstrate production (field/studio)

STANDARD 6 Preproduction   Score:
☐ Understand and demonstrate preproduction

STANDARD 7 Postproduction   Score:
☐ Understand and demonstrate post production

PERFORMANCE STANDARD AVERAGE SCORE:

Television Broadcasting Vocabulary

Standard 1

<u>Basic parts of a camera</u>

CCD/CMOS: (CCD) charge coupled device. Camera image chip that converts optical images to electronic signals. (CMOS) Accomplishes the same job as a CCD, but uses different technology.

Lens: Projects an optical image of the scene onto the surface of the CCD.

Body: Main box of the camera that holds CCD, electronics, and lens.

Viewfinder: Small video monitor attached to camera that displays what camera is shooting.

<u>Camera movements</u>

Pan: Move the camera horizontally on a pivot point.

Truck: To move the camera right or left using a dolly.

Dolly: To move the camera toward (or away from) the talent. Also refers to the wheels on a tripod.

Arc: To move the camera in a curve around talent or object. Camera stays equal distance from object.

Pedestal: (noun) a studio camera support that allows up and down movement of the camera. (verb) to move the camera up or down using pedestal camera mount.

Tilt: Up and down movement of camera on a pivot point (tilt up, tilt down).

<u>Picture composition</u>

Rule of thirds: Aid to composition; the placing of a key part of the picture or action on one of the intersections of a tic-tac-toe grid.

Nose room: The space in front of a person looking or pointing toward the side of the screen.

Headroom: The space between the top of the head and the upper edge of the picture or television screen.

Lead room: The space in front of a moving object or person.

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Lead room: The space in front of a moving object or person.

Camera operation

Focus: Image looks sharp and clear when it is in focus. ("Soft focus" is sometimes used for aging actors.)

White balance: The adjustments of the color circuits in the camera to produce white regardless of the color temperature.

Setting the iris: Adjustable lens-opening mechanism (also called diaphragm). "Setting the iris" adjusts amount of light passing through the lens by opening or closing the aperture.

Camera Support

Tripod: A three-legged stand for supporting a camera.

Hand Held: Holding the camera on the shoulder or in the hands. Often results in an unstable picture due to body movements.

Standard 2

Microphones Pickup patterns

Omnidirectional: Pickup pattern in which the microphone can pick up sounds equally well from all directions.

Unidirectional: Pickup pattern in which the microphone can pick up sounds better from the front than from the sides or back.

Microphone types

Lavaliere: A small microphone that can be clipped onto clothing.

Hand (stick): A microphone which is handled by the performer with the hand mic (stick mic) the performer can approach and talk at random to anyone in the audience.

Shotgun/Boom: A highly directional mic for picking up sounds from a relatively great distance.

Camera: The microphone built into a video camera. This microphone generally uses a cardioid pattern.

Connectors

RCA: Connector used for audio and video connections for consumer equipment.

XLR: A professional audio connector that uses three wires and delivers a balanced audio signal.

Mini (1/8"): An unbalanced connector for audio signals. Can be either stereo or mono.

Phone (1/4"): An audio connector that can be designed to carry a balanced signal or an unbalanced signal. An unbalanced phone plug will have just a tip and a sleeve (T/S) while a balanced connector will have a tip, ring and sleeve (T/R/S).

USB: A connector used to connect a microphone directly to a computer to take advantage of a computer's recording function.

Audio Mixer parts

Mic/line Inputs: Inputs on an audio mixer that can be switched to allow either a microphone or an audio output from a source such as a VCR or other audio recorder.

Mic/line faders: A sound-volume control that works by means of a button sliding horizontally along a specific scale. Identical in function to a pot (potentiometer).

VU Meter (Volume-Unit Meter): Measures volume units, the relative loudness of amplified sound.

Master Fader: Used to control the signal strength of the mixed output from an audio mixer.

Line Out: The final mixed and quality-processed signal that is sent from an audio mixer.

Standard 3

Principles of Lighting

Triangle or three-point lighting: The triangular arrangement of key, back and fill lights to render subjects with depth and texture. Also referred to as photographic principle.

Key (Spot): Principal or main source of illumination. A Fresnel spotlight is usually used as a key light.

Back or Halo (Spot): Illumination from behind the subject and opposite the camera. Usually done with spotlights. Creates depth by separating the subject from the background.

Fill (Flood): Diffused light, usually from a flood light, opposite the key light. This light illuminates shadows and reduces falloff.

Form, dimension and mood: Using lighting techniques to affect the mood and tone of a video production.

Lighting instruments and accessories

Spot: A lighting fixture that gives off a sharp, well defined directional beam of light.

Flood: A lighting fixture that produces diffused light which produces soft, indistinct shadows.

Barn doors: Metal flaps in front of lighting instrument that help control the spread light.

Lighting

Base lighting: Even, non-directional light necessary for camera to operate optimally.

Chroma key: Special key effect that uses a color (blue or green) for the key source background. All color areas are replaced by another video source during the keying. Frequently used in weather segments to show the meteorologist standing in front of charts and maps.

Background: Lighting that is directed at and intended to illuminate the background of the set.

Falloff: The speed that light areas turn to shadow areas. Fast falloff is an abrupt change; slow falloff is a very gradual change.

Standard 4

Preproduction meeting: A time to plan all of the activities and details of a production. Before a news show, this meeting is used to make sure that all of the most important stories of the day are covered.

Script: A written document that tells what the program is about, who says what, what is supposed to happen, and what and how the audience should see and hear the event.

Rundown: Lists the items to be shown on camera and their main features. Indicates which camera will be used, who will be on screen and how long each segment of the program will last.

Studio preparation: Organizing the studio to prepare for a production. All cameras, microphones, lights and other props are arranged for and organized to be used during the broadcast.

Standard 5

Crew responsibilities

Producer: In charge of an individual production. Responsible for all personnel working on the production and for coordinating technical and non-technical production elements.

Director: In charge of directing talent and technical operations. Is ultimately responsible for transforming a script into effective video and audio messages.

Technical director: Does the switching and usually acts as the technical crew chief.

Floor director: In charge of all activities on the studio floor. Coordinates talent, relays director's cues to talent, and supervises floor personnel.

Camera operator: Operates the cameras; often does the lighting for simple shows. When working primarily in field productions (ENG/EFP), they are sometimes called videographers and shooters.

Audio Technician: In charge of all audio operations. Works audio console during the show. Also called an audio engineer.

Video playback: Runs the videotape record and/or disk-based (computer) recording devices.
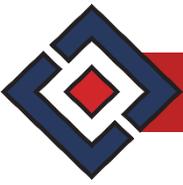
Graphics: Types and/or recalls from the computer the names and other graphic material to be integrated with the video image.

Talent: Persons who perform regularly in front of the camera.

Teleprompter: A prompting device that projects the moving (usually computer-generated) copy over the lens so that the talent can read it without losing eye contact with the viewer.

Still Store: An electronic device that can grab a single frame from any video source and store it in digital form. It can retrieve the frame randomly in a fraction of a second.

Production Switcher Parts

Preview Bus: A row of buttons on the switcher used to select the upcoming video (preset function) and route it to the preview monitor (preview function) independent of the line-out video.

Program Bus: The bus on a switcher whose inputs are directly switched to the line-out.

Key Bus: A row of buttons on the switcher, used to select the video source to be inserted into a background image (a chroma key.)

Mix/Effects (M/E): A row of buttons on the switcher that permit the mixing of video sources, as in a dissolve or super.

Fader Bar: A lever which controls the speed of a mix (dissolves and fades) and the nature of a super-impose effect.

Standard 7

Visual effects

Chroma key: Special key effect that uses a color (blue or green) for the key source background. All color areas are replaced by another video source during the keying. Frequently used in weather segments to show the meteorologist standing in front of charts and maps.

Picture in Picture (PIP): A technique that allows a small photo or video clip to be placed on the screen at the same time that a newsman/woman reads a story. The picture is often placed above one of the shoulders of the talent. Is sometimes called an over-the-shoulder shot.

Virtual Studio: Computer-generated graphics which are keyed into a chroma-key area behind the talent, much like a weather map.

Transitions: When the video changes from one scene to another. Can be a cut, a mix (fade, dissolve, super) or a Wipe

Graphics

Text: Graphic lettering superimposed over a video scene.

Font: A style of type of one particular face. The size of the font may be adjusted up or down.

Title safe area: Inner two thirds of the video image where you are secure in the knowledge that all television sets will be capable of seeing the information. Often designated with a visible frame on non- linear edit systems.

Computer-generated design: A graphic or special effect that is created digitally on a computer and then used in the video production.

Still Images: A digital photo used in video editing. This can be a digital image scanned from a photograph or a single frame of video that has been saved as a digital photo.

Lower Third: Refers to a graphic placed on the bottom third of the TV screen which generally gives information about the individual on screen (name, title, etc.) or provides specific information about the image that is on currently on the screen.