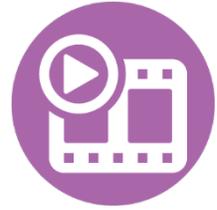




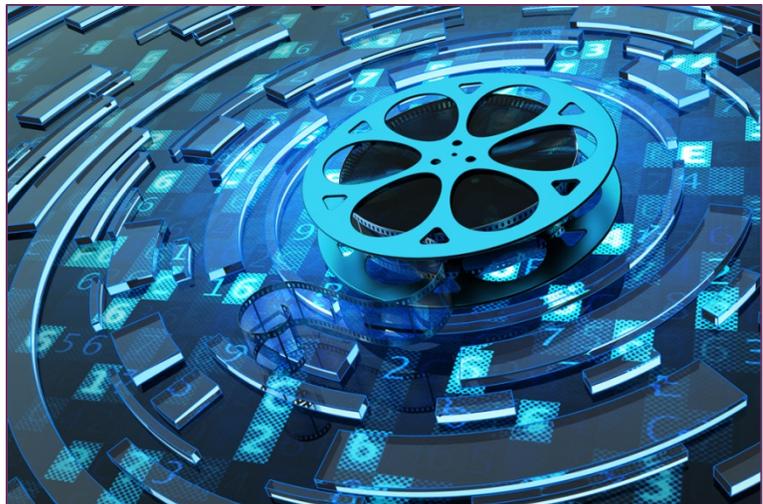
Audio/Video Technology & Communications (AR)

1. Analyze the interdependence of the technical and artistic elements of various careers within the Arts, A/V Technology and Communications Career Cluster.
2. Analyze the importance of health, safety and environmental management systems, policies and procedures common in arts, audio/video technology and communications activities and facilities.
3. Analyze the lifestyle implications and physical demands required in the arts, audio/visual technology and communications workplace.
4. Analyze the legal and ethical responsibilities required in the arts, audio/visual technology and communications workplace.
5. Describe the career opportunities and means to achieve those opportunities in each of the Arts, A/V Technology and Communications Career Pathways.
6. Evaluate technological advancements and tools that are essential to occupations within the Arts, A/V Technology and Communications Career Cluster.



Video Communications (AR-AV)

1. Describe the history, terminology, occupations and value of audio, video and film technology.
2. Demonstrate the use of basic tools and equipment used in audio, video and film production.
3. Demonstrate technical support skills for audio, video and/or film productions.
4. Design an audio, video and/or film production.





Audio/Video Technology & Communications (AR)

AR 	Standard	Performance Elements	Sample Indicators
AR 1	Analyze the interdependence of the technical and artistic elements of various careers within the Arts, A/V Technology & Communications Career Cluster.	1. Summarize the features of the partnership that technology and the arts have in developing presentations and productions.	<ul style="list-style-type: none"> Describe the impact that audio-video technology, printing, broadcasting and journalism have on the development of presentations and productions. Analyze how technical areas and the arts partner to produce high-quality presentations and productions.
		2. Analyze how the roles of creators, performers, technicians and others are similar and different from one another.	<ul style="list-style-type: none"> Analyze the roles of creators, performers, technicians and others involved in production, performance and media to identify similarities and differences. Analyze the skills required by both technical and artistic partners to provide audiences with quality works and productions. Design a presentation that illustrates the similarities and differences of the various roles.
		3. Discuss how specific organizational policies, procedures and rules help employees perform their jobs.	<ul style="list-style-type: none"> Identify the contents of various organizational publications. Locate and identify a specific organizational policy, rule, or procedure to assist with a given situation.
		4. State how various Career Pathways within the cluster work together to generate productions, media and other activities.	<ul style="list-style-type: none"> Generate a production, media, or other event and identify the interrelated activities and skill requirements associated with various Career Pathways in this cluster.
AR 2	Analyze the importance of health, safety and environmental management systems, policies and procedures common in arts, audio/video technology and communications activities and facilities.	1. Assess workplace conditions with regard to safety and health.	<ul style="list-style-type: none"> Identify the types of risk of injury/illness at work. Identify those who are susceptible to risk of injury/illness at work. Describe ways to positively impact occupational safety and health. Demonstrate safety practices for working "on-location"; i.e., stage sets, field work in journalism, extreme weather.
		2. State the implications and rationale for various rules and laws designed to promote safety and health may have on a work environment.	<ul style="list-style-type: none"> Identify key rights of employees related to occupational safety and health. Identify the responsibilities of employers related to occupational safety and health. Explain the role of government agencies in providing a safe workplace.
		3. Demonstrate personal and group health and safety practices.	<ul style="list-style-type: none"> Identify and describe common hazards in the workplaces. Interpret safety signs, symbols and sources of information about hazards in the workplace. Identify methods to correctly dispose of hazardous materials. Demonstrate principles of safe physical movement to avoid slips, trips and spills.



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AR 	Standard	Performance Elements	Sample Indicators
			Inspect and use protective equipment. <ul style="list-style-type: none"> Design a plan for maintaining individual health for work in various Career Pathways within the cluster.
		4. Illustrate situations that demonstrate compliance with OSHA safety regulations and practices as it relates to this cluster.	<ul style="list-style-type: none"> Define the OSHA safety regulations related to this cluster. Classify critical safety issues and practices identified by OSHA in relation to Career Pathways in this cluster.
		5. Demonstrate safe work habits and procedures in working with electricity in this career cluster.	<ul style="list-style-type: none"> Exhibit proper grounding techniques. Identify potential electrical hazards on the work site or set.
		6. Demonstrate safety procedures in operating equipment commonly used in the career pathways.	<ul style="list-style-type: none"> Operate an aerial system without individuals on the equipment according to established safety procedures. Climb poles, using steps, gaffs, scaffolding and ladders according to safety procedures. Illustrate the safety practices required in the control room for broadcasting; in a theater with props, sets, costumes, make-up and lighting; in graphic arts with presses and in other specific pathway locations.
AR 3	Analyze the lifestyle implications and physical demands required in the arts, audio/visual technology and communications workplace.	1. Summarize the physical preparation needed to maintain the work activities of pathways in this career cluster.	<ul style="list-style-type: none"> Demonstrate a warm-up process to prepare the body for various performing arts. Demonstrate body mechanics that prevent strain on various parts of the body and voice. Illustrate how to recognize stress as a potential safety factor to the body in various movements. Demonstrate ergonomic movements related to artistic performance and technical equipment use.
		2. Summarize lifestyle choices required to maintain the work activities of the pathways in this career cluster.	<ul style="list-style-type: none"> Apply knowledge of nutrition to meet the body's needs to supply the physical activity required by careers in this cluster. Interpret the impact of choices regarding nutrition, stress, exercise and alternative decisions on an individual's ability to sustain a career in performance.
		3. Analyze ethical conduct that provides proper credit to those whose ideas and content have been used.	<ul style="list-style-type: none"> Illustrate how credit is given for use of copyright materials. Identify the consequences in historical examples of both ethical and unethical conduct related to the use of intellectual property.
		4. Identify the proper use of proprietary information.	<ul style="list-style-type: none"> Describe how proprietary information is a concern related to careers in this cluster. Evaluate situations to judge the extent to which information is proprietary and whether or not it can be used.



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AR 	Standard	Performance Elements	Sample Indicators
		5. Analyze contracts for potential work in career pathways within this cluster.	<ul style="list-style-type: none"> Interpret various types of contracts. Identify the essential elements a contract needs to contain for protection of both parties.
		6. Analyze state, county and city codes related to decisions affecting work in this cluster.	<ul style="list-style-type: none"> Identify processes required to obtain local, county and state permits for building structures and sets and installing communications mechanisms in various site locations. Identify agencies and organizations that oversee and enforce these statutes.
		7. Analyze the First Amendment, FCC, the Freedom of Information Act, liability laws and other regulations for compliance issues relevant to this cluster.	<ul style="list-style-type: none"> Describe the intent and relationship of the First Amendment to this cluster. Identify FCC Regulations, the Freedom of Information Act and state statutes and liability laws pertaining to work in this cluster. Identify court cases related to this cluster that preserve business and individual rights. Discuss how The Freedom of Information Act affects workers in this cluster.
		8. Analyze the liabilities associated with productions and performances, media and telecommunications installations.	<ul style="list-style-type: none"> Identify examples of potential situations that could pose legal liabilities. Analyze the risk level for work situations related to this cluster.
		9. Examine labor management processes and agreements generally used in the arts, audio-video technologies, telecommunications, printing and media fields.	<ul style="list-style-type: none"> Identify issues that are handled in agreements between labor and management in one of the pathways for this cluster.
AR 4	Analyze the legal and ethical responsibilities required in the arts, audio/visual technology and communications workplace.	1. (none available at this time)	<ul style="list-style-type: none"> No sample indicators.



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AR 	Standard	Performance Elements	Sample Indicators
AR 5	Describe the career opportunities and means to achieve those opportunities in each of the Arts, A/V Technology & Communications Career Pathways.	1. Locate career opportunities that appeal to personal career goals.	<ul style="list-style-type: none"> • Locate and interpret career information for at least one career cluster. • Identify job requirements for career pathways. • Identify educational and credentialing requirements for career cluster and pathways.
		2. Match personal interests and aptitudes to selected careers.	<ul style="list-style-type: none"> • Identify personal interests and aptitudes. • Identify job requirements and characteristics of selected careers. • Compare personal interests and aptitudes with job requirements and characteristics of career selected. • Modify career goals based on results of personal interests and aptitudes with career requirements and characteristics.
		3. Identify pathways with common knowledge and skills that provide a worker with the potential for mobility.	<ul style="list-style-type: none"> • Compare the pathways for common knowledge and skills and produce a crosswalk of related career potential. • Identify work activities associated with a variety of the cluster pathways required for a theater production, film, television broadcast, or arts event.
		4. Examine the numerous career paths in this cluster to discover personal preference.	<ul style="list-style-type: none"> • Review detailed job description, qualifications and requirements for several careers of interest. • Compare the advantages and disadvantages of working independently and of working for others. • Match interests and abilities to career preferences.
AR 6	Evaluate technological advancements and tools that are essential to occupations within the Arts, A/V Technology & Communications Career Cluster.	1. Research the impact of potential new technological advancements related to this cluster in the future.	<ul style="list-style-type: none"> • Develop a research paper, media production, or other event to demonstrate the impact of technology on careers in this cluster for the future. • Evaluate the business opportunities in this cluster and identify how these will be impacted by technological advancements and systems. • Identify the technological changes in the past five years that have affected the skill requirements for workers in this cluster.
		2. Analyze the technological systems that are apparent within the various pathways in this cluster.	<ul style="list-style-type: none"> • Compare the organizational structures of businesses in each of the pathways in this cluster. • Identify the technological systems and their effects on the pathways in this cluster. • Predict and highlight technological advancements for several pathways to illustrate the effect on work in careers in this cluster.



A/V Technology and Film Career Pathway (AR-AV)

<p>AR-AV</p> 	Standard	Performance Elements	Sample Indicators
<p>AR-AV 1</p>	<p>Describe the history, terminology, occupations and value of audio, video and film technology.</p>	<p>1. Explain the history of film.</p>	<ul style="list-style-type: none"> • Discuss the beginnings and evolution of audio/video production and film. • Describe how changing technology is impacting the audio/video and film industries. • Summarize how the history of film is related to the industry today.
		<p>2. Analyze various careers and their job descriptions in audio/video technology and film.</p>	<ul style="list-style-type: none"> • Discuss the responsibilities of producers, including budgets, schedules, personnel and tracking progress. • Describe the responsibilities of directors, including knowledge of story structure, script analysis, the relationship to the production team and the responsibilities of crewmembers. • Describe the duties of editors for audio, video and film productions. • Discuss the duties of editors related to audio and visual effects. • Describe various jobs associated with animation including communications, video and feature-length productions and Internet streaming. • Discuss the responsibilities of others in this field including lighting directors, cinematographers, videographers, sound engineers, stunt coordinators, special effects coordinators, productions specialists and other crewmembers.
		<p>3. Explain the value of having a broad general knowledge of fine arts and cultural and regional diversity.</p>	<ul style="list-style-type: none"> • Identify various types of audio and visual approaches that convey information or create an emotional impact. • Explain how knowledge is useful in dealing with projects covering a broad spectrum of events, regions, or cultures when research may not be possible. • Define the terminology associated with audio/video technology and film production.
<p>AR-AV 2</p>	<p>Demonstrate the use of basic tools and equipment used in audio, video and film production.</p>	<p>1. Describe the types of microphones, pick-up patterns and techniques required for a variety of audio presentations.</p>	<ul style="list-style-type: none"> • Identify microphones used for audio/video productions, music and theater. • Explain why audio pick-up differs in various types of microphones. • Describe the techniques to maximize sound performance using various audio formats.
		<p>2. Employ knowledge regarding audio equipment used for productions including basic recording equipment, equalizers, mixing consoles and quality-monitoring equipment.</p>	<ul style="list-style-type: none"> • Identify basic recording session equipment. • Select equipment required for specific types of audio productions. • Describe how an audio-mixing console, quality-monitoring equipment and basic recording session equipment are utilized. • Demonstrate techniques used for equalization.



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AR-AV 	Standard	Performance Elements	Sample Indicators
			<ul style="list-style-type: none"> • Demonstrate how to record and mix audio. • Explain the features and uses of digital audio formats.
		3. Illustrate the techniques required for synchronization of audio with video and multiple sound tracks.	<ul style="list-style-type: none"> • Describe synchronization processes. • Demonstrate how audio is synchronized with other audio or video.
		4. Write audio scripts for various types of programs.	<ul style="list-style-type: none"> • Identify the key elements required in audio scripts. • Explain how various styles of music can create a specific emotional impact. • Apply writing skills to the development of a short audio script.
		5. Apply knowledge of lighting requirements to a planned production.	<ul style="list-style-type: none"> • Identify types and placement of lighting fixtures for various lighting effects. • Demonstrate lighting techniques used for portable and studio productions. • Demonstrate operation of a master lighting panel and dimmer panel board.
		6. Demonstrate operation of video systems.	<ul style="list-style-type: none"> • Describe Mini DV, non-linear memory devices and HDTV. • Demonstrate operation of video cameras and switchers. • Demonstrate how to clean, tune and align video equipment. • Demonstrate video-system maintenance procedures. • Describe data signals and equipment for digital technology.
		7. Demonstrate camera operations and video signals.	<ul style="list-style-type: none"> • Describe how to frame and maintain picture composition. • Demonstrate focusing and adjusting images and performing pans and zooms. • Interpret video signals and production formats.
AR-AV 3	Demonstrate technical support skills for audio, video and film productions.	1. Demonstrate how to repair and service transmitting and receiving systems.	<ul style="list-style-type: none"> • Describe the need for temperature stability. • Describe the connection between receiver sensitivity and measurement of image rejection. • Demonstrate how to align the receivers and transceivers for operation. • Demonstrate basic preventative maintenance.
		2. Employ knowledge of wireless and wired transmission systems.	<ul style="list-style-type: none"> • Define wireless system components. • Define wired system components. • Describe how to repair transmitting, receiving and multi-channel systems.
		3. Demonstrate installation of cabling for audio/video productions.	<ul style="list-style-type: none"> • Demonstrate reading a signal flow diagram to determine cabling route. • Demonstrate pulling and securing cable. • Demonstrate how to document the routing.



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AR-AV 	Standard	Performance Elements	Sample Indicators
		4. Demonstrate the installation of a wireless audio/video system.	<ul style="list-style-type: none"> Identify how to determine if the power supply is adequate. Demonstrate placement of a wireless audio system for efficient operation. Describe a scenario that requires building support structures and tie-downs.
		5. Demonstrate how to troubleshoot audio/video system operations.	<ul style="list-style-type: none"> Identify the sequence required for troubleshooting. Conduct a troubleshooting sequence. Identify problems and potential solutions.
AR-AV 4	Design an audio, video and/or film production.	1. Apply knowledge of the critical elements in designing a production to activities in the pre-production stage.	<ul style="list-style-type: none"> Create a short script and identify the resources needed to begin the production. Identify the activities associated with pre-production, production and postproduction. Analyze the script and storyboard development processes for a successful production. Identify equipment, crew and cast requirements for a short, scripted audio/video. Identify several means to work within budget restraints. Conduct a casting day for the script. Execute production of the script. Critique a production to determine how the various elements resulted in a successful or unsuccessful presentation. Identify the linkage from each stage to the next in processes and activities. Identify the team roles required for completion of a production.
		2. Identify the basic functions and resources for editing an audio/video production.	<ul style="list-style-type: none"> Define editing related to audio/video productions. Describe the differences between offline and online editing related to low- and high-resolution input, respectively. Identify editing skills related to various delivery requirements including commercial broadcast and other forms of distribution. Describe the significance of digital technology and high-definition production and the required editing equipment. Describe skills required for editing using nonlinear systems. Describe various digital platforms such as H.264, Apple ProRes 422, Red, 3D and DVC Pro.
		3. Apply computer-based development in video production and editing, with an emphasis on digital technology.	<ul style="list-style-type: none"> Define terms associated with computer-based production including motion video: AVI, QuickTime and MPEG; and stills: JPEG and TIFF. Demonstrate how to use software for a simple video. Demonstrate using software to edit a video.