

# Arizona Department of Education

## Career and Technical Education

### Recommended Equipment List

**Program:** Music and Audio Production  
**CIP#:** 10.0200.00

NOTE: The following items and descriptions are the recommended equipment guidelines for each **CTE Music and Audio Production** program. Please note that this list of recommended items does not necessarily need to be supported financially by Federal Perkins or State Priority funding sources. In many cases, local school district funds are used to purchase items on a regular basis (i.e. furniture, consumables, etc.) Further, please understand that this is not an exhaustive list. Local program and business needs may necessitate the purchase of additional equipment and software resources, as may the rapidly-changing nature of the industry-specific technologies used in the program.

Please contact ADE-CTE Program Specialist for Business and Marketing Education & Communication Media Technologies,  
 Elena Sobampo (Elena.Sobampo@azed.gov), if you have questions regarding the appropriateness of any item you are considering for addition to your **CTE Music and Audio Production** program.

#### Recommended Equipment and Software

#### CLASSROOM

Item	Notes
*Computer workstation should include audio interface (two channels i/o minimum.) The audio interface should be licensed/approved by Digital Audio Workstation (DAW) manufacturer to work with DAW.	<p><i>Both macOS and Windows computer workstations are acceptable, provided the computer hardware, graphics hardware, sound/audio hardware, RAM, hard-disk space, and operating system software are capable of efficiently running all installed software applications and supporting any and all attached peripherals.</i></p> <p><i>Consult the product specifications for all program-specific software applications to ensure that computer workstations meet minimum recommended hardware requirements.</i></p>
External hard drive	<p><i>SSD preferred, or 7200 rpm or similar; no 5400 rpm.</i></p> <p><i>DAWs will run far more efficiently when using an external hard drive.</i></p>
Headphone distribution amp	<i>Allows multiple students to hear work simultaneously.</i>
Computer display	<i>Minimum 21-inch monitor capable of displaying full HD resolution or higher.</i>
Secure network storage space for digital files	<i>For projects and student portfolios; server- or cloud-based.</i>
Laser printer	<i>Color laser printer preferred. A multi-function laser printer (printer, photocopier, and scanner) would also be appropriate.</i>
Locking storage cabinets/storage space	<i>Should have enough capacity to safely store all program equipment and to allow for convenient access and equipment check-in/out.</i>
ProTools (industry-standard Digital Audio Workstation (DAW) software) or similar	<i>Software applications should be no more than one version behind the current release.</i>
Microsoft Office Suite, which includes Microsoft Word, Microsoft PowerPoint, Microsoft Excel, and other essential, industry-standard productivity software applications	<i>Software applications should be no more than one version behind the current release.</i>

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#### AUDIO CONTROL ROOM *(Can be used for broadcast radio applications)*

Item	Notes
Audio control room	<i>Separate, isolated workspace (not part of the main classroom/lab facility) interconnected with a Live Room (see below) to allow for professional studio workflow experience</i>
Audio interface	<i>8 channels minimum i/o; 32 channels or more preferred.</i>
Audio mix deck	<i>Channel configuration aligned with audio interface i/o. DAW control integration preferred (eliminates need for analog console functions.)</i>
Studio monitor speakers	<i>2.1 minimum configuration; 7.1 configuration preferred. Headphone distribution amp optional.</i>

#### LIVE ROOM

Item	Notes
Live room	<i>Separate, isolated workspace (not part of the main classroom/lab facility) interconnected with a Control Room (see above) to allow for professional studio workflow experience.</i>
Acoustic and electronic instruments, amplifiers, microphones, etc.	<i>Acoustic and electric guitars and bass, drum kit, and piano/keyboard are a good start.</i>
Headphone monitoring system	

#### LIVE PERFORMANCE SPACE

Item	Notes
Live performance space	<i>Separate workspace (can be attached to the main classroom/lab facility) allowing for a professional live sound workflow experience</i>
Audio mixer	<i>8 channels minimum i/o; 32 channels or more preferred. Interface to multitrack DAW recording preferred. Digital format preferred. (Eliminates need for additional outboard processing equipment, and allows for various pre-configuration setups.)</i>
Front-of-House (FOH) speakers for live PA	<i>Powered or unpowered with power amp.</i>
Monitor speakers for live PA	<i>Powered or unpowered with power amp. In-ear monitors optional.</i>

#### MICROPHONES

Item	Notes
Dynamic microphone	<i>Shure SM58 or similar.</i>

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Large diaphragm condenser microphone	<i>AKG Perception 420 or similar.</i>
Small diaphragm condenser microphone	<i>Rode NT4 or similar.</i>

#### OTHER

Item	Notes
DI box	
Computer headphones	
Sound treatment (absorption and diffusion) materials	<i>NOTE: Will not remedy issues of acoustic isolation (or lack thereof) but is essential to help to mitigate room acoustic anomalies.</i>
Assorted cables and related interfacing elements (XLR, 1/4" unbalanced, audio snakes, USB, electrical, etc.)	
Instrument stands	
High-quality transport/storage cases	<i>To safely and securely transport equipment and instruments to and from real-world work experiences.</i>
Locking storage cabinets	<i>Should have enough capacity to safely store all program equipment and to allow for convenient access and equipment check-in/out.</i>
Portable external hard drives and flash drives for file storage/backup and transfer	
Digital camera (including all required components and accessories: memory cards, cables, rechargeable batteries, carrying case, lenses, tripod, etc.)	<i>To document student work, process, performances, etc.</i>  <i>Point-and-shoot or DSLR; resolution of 12 megapixels or higher; able to capture HD video.</i>
Portable/laptop computer workstations	<i>To be used for CTSO competitions.</i>  <i>Specifications equal to the desktop workstations listed above.</i>

#### Additional Equipment and Software Options

Item	Notes
Dual computer display	<i>Extended desktop utilizing two monitors (minimum 21-inch monitor capable of displaying full HD resolution or higher.)</i>

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Additional music/audio creation and production software:  
 GarageBand (Apple Macintosh)  
 Ableton Live  
 Logic Pro (Apple Macintosh)  
 FL Studio  
 Musition  
 Assorted plug-ins and processors

Software applications should be no more than one version behind the current release.

#### ADDITIONAL CONTROL ROOM OPTIONS

Item	Notes
Internal DAW effects processor	
Outboard effects processor (EQ, compression, preamps, etc.)	

#### ADDITIONAL LIVE PERFORMANCE SPACE OPTIONS

Item	Notes
Performance space lighting and controls	

#### ADDITIONAL MICROPHONE OPTIONS

Item	Notes
Ribbon microphone	
Pressure microphone	

#### ADDITIONAL MUSICAL INSTRUMENT OPTIONS

Item	Notes
Acoustic drum kit with hardware and cymbals	<i>Preferred, unless volume is a factor due to lack of an isolated workspace.</i> <i>Electric drum kit (with amplifier) optional.</i>
Acoustic piano	<i>Preferred, unless volume is a factor due to lack of an isolated workspace.</i>
Digital piano/keyboard (with amplifier)	<i>88-key midi controller/keyboard for the production studio recommended.</i>
Electric guitar (with amplifier and effects)	<i>Acoustic guitar preferred for beginners - beware of volume concerns in open lab environment.</i>
Bass guitar (with amplifier)	
MIDI controller keyboard	<i>49-key keyboard for the classroom recommended.</i>
MIDI controller grid	<i>Assorted configurations, as budget allows.</i>
MIDI wind, string, etc.	<i>Assorted configurations, as budget allows.</i>
Synthesizer, sequencer, DJ turntable, etc.	

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Additional acoustic and electronic instruments, controllers, and devices.

#### ADDITIONAL SOFTWARE OPTIONS

Item	Notes
Adobe Creative Cloud, which includes Adobe Audition, Adobe Premiere, Adobe Photoshop, and other industry-standard creative desktop applications	<i>Software applications should be no more than one version behind the current release.</i>

\*Must meet the guidelines for specialized computing equipment as outlined on the "CTE Equipment Guidelines" at [www.azed.gov/cte/gi](http://www.azed.gov/cte/gi)