

Digital Audio Technology II

Level: 3

Career Cluster: Media Arts

Program: Lighting and Sound Technology

Pathway: Recording Arts Technology/Technician

Course Catalog Description

An advanced, digitally based course in which students refine professional audio production skills through recording, editing, mixing, sound design, and digital workflow practices using industry-standard digital audio workstations (DAWs), audio interfaces, plug-ins, virtual instruments, cloud-based collaboration tools, and professional file management techniques.

Summary

Course that expands students' skills in audio production through deeper exploration of industry-standard digital workflows, professional studio practices, and technical application. Students refine their ability to produce high-quality audio by working with digital audio workstations, audio interfaces, plug-ins, virtual instruments, MIDI, cloud-based collaboration platforms, and production tools while applying advanced techniques in editing, mixing, sound design, mastering preparation, and audio asset development. The course emphasizes efficient digital project organization, session file management, naming conventions, version control, metadata, and delivery preparation for streaming, broadcast, video, and online publishing. Students also apply professional standards, including ethical and legal responsibilities related to copyright, licensing, and industry regulations.

Notes

The revised course reflects a clear advancement from the original Digital Audio Technology II A/B model by transitioning from a broadly defined, skill-extension framework to a structured, standards-aligned Level 3 course with explicit, measurable student outcomes. The original course emphasized expanding technical production skills, career awareness, and efficiency practices such as portfolio building and professional networking, but it lacked the detailed organization and integration of professional workflows found in the updated version. The new course expands significantly by incorporating advanced digital audio workflows, file management systems, collaboration tools, and industry-relevant practices such as metadata, version control, and delivery for multiple platforms. In addition, it formalizes critical CTE components—including portfolio development, leadership, work-based learning, and a comprehensive final assessment project—which were previously implied rather than fully developed. Overall, the updated course shifts from a primarily technical focus to a more holistic, career-connected model that emphasizes real-world application, professional behaviors, and readiness for postsecondary education and the audio production industry.

Student Learning Outcomes

1. Career Exploration and Postsecondary Opportunities

Objective: *Students will evaluate and refine career pathways in recording arts and audio technology by analyzing professional roles, workplace expectations, certifications, ethics, legal responsibilities, and Colorado postsecondary education options in order to plan for advanced training and entry into the audio production industry.*

- 1) Identify employment opportunities in various fields with a focus in the area of recording arts technician/technology
 - a. Recognize the work typically performed, tools and technology used, and nature of work environments
 - b. Identify potential certifications within the careers
 - c. Find membership organizations associated with the careers
 - d. Understand the necessary education associated within the careers
- 2) Define professionalism within the context of recording arts technician/technology
 - a. Criticism and evaluation
 - b. Presentation
 - c. Assessment
- 3) Recognize laws, regulations, and ethics significant to the fields of recording arts technician/technology
- 4) Identify postsecondary opportunities offered in the state of Colorado
 - a. Technical college, community college, 4-year institutions
 - b. Certificates, associates, bachelor, and advanced degree opportunities

2. Laws and Regulations

Objective: *Students will apply ethical, legal, and regulatory standards by demonstrating respect for intellectual property, complying with copyright and fair-use laws, following industry and governing-authority regulations, and evaluating the societal impacts of the audio production industry.*

- 5) Demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas.
- 6) Model respect for intellectual property.
- 7) Analyze the ethical impact of the audio production industry on society.
- 8) Understand and comply with all copyright and fair use laws.
- 9) Understand and comply with all applicable rules and regulations of the associated governing authority such as the Federal Communications Commission (FCC), local school district, or client.

3. Technical Skills for Efficiency

Objective: *Students will apply professional digital workflow and productivity strategies by using time-management techniques, cloud-based collaboration tools, and technology systems to efficiently plan, organize, version, back up, and complete advanced audio production tasks.*

10) Employ planning and time-management skills to complete digital audio production tasks efficiently.

11) Use digital tools, cloud-based platforms, file organization systems, and backup/versioning practices to enhance productivity and support collaborative audio production workflows.

4. Audio Production Industry

Objective: *Students will analyze the audio production industry by examining career pathways, professional roles, industry terminology, historical development, emerging technologies, and evolving practices across broadcast, music, film, animation, gaming, and live sound environments.*

12) Identify various career pathways and job opportunities in the audio production industry.

13) Understand the roles of various industry audio professionals such as producers, editors, engineers, and talent as they apply to specific audio production career pathways.

14) Understand the history, current practices, and future trends for audio production careers such as radio and television broadcasting, video and film, animation and game design, music production, and live sound.

15) Describe how the changing technology is impacting the audio industry.

16) Define and appropriately use terminology associated with the audio production industry.

5. Audio Production Equipment

Objective: *Students will demonstrate proficient use of professional audio equipment by selecting, operating, and integrating microphones, consoles, digital interfaces, processing tools, recording devices, cabling systems, and speaker types within studio, broadcast, live sound, and digitally based production environments.*

17) Understand types and applications of microphones such as dynamic, condenser, ribbon, pressure zone (PZM), universal serial bus (USB), and wireless.

18) Understand pick-up patterns and applications of microphones such as cardioid, omnidirectional, and figure eight.

19) Demonstrate the operation and application of audio consoles (mixers) such as broadcast consoles, live sound consoles, and recording consoles.

20) Demonstrate the operation and application of audio processing equipment or software such as equalizer (EQ), dynamic compressor, noise gate, band pass filters, reverb, and delays.

21) Demonstrate the operation and application of analog and digital audio recording devices such as handheld recorders, USB interfaces, multi-track devices, and digital audio workstations (DAWs), including proper digital session setup for sample rate, bit depth, latency, and routing.

22) Demonstrate the application of audio interconnect cabling and connectors such as XLR balanced, TRS balanced, TS unbalanced, RCA, 1/4" TRS/TS, and mini TRS/TS.

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24) Use the types and applications of audio speakers such as broadcast monitors, studio monitors, and live sound speakers.

6. Audio Production Elements

Objective: *Students will apply advanced audio production techniques by manipulating stems, production elements, technical effects, and compression formats to shape emotional impact, clarity, and quality in audio productions.*

25) Consistently identify key elements (stems) of an audio production such as dialogue, sound effects, music, and environmental.

26) Use music styles, sound effects, or vocal performances to create a specific emotional impact.

27) Use key technical elements of audio production for effect such as panning, ducking, track doubling, retiming, and auto-tune.

28) Use digital audio codecs and compression standards such as Waveform audio (WAV), MP3, and advanced audio coding (AAC).

7. Assets for Production Projects

Objective: *Students will develop and manage production assets by writing audio scripts, creating or sourcing recorded and synthesized audio, organizing digital files and folders, documenting metadata, and securing proper permissions to support professional-quality audio projects.*

29) Use key elements required in audio scripts.

30) Consistently apply writing skills to develop an audio script.

31) Create or obtain required audio assets through recording, synthesis, imports, downloads, or permissions, and organize them using consistent digital file naming, folder structures, and metadata practices.

8. Digital Audio Workstation and Audio Editing

Objective: *Students will produce and prepare advanced digital audio projects using digital audio workstations (DAWs) by recording and importing audio and MIDI content, managing track structures, applying editing tools, plug-ins, automation, session organization, and exporting projects for multiple digital delivery formats and online distribution.*

32) Demonstrate how to record, import, synchronize, and manage various types of digital content such as audio files, MIDI data, loops, stems, and automation within a DAW.

33) Use types and applications of audio tracks such as audio track, instrument track, master track, auxiliary track, and global attributes track.

34) Use audio editing tools and transitions such as cut, trim, and fade.

35) Demonstrate the use and applications of software plug-ins such as EQ, dynamic compression, reverb, and software instruments.

36) Demonstrate the use and application of software automation.

36.5) Organize DAW sessions using professional naming conventions, color coding, folder structures, asset management, and version control to support efficient editing, revision, and collaboration.

37) Use various digital delivery formats and publishing methods such as WAV, MP3, AAC, broadcast exports, video/audio synchronization files, cloud sharing, and online distribution platforms.

9. Portfolio Development

Objective: *Students will develop and curate a professional digital audio portfolio by organizing advanced production work, demonstrating technical mastery and creative growth, and presenting projects for postsecondary and industry readiness.*

38) Collect, organize, and archive completed audio projects using professional file formats, naming conventions, metadata, and version control practices.

39) Select and refine portfolio artifacts that demonstrate advanced technical skills, creative decision-making, and production quality.

40) Present and evaluate portfolio work to communicate artistic intent, technical processes, and readiness for postsecondary or industry opportunities.

10. Leadership

Objective: *Students will demonstrate leadership in advanced audio production environments by facilitating collaboration, managing workflows, making ethical decisions, and contributing to productive, inclusive team processes.*

41) Demonstrate leadership behaviors such as initiative, accountability, adaptability, and ethical decision-making during production projects.

42) Apply collaborative leadership skills to organize roles, manage timelines, and support effective communication within audio production teams.

43) Facilitate critique and feedback processes to guide team improvement and maintain respectful, inclusive production environments.

11. Work-Based Learning

Objective: *Students will apply advanced technical and professional skills through work-based learning experiences that connect classroom audio production to real-world industry expectations.*

44) Participate in work-based learning experiences such as client-based projects, internships, job shadows, or industry collaborations related to audio production.

45) Demonstrate professional workplace behaviors including communication, time management, problem-solving, and digital collaboration skills.

46) Document and evaluate work-based learning experiences to assess career readiness, technical growth, and postsecondary goals.

12. Final Assessment Project

Objective: *Students will complete a comprehensive digital audio production project that demonstrates advanced technical proficiency, creative problem-solving, professional workflow, and the ability to present and defend production decisions.*

47) Plan, produce, and finalize a digital audio project integrating recording, editing, sound design, mixing, and delivery for a specified purpose or client.

48) Present and defend the final project by explaining artistic intent, technical processes, problem-solving strategies, and production decisions using industry terminology.

13. Career and Technical Student Organizations

Objective: *Using the CTSO Resource Document, chapter activities will provide some of the best opportunities CTSO members will have to learn by doing. A successful program of work creates a positive learning atmosphere in the classroom. CTSO members learn how to accept responsibility, work as a team, manage a budget, and handle success and failure. Per the CTE Admin Handbook, CTSOs are embedded into curriculum.*

Professional Development

Prepare each member for entry into the workforce and provide a foundation for success in a career. Becoming a professional does not stop with acquiring a skill, but involves an increased awareness of the meaning of good citizenship and the importance of labor and management in the world of work.

Community Service

Promote and improve goodwill and understanding among all segments of the community through services donated by CTSO chapters, and to instill in its members a lifetime commitment to community service.

Business & Industry Connections

Increase awareness of quality job practices and attitudes, and increase the opportunities for employer engagement and eventual employment.

Financial Leadership

Plan and participate in activities to allow all members to carry out the chapter's projects. Educate members on their own personal finance for current and future success.

Public Relations

Make the general public aware of the good work that students in career and technical education are doing to better themselves and their community, state, nation, and world.

Social Activities

To increase cooperation in the school and community through activities that allow CTSO members to get to know each other in something other than a business or classroom setting.

Academic Standards Alignment

Colorado CTE courses are required to integrate academic and essential skills into course content. The following academic standards have been identified as aligned to this course and should be integrated throughout instruction.

[CO CTE Academic Standards Resources](#) (Rubrics, integration strategies, etc)

[CDE Colorado Academic Standards Online](#) (Online standards lookup tool)

Note: Mathematics and Science standards will be added in the future. Visit the [Colorado Academic Standards](#) page for the most current version.

Reading, Writing and Communicating Crosswalk

Course: Digital Audio Technology II

Colorado Academic Standards – Reading, Writing, and Communicating

Standard	Prepared Graduate Competency	Description	Course Evidence / Alignment
Standard 1: Oral Expression and Listening	Prepared Graduate 1 – Collaboration	Collaborate effectively as group members or leaders who listen actively and respectfully; pose thoughtful questions, acknowledge the ideas of others; and contribute ideas to further the group's attainment of an objective.	Students collaborate in advanced audio production teams, communicate during sessions, and engage in critique to refine recording and mixing projects.
Standard 1: Oral Expression and Listening	Prepared Graduate 2 – Oral Presentations	Deliver effective oral presentations for varied audiences and varied purposes.	Students articulate technical processes, troubleshoot audio issues, and present completed projects and professional portfolios.
Standard 2: Reading for All Purposes	Prepared Graduate 4 – Informational Texts	Read a wide range of informational texts to build knowledge and to better understand the human experience.	Students read and apply advanced technical manuals, industry documentation, signal flow charts, copyright law, and FCC guidelines.

Standard 2: Reading for All Purposes	Prepared Graduate 5 – Language in Context	Understand how language functions in different contexts, command a variety of word-learning strategies to assist comprehension, and make effective choices for meaning or style when writing and speaking	Students apply precise industry- specific language in professional, academic, and client-facing audio production contexts.
Standard 3: Writing and Composition	Prepared Graduate 7 – Informational Writing	Craft informational/explanatory texts using techniques specific to the genre.	Students produce written documentation such as session logs, production plans, portfolios, and technical explanations.
Standard 3: Writing and Composition	Prepared Graduate 9 – Writing Process	Demonstrate mastery of their own writing process with clear, coherent, and error-free polished products.	Students revise and finalize written technical documentation and professional materials for clarity and accuracy.
Standard 4: Research Inquiry and Design	Prepared Graduate 10 – Research & Ethics	Gather information from a variety of sources; analyze and evaluate its quality and relevance; and use it ethically to answer complex questions.	Students research emerging audio technologies, evaluate sources, follow copyright and intellectual property laws, and apply ethical standards in professional audio work.

Free Resource Links

1. Career Exploration and Postsecondary Opportunities

- My Next Move (advanced audio careers, job outlooks, required skills and education)
<https://www.mynextmove.org/>
- CareerOneStop – Audio and Sound Careers (certifications, training programs, industry pathways)
<https://www.careeronestop.org/>
- Bureau of Labor Statistics – Audio and Video Technicians (professional roles, wages, work environments)
<https://www.bls.gov/ooh/media-and-communication/audio-and-video-technicians.htm>
- Audio Engineering Society (professional organizations, certifications, industry standards)
<https://www.aes.org/>

2. Laws and Regulations

- Creative Commons (copyright, licensing, attribution, fair use)
<https://creativecommons.org/>
- U.S. Copyright Office – Education Resources (copyright law, fair use guidance)
<https://www.copyright.gov/education/>
- Federal Communications Commission (broadcast regulations, media compliance)
<https://www.fcc.gov/>
- Stanford Copyright and Fair Use Center (ethical media use, copyright explanations)
<https://fairuse.stanford.edu/>

3. Technical Skills for Efficiency

- Trello Guides (project planning, task management, workflow efficiency)
<https://trello.com/guide>
- Google Applied Digital Skills (productivity tools, workflow organization)
<https://applieddigitalskills.withgoogle.com/>
- Notion Guides (project organization, documentation, time management)
<https://www.notion.so/help>
- MindTools – Time Management (planning strategies, productivity techniques)
<https://www.mindtools.com/time-management>

4. Audio Production Industry

- Sound on Sound (industry trends, professional workflows, audio history)
<https://www.soundonsound.com/>
- MusicTech (audio industry news, emerging technologies, terminology)
<https://musictech.com/>
- No Film School – Sound (audio for film, games, animation, and multimedia)
<https://nofilmschool.com/>

- Berklee Online Take Note Blog (music and audio industry practices, careers)
<https://online.berklee.edu/takenote/>

5. Audio Production Equipment

- Shure Audio Institute (microphones, pickup patterns, professional equipment)
<https://www.shure.com/en-US/shure-audio-institute>
- Sweetwater InSync (consoles, processing tools, cabling, audio systems)
<https://www.sweetwater.com/insync/>
- Yamaha Pro Audio Learning (live sound, studio consoles, signal processing)
<https://training.yamaha.com/>
- Audio University (audio equipment, signal flow, system integration)
<https://audiouniversityonline.com/>

6. Audio Production Elements

- iZotope Learn (stems, emotional impact, mixing techniques, audio analysis)
<https://www.izotope.com/en/learn.html>
- BBC Bitesize – Sound (production elements, sound manipulation concepts)
<https://www.bbc.co.uk/bitesize/topics/zvsfr82>
- SoundGym (critical listening, frequency recognition, mix awareness)
<https://www.soundgym.co/>
- Explain That Stuff – Sound (audio perception, technical sound concepts)
<https://www.explainthatstuff.com/sound.html>

7. Assets for Production Projects

- FreeSound (licensed sound effects, creative audio assets)
<https://freesound.org/>
- BBC Sound Effects Library (professional sound effects for education)
<https://sound-effects.bbcwind.co.uk/>
- Pixabay Audio (royalty-free music and sound effects)
<https://pixabay.com/music/>
- Mixkit Audio (music and sound assets for media projects)
<https://mixkit.co/free-sound-effects/>

8. Digital Audio Workstation and Audio Editing

- Audacity Tutorials (advanced editing, plugins, exporting audio)
<https://manual.audacityteam.org/>
- REAPER Documentation (advanced DAW workflows, automation, routing)
<https://www.reaper.fm/documentation.php>
- Ableton Live Help View (editing, automation, nonlinear production)
<https://www.ableton.com/en/help/>
- MusicRadar – Audio Production Tutorials (DAWs, plugins, editing techniques)
<https://www.musicradar.com/>

9. Portfolio Development

- SoundCloud (publishing audio projects, professional portfolios)
<https://soundcloud.com/>
- Behance – Audio and Sound Design (creative portfolio examples)
<https://www.behance.net/>
- Adobe Portfolio (portfolio creation, professional presentation)
<https://portfolio.adobe.com/>
- Berklee Online Take Note (portfolio strategies, career readiness)
<https://online.berklee.edu/takenote/>

10. Leadership

- MindTools – Leadership Skills (team leadership, decision-making, communication)
https://www.mindtools.com/pages/main/newMN_LDR.htm
- SkillsYouNeed – Leadership and Teamwork (collaboration, interpersonal skills)
<https://www.skillsyouneed.com/leadership/>
- Edutopia – Student Leadership (project leadership, collaboration strategies)
<https://www.edutopia.org/topic/student-leadership>
- LinkedIn Learning Blog (professional leadership, workplace communication)
<https://www.linkedin.com/business/learning/blog>

11. Work-Based Learning

- CareerOneStop – Work-Based Learning (career readiness, workplace experiences)
<https://www.careeronestop.org/>
- Advance CTE – Work-Based Learning Toolkit (industry partnerships, WBL strategies)
<https://careertech.org/work-based-learning>
- NACE Career Readiness Competencies (employability skills, workplace expectations)
<https://www.naceweb.org/career-readiness/competencies/>
- PBS LearningMedia – Workplace Skills (communication, teamwork, real-world applications)
<https://www.pbslearningmedia.org/>

12. Final Assessment Project

- Adobe Creative Cloud Tutorials (advanced production, multimedia workflows)
<https://helpx.adobe.com/creative-cloud/tutorials-explore.html>
- Canva Design School (presentation, storytelling, visual communication)
<https://www.canva.com/learn/>
- Google Applied Digital Skills (project planning, collaboration, communication)
<https://applieddigitalskills.withgoogle.com/>
- TED-Ed Student Talks (presentation skills, explaining ideas professionally)
https://ed.ted.com/student_talks



Technology Student Association – National Competitive Events

Music Production

Objective: *Students will compose, record, edit, mix, document, and present an original music production that meets TSA Music Production requirements for creativity, technical quality, copyright compliance, and presentation.*

- Research the annual TSA Music Production theme and develop an original musical concept that responds to the challenge.
- Plan the production by identifying the intended mood, structure, instrumentation, audience, audio assets, and technical requirements.
- Create or record original musical elements using microphones, MIDI, software instruments, loops, live audio sources, or digital audio tools.
- Arrange tracks such as instruments, vocals, effects, auxiliary tracks, master tracks, and automation into a complete musical production.
- Edit and mix the production using panning, ducking, EQ, compression, noise gates, reverb, delay, retiming, fades, and volume balancing.
- Document the production process, including software/hardware used, original assets, permissions, editing decisions, and revisions.
- Present the final music production to judges and explain the creative intent, technical process, audio choices, and response to the annual theme.

Resources

- Technology Student Association – Music Production competition guidelines
<https://tsaweb.org/competitions-programs/tsa/themes-problems>
- BandLab for Education – Browser-based music production tools
<https://edu.bandlab.com/>
- Soundtrap for Education – Online music and audio production
<https://www.soundtrap.com/edu/>
- Audacity – Free audio recording and editing software
<https://www.audacityteam.org/>



Technology Student Association – National Competitive Events

Audio Podcasting

Objective: *Students will research, script, record, edit, mix, publish, and present an original audio podcast that meets TSA Audio Podcasting requirements for content, storytelling, technical production, copyright compliance, and presentation.*

- Research the annual TSA Audio Podcasting theme and develop a focused podcast concept for a specific audience.
- Write a podcast script, outline, or episode plan that organizes narration, interviews, transitions, and supporting audio.
- Record original audio using appropriate microphones, pickup patterns, mixers, recording devices, levels, and sound-gathering techniques.
- Create or obtain audio assets such as narration, dialogue, interviews, music, sound effects, and environmental sound while following copyright and permission requirements.
- Edit and mix the podcast using trimming, fades, volume balancing, EQ, compression, noise reduction, panning, ducking, and transitions.
- Export and submit the finished podcast in the required digital format according to TSA event procedures.
- Present the podcast to judges and explain the story concept, production process, sound choices, technical decisions, and theme connection.

Resources

- Technology Student Association – Audio Podcasting competition guidelines
<https://tsaweb.org/competitions-programs/tsa/themes-problems>
- Audacity – Free audio recording and editing software
<https://www.audacityteam.org/>
- NPR Training – Audio journalism and podcast storytelling resources
<https://training.npr.org/>
- Spotify for Podcasters – Podcast creation and publishing tools
<https://podcasters.spotify.com/>



Technology Student Association – National Competitive Events

Digital Video Production

Objective: *Students will plan, produce, document, and present an original digital video that meets TSA Digital Video Production requirements for storytelling, technical production, copyright compliance, and interview presentation.*

- Research the annual TSA Digital Video Production theme and develop an original video concept.
- Analyze the story, audience, purpose, sound needs, visual style, and production requirements before recording.
- Create a storyboard, script, production plan, or sound plan that guides the production process.
- Capture or create original audio assets such as dialogue, narration, music, sound effects, and environmental sound.
- Mix and synchronize audio with video using volume balancing, panning, ducking, EQ, compression, fades, transitions, reverb, delay, and sound-quality adjustments.
- Document the production through a portfolio that includes purpose, storyboard, script, hardware/software list, references, permissions, consent forms, and work log.
- Participate in an interview explaining the video concept, sound design, technical decisions, and creative choices.

Resources

- Technology Student Association – Digital Video Production competition guidelines
<https://tsaweb.org/competitions-programs/tsa/themes-problems>
- Adobe Premiere Pro – Video and audio editing tools
<https://www.adobe.com/products/premiere.html>
- DaVinci Resolve – Video editing, color, audio, and post-production tools
<https://www.blackmagicdesign.com/products/davinciresolve>
- Audacity – Free audio recording and editing software
<https://www.audacityteam.org/>