

MUSIC TECHNOLOGY II

Open to all students in grades 9 -12 who have successfully completed Music Technology I, this course is designed for those seeking further knowledge and experience in Audio and Recording technology. Topics covered include: digital recording and midi sequencing; audio engineering and editing; effects processing and microphone technique; music business and commercial production. Connecting music and technology, students will use digital audio workstations, a variety of recording studio equipment and Protools music production software. This is a one-semester class that meets twice per 4 day rotation.

Prerequisite: successful completion of **Music Technology I**

Course Overview

Course Goals

Students will have the ability to understand and engage with music in a number of different ways, including the **creative, responsive and performative** artistic processes. They will have the ability to create, edit, and enhance music performances using both hardware and computer software. They will attain literacy in digital / audio recording.

Artistic Processes

- Create
- Perform (Present/Produce)
- Respond
- Connect

Anchor Standards

- Generate and conceptualize artistic ideas and work
 - Organize and develop artistic ideas and work.
 - Refine and complete artistic work.
 - Develop and refine artistic work for presentation.
 - Convey meaning through the presentation of artistic work
 - Apply criteria to evaluate artistic work.
- Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

Course Skill Objectives

Students will be able to:

- Create a musical project using midi sequencing
- Record and edit music using multi track digital audio workstation (DAW).
- Analyze acoustic properties.
- Engineer and design sound reinforcement.
- Troubleshoot and resolve signal flow audio connections.
- Design and create a commercial audio production
- Identify connections between music and music technology to related commercial industries and careers.

Units of Study

- I. Introduction to Protools 3 - 4 weeks
- II. Step Sequencing and MIDI in Protools 4 – 5 weeks
- III. Audio Editing in Protools 4 - 5 weeks
- IV. Audio Production in Protools 6 weeks

Assessments

Step Sequencing in Protools

- Step Sequencing
- MIDI Song Sequencing

Audio Editing in Protools

- Audio Loop Editing
- Dialogue Edit
- Radio Spot

Audio Production in Protools

- Cover Song
- Sound to Video

Step Sequencing and MIDI in Protocols

Creating rhythmically organized, loop based song sequences, using music production software.

Skill Objectives

- Students will be able to operate loop based sequencing software.
- Students will be able to create measure/beat based patterns and assemble into song form

Responding <i>Understanding and evaluating how the arts convey meaning.</i>	Performing (Present/Produce) <i>Realizing artistic ideas and work through interpretation and presentation.</i>	Creating <i>Conceiving and developing new artistic ideas and work.</i>
<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • The personal evaluation of musical works and performances is informed by analysis, interpretation, and established criteria based on the elements of music. <p><u>Essential Question</u></p> <ul style="list-style-type: none"> • How do we judge the quality of musical work(s) and performances? <p>Process Components: Analyze, Evaluate</p>	<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • To express their musical ideas, musicians analyze, evaluate, and refine their performance over time through openness to new ideas, persistence, and the application of appropriate criteria. • Musicians judge performance based on criteria that vary across time, place and cultures. <p><u>Essential Questions</u></p> <ul style="list-style-type: none"> • How do musicians improve the quality of their performance? • When is a performance judged ready to present? <p>Process Components: Analyze, Rehearse, Evaluate, Refine, Present</p>	<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • Musicians’ creative choices are influenced by their expertise, context, and expressive intent. • Musicians evaluate, and refine their work through openness to new ideas, persistence, and the application of appropriate criteria. <p><u>Essential Questions</u></p> <ul style="list-style-type: none"> • How do musicians make creative decisions? • How do musicians improve the quality of their creative work? <p>Process Components: Plan and Make, Evaluate and Refine</p>
<p>Instructional Strategies/Process Projects: Step Sequencing, Song Sequencing</p> <ul style="list-style-type: none"> • Students will analyze and understand how beats and measures are 	<p>Instructional Strategies/Process Projects: Step Sequencing, Song Sequencing Using MIDI</p> <ul style="list-style-type: none"> • Students will rehearse, refine, play and record, in real time, midi 	<p>Instructional Strategies/Process Projects: Step Sequencing, Song Sequencing Using MIDI</p> <ul style="list-style-type: none"> • Students will work alone or in pairs to create a short piece in verse/chorus

<p>organized in piano roll and step sequencer format.</p> <ul style="list-style-type: none"> • Students will analyze and evaluate their own projects for appropriate rhythmic alignment and accuracy, quantizing. • Students will analyze and evaluate peer projects for appropriate rhythmic alignment and accuracy. 	<p>instrument tracks using the electronic keyboard.</p> <ul style="list-style-type: none"> • Students will analyze and evaluate their recordings and quantize rhythmic inaccuracies. • Students will upload projects and present to the class. 	<p>form with a minimum of 2 tracks (drums and bass) using a step sequencer, and appropriate use of grid structure and rhythmic patterns.</p> <ul style="list-style-type: none"> • Students will evaluate and refine their compositions to meet project requirements. • Students will create in step time and in real time, various instrumental music tracks.
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Assessments:

- Protocols Step Sequencing
- Protocols Song Sequencing
- Generic Project checklist

Audio Editing in Protocols

Skill Objectives

- Students will be able to operate music production software.
- Students will be able to connect and set levels for various components of a digital audio workstation.
- Students will be able to record/import audio into music production software.
- Students will be able to edit audio within the digital domain.
- Students will be able to mix multiple tracks to one stereo master.

Responding <i>Understanding and evaluating how the arts convey meaning.</i>	Performing (Present/Produce) <i>Realizing artistic ideas and work through interpretation and presentation.</i>	Creating <i>Conceiving and developing new artistic ideas and work.</i>
<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • The personal evaluation of musical works and performances is informed by analysis, interpretation, and established criteria based on the elements of music. <p><u>Essential Question</u></p> <ul style="list-style-type: none"> • How do we judge the quality of musical work(s) and performances? <p>Process Components: Analyze, Evaluate, Refine</p>	<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • To express their musical ideas, musicians analyze, evaluate, and refine their performance over time through openness to new ideas, persistence, and the application of appropriate criteria. • Musicians judge performance based on criteria that vary across time, place and cultures. <p><u>Essential Questions</u></p> <ul style="list-style-type: none"> • How do musicians improve the quality of their performance? • When is a performance judged ready to present? <p>Process Components: Analyze, Rehearse, Evaluate, Refine, Present</p>	<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • Musicians’ creative choices are influenced by their expertise, context, and expressive intent. • Musicians evaluate, and refine their work through openness to new ideas, persistence, and the application of appropriate criteria. <p><u>Essential Questions</u></p> <ul style="list-style-type: none"> • How do musicians make creative decisions? • How do musicians improve the quality of their creative work? <p>Process Components: Plan and Make, Evaluate and Refine</p>
<p>Instructional Strategies/Process Projects: <i>Dialogue Edit, Radio Spot, Audio Loop Editing</i></p> <ul style="list-style-type: none"> • Students will listen to, analyze, evaluate and refine their work based on defined project parameters 	<p>Instructional Strategies/Process Project: <i>Dialogue Edit</i> Students will work alone or in pairs to:</p> <ul style="list-style-type: none"> • record (analyze, rehearse. Evaluate, refine and present) a given script 	<p>Instructional Strategies/Process Project: <i>Radio Spot</i> Students will work alone or in pairs to:</p> <ul style="list-style-type: none"> • Create a commercial • Record an existing radio spot adhering to a specific time length

<ul style="list-style-type: none"> • Students will listen to, analyze, and evaluate the work of their peers based on defined project parameters. 	<ul style="list-style-type: none"> • edit the audio using various tools available in a digital audio workstation • re-arrange and refine the original script to change the meaning. 	<ul style="list-style-type: none"> • Add sound effects • Add underscore • Evaluate and refine their work as necessary • Culminate with a final mix down to a stereo audio master. <p>Project: <i>Audio Loop Editing</i> Students will work alone or in pairs to:</p> <ul style="list-style-type: none"> • Create a loop based composition • Select prerecord loops • Manipulate the loops to create an original 64+ measure composition that <ul style="list-style-type: none"> ○ matches master tempo ○ changes tempo ○ changes pitch
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Assessments:

- Protocols Audio Loop Editing
- Protocols Dialogue Edit
- Protocols Radio Spot

Audio Production in Protocols

Skill Objectives

- Students will record a “cover” of a popular song using a digital audio workstation.
- Students will integrate live instruments, vocals, and midi tracks in one project.
- Students will operate music production software.
- Students will record and edit midi tracks.
- Students will automate various parameters of midi/audio tracks
- Students will mix and export to stereo master

Responding <i>Understanding and evaluating how the arts convey meaning.</i>	Performing (Present/Produce) <i>Realizing artistic ideas and work through interpretation and presentation.</i>	Creating <i>Conceiving and developing new artistic ideas and work.</i>
<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • The personal evaluation of musical works and performances is informed by analysis, interpretation, and established criteria based on the elements of music. <p><u>Essential Question</u></p> <ul style="list-style-type: none"> • How do we judge the quality of musical work(s) and performances? <p>Process Components: Analyze, Evaluate, Refine</p>	<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • To express their musical ideas, musicians analyze, evaluate, and refine their performance over time through openness to new ideas, persistence, and the application of appropriate criteria. • Musicians judge performance based on criteria that vary across time, place and cultures. <p><u>Essential Questions</u></p> <ul style="list-style-type: none"> • How do musicians improve the quality of their performance? • When is a performance judged ready to present? <p>Process Components: Analyze, Rehearse, Evaluate, Refine, Present</p>	<p><u>Enduring Understanding</u></p> <ul style="list-style-type: none"> • Musicians’ creative choices are influenced by their expertise, context, and expressive intent. • Musicians evaluate, and refine their work through openness to new ideas, persistence, and the application of appropriate criteria. <p><u>Essential Questions</u></p> <ul style="list-style-type: none"> • How do musicians make creative decisions? • How do musicians improve the quality of their creative work? <p>Process Components: Plan and Make, Evaluate and Refine</p>

<p>Instructional Strategies/Process Projects: <i>Cover Song, Sound to Video</i></p> <ul style="list-style-type: none"> • Students will listen to, analyze, evaluate and refine their work based on defined project parameters • Students will listen to, analyze, and evaluate the work of their peers based on defined project parameters 	<p>Instructional Strategies/Process Project: <i>Cover Song</i></p> <p>Students will work in groups to:</p> <ul style="list-style-type: none"> • record and produce a “cover” of an existing popular recording • Analyze song structure for rhythmic, harmonic, melodic and textural components • Create basic rhythm tracks using midi • Rehearse, evaluate and refine their audio performance prior to recording • Record audio tracks • Refine recording through editing, processing and automation. • Present final stereo mix <p><i>The objective is to reproduce the original as closely as possible including the vocals, given student/class musical proficiency. The project culminates with a final mix down to a stereo audio master.</i></p>	<p>Instructional Strategies/Process Project: <i>Sound to Video</i></p> <p>Students will work alone or in pairs to replace and create the entire audio track, including sound effects, dialogue, and music for an existing television commercial and sync it with the video in a digital audio workstation, evaluating and refining their work as necessary.</p> <ul style="list-style-type: none"> • Import existing commercial • Remove audio • Create and record replacement dialogue • Create and record underscore • Create and record sound effects • Perform and record “foley” sound effects • Mix and export to stereo/video format • Present to class
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Assessments:

- Protools Cover Song
- Protools Sound to Video

Fairfield Public Schools
Assessment Pack
Music Technology II

Unit II Assessments:

Step sequencing and Midi using Protools

Date _____

Instructions to the student:

Students will use a step sequencer and piano roll in Protools to recreate basic drum and bass patterns. Your teacher will supply you with a packet of common drum patterns (in many styles) as well as a packet of famous bass-lines for you to choose from. You will be expected to recreate them completely and accurately.

For the third grade you will be expected to use a step sequence to organize multiple patterns into standard musical phrase lengths. You will be given a packet describing song form and musical structure. Your project should follow traditional verse/chorus form. For this project you may use the supplied bass-lines and drum patterns from above or you may create your own.

Project 1: Step Sequencing

	1 Limited	2 Developing	3 Competent	4 Advanced	Not Applicable
Recreation of given drum pattern					
Recreation of given bass pattern					
Combination of patterns in verse/chorus form					

Instructions to the student:

For this project you will use a step sequencer to create a 32 bar music work in song form. The project should include a minimum of drum and bass tracks but now you may add additional parts. Your piece should; demonstrate an appropriate usage of grid structure, provide steady rhythmic patterns, and follow good song form/structure.

Project 2: MIDI Song Sequencing

Song Title _____

	1 Limited	2 Developing	3 Competent	4 Advanced	Not Applicable
Use of Grid Structure					
Steady Rhythmic Patterns					
Song Structure/Form					
Bass & Drum Tracks					
Additional Parts					

Comments:

2 Music Tech II

NAME(s): _____

Unit III Assessment:

Audio Editing using Protools

Date _____

Instructions to the student:

Students will use Protools software and hardware to emulate song production in a profession recording studio environment. This project takes an existing song from basic tracks through final mix down and production of a finished CD or other media. Your teacher will provide you with the song as well as accompanying information that you may need in order to recreate it. This is a group project. Students will function as both the “Talent” as well as the technical staff on a rotating basis. This project will encompass all techniques demonstrated previously. Project must include audio instrument tracks, midi tracks, vocal tracks, punch-in recording, and effects processing. Students will be assessed individually on their work and abilities in the various positions. Students will not be assessed on their instrumental and vocal abilities..

PROJECT TITLE: _____

Overall Use of Technology	0 1 2 3 4	NA
Use of Midi	0 1 2 3 4	NA
Use of FX	0 1 2 3 4	NA
Use of Audio	0 1 2 3 4	NA
Use of Effects Processing	0 1 2 3 4	NA
Microphone technique	0 1 2 3 4	NA
Quality of Recording	0 1 2 3 4	NA
Track Layout and Labeling	0 1 2 3 4	NA
Engineering	0 1 2 3 4	NA
Production	0 1 2 3 4	NA
Performance	0 1 2 3 4	NA
Musical Score	0 1 2 3 4	NA
Quantity of Sound Cues	0 1 2 3 4	NA
Originality	0 1 2 3 4	NA
Final Mix	0 1 2 3 4	NA
Compare to Professional Recording	0 1 2 3 4	NA

- 0 = Did not demonstrate skill
- 1 = Limited
- 2 = Developing
- 4 = Competent
- 5 = Advanced
- NA = Not applicable

_____ / out of _____

Music Tech II

NAME(s): _____

Unit III Assessment:

Introduction to Audio Editing in Protools

Date _____

Instructions to the student:

You will be given a written script by your teacher. You will record (with your voice) the “text” of the script into an audio editing program. You will then edit/rearrange the audio using various tools available in a digital audio workstation to “rewrite the original script into something new”.

Project 1: *Dialogue Edit*

	1 Limited	2 Developing	3 Competent	4 Advanced	Not Applicable
Recording of Original script					
Audio Editing					
Assembly					

Comments:

Project 2: *Audio Loop Edit*

	1 Limited	2 Developing	3 Competent	4 Advanced	Not Applicable
Recording of Original script					
Audio Editing					
Assembly					

Comments:

Music Tech II

NAME(s): _____

Unit III Assessment:

Introduction to Audio Editing in Protocols

Date _____

Instructions to the student:

Your teacher will instruct you about the radio spot (commercial) including the various components that are traditionally used to produce one. You will then be given the text of an existing radio spot and asked to create your own version. You will be expected to adhere to a very specific time length (given by your teacher) as that is essential to a successful product. In addition to speech, the project will include a sound bed and sound effects. Please utilize the various tools of a digital audio workstation while working on your project. Your work will culminate in a “final mix” of your project submitted as a “stereo audio master”.

Project 3: Radio Spot

Commercial Title _____

	1 Limited	2 Developing	3 Competent	4 Advanced	Not Applicable
Music Bed					
Quality of Recorded Text/Speech/Voiceovers					
Use of Sound Effects					
<i>Project Submitted as Stereo Master</i>		YES	NO	<i>Project is of correct length</i>	
				YES	NO

Comments:

Unit III: LOOP EDITING PROJECT

Create loop based composition using DAW.

Use loops to create a composition with varying sections and tempos.

- Use loops
- Minimum 64 measures long. No longer than 3 minutes long.
- Minimum of 10 loop tracks.
- 1 track of mono vocal audio.
- Label all tracks.
- Minimum of 2 tempo changes.
- Place markers for section changes and tempo changes. Label correctly.
- Groove clip loops as needed.
- Change pitch of at least one groove clip in Loop Construction View.
- Set Snap to Grid to Measure.
- When using Copy and Paste, uncheck copy Markers.
- Scoring based on use of loops, adherence to given parameters, creativity, and individual input.
- Partners should alternate jobs at regular intervals.
- Save As regularly in Glyph drive
- Final save
- Name.loop

Music Tech II

NAME(s): _____

Unit IV Assessment:

Introduction to Audio Production “Cover Song” in Protols Date _____

Instructions to the student:

Please use music production software (DAW) to produce a recreation of an existing popular recording; a “cover song”. Your teacher will provide you with the song as well as accompanying information that you may need in order to recreate it. In most cases basic rhythm tracks should be created via midi with all other tracks recorded as audio. The objective is to reproduce the original as closely as possible including the vocals! Your work will culminate in a “final mix” of your project submitted as a “stereo audio master”.

Project: *Cover Song*

SONG TITLE: _____ by: _____

Overall Use of Technology	0	1	2	3	4	NA
Use of Midi	0	1	2	3	4	NA
Use of FX	0	1	2	3	4	NA
Use of Audio	0	1	2	3	4	NA
Use of Effects Processing	0	1	2	3	4	NA
Microphone technique	0	1	2	3	4	NA
Quality of Recording	0	1	2	3	4	NA
Track Layout and Labeling	0	1	2	3	4	NA
Engineering	0	1	2	3	4	NA
Production	0	1	2	3	4	NA
Performance	0	1	2	3	4	NA
Musical Score	0	1	2	3	4	NA
Quantity of Sound Cues	0	1	2	3	4	NA
Originality	0	1	2	3	4	NA
Final Mix	0	1	2	3	4	NA
Compare to Professional Recording	0	1	2	3	4	NA

0 = Did not demonstrate skill

1 = Limited

2 = Developing

4 = Competent

5 = Advanced

NA = Not applicable

_____ / out of _____

Name _____

MUSIC TECHNOLOGY II
UNIT IV SOUND TO VIDEO

- Replace entire existing soundtrack for Nike Commercial using DAW.
- Import video “Nike Commercial” from
- Replace existing audio with new:
 - Loops
 - Audio (underscore)
 - Sound effects (sfx)
 - Instrument tracks
 - Midi (convert to audio)
 - Foley
 - Speech
 - Label all tracks
 - Use Automation
 - Master fader / compression
 - Delay
 - reverb
 - Mix in stereo
 - Export as Quicktime video
 - Save

Use scoring sheet for reference.

Music Tech II

NAME(s): _____

Unit IV Assessment:

Sound to Video using Protools

Date _____

Instructions to the student:

Students will use Protools to create a new soundtrack for a given video. This project takes an existing video and removes the original sound track. Students will create their own soundtrack using loops, new audio, midi tracks, sound FX, and effects processing. New sound track must include vocals, music, and sound cues. Project must be mixed down to a final stereo master.

PROJECT TITLE: _____

Overall Use of Technology	0 1 2 3 4	NA
Use of Midi	0 1 2 3 4	NA
Use of FX	0 1 2 3 4	NA
Use of Audio	0 1 2 3 4	NA
Use of Effects Processing	0 1 2 3 4	NA
Microphone technique	0 1 2 3 4	NA
Quality of Recording	0 1 2 3 4	NA
Track Layout and Labeling	0 1 2 3 4	NA
Engineering	0 1 2 3 4	NA
Production	0 1 2 3 4	NA
Performance	0 1 2 3 4	NA
Musical Score	0 1 2 3 4	NA
Quantity of Sound Cues	0 1 2 3 4	NA
Originality	0 1 2 3 4	NA
Final Mix	0 1 2 3 4	NA
Compare to Professional Recording	0 1 2 3 4	NA

- 0 = Did not demonstrate skill
- 1 = Limited
- 2 = Developing
- 4 = Competent
- 5 = Advanced
- NA = Not applicable

_____ / out of _____

MUSIC TECHNOLOGY
FINAL SCORING SHEET

PROJECT TITLE _____

SCORING: Least 1-5 Best / NA = Not Applicable / P = Present / NP = Not Present

Overall Use of Technology	1	2	3	4	5	NA	P	NP
Use of Midi	1	2	3	4	5	NA	P	NP
Use of FX	1	2	3	4	5	NA	P	NP
Use of Audio	1	2	3	4	5	NA	P	NP
Use of Loops	1	2	3	4	5	NA	P	NP
Use of automation	1	2	3	4	5	NA	P	NP
Use of Foley	1	2	3	4	5	NA	P	NP
Microphone technique	1	2	3	4	5	NA	P	NP
Quality of Recording	1	2	3	4	5	NA	P	NP
Track Layout and Labeling	1	2	3	4	5	NA	P	NP
Production	1	2	3	4	5	NA	P	NP
UnderScore	1	2	3	4	5	NA	P	NP
Quantity of Sound Cues	1	2	3	4	5	NA	P	NP
Originality	1	2	3	4	5	NA	P	NP
Final Mix	1	2	3	4	5	NA	P	NP
Compare to Professional Recording	1	2	3	4	5	NA	P	NP
Sync to Video	1	2	3	4	5	NA	P	NP

