

Digital Recording and Sound Systems for the Music Educator

Course Outline 2018

by Michael Fein

Pre-Assignment

1. Prior to the start of class you will be responsible for reading the following:
 - a. Live Sound Basics (Ultimate Beginner Tech Start Series) by Tony Marvuglio (p. 4-49). This book provides a concise overview of setting up sound systems, a task just about every music teacher must take on at least twice a year for concerts!
 - b. “Digital World Fundamentals” (Ch. 1) and “Microphone Overview and Techniques” (Ch. 11 - partial chapter) from Recording in the Digital World by Rudolph and Leonard. These selections are available via Google Drive download:
 - i. Ch. 1 -
<https://drive.google.com/file/d/0B8VDaqhHZV7DVThvQIVlcTV6WE0/view?usp=sharing>
 - ii. Ch. 11 -
<https://drive.google.com/file/d/0B8VDaqhHZV7DaG5rRnR2WXhkBJA/view?usp=sharing>
2. As you read develop a content organizer of the key ideas discussed in the text (I suggest an outline format). Compile your content organizer into a Google document and share it to me prior to the start of class (mfein@uarts.edu).

Day 1

1. Course introduction (syllabus, course outline, ice breaker)
 - a. Google Drive accounts
2. About Haverford High School’s Music Tech Program
 - a. The Other 80%
 - b. History of the lab
 - c. Course offerings
3. Audacity
 - a. History of Sound Recording and How Digital Audio Works
 - b. Frequency and Amplitude Activity
 - c. Alphabet Soup and Dr. Evil
 - i. Upload exported MP3 to Google Drive and share with classmate
 - ii. Dr. Evil - YouTube link - <https://youtu.be/jMIDpJ8H7H0?t=1m52s>
(careful! Not 100% school appropriate!)

- d. Normalizing/Maximizing Audio
 - i. Read Some Like It Hot article
 - ii. Saxophone and Beethoven file
 - e. Recording Audio – Mad Libs - Record with good levels using SnowBall mic, edit tracks together, norm/max, export as MP3
 - f. Podcast Intro - Recording audio, Envelope tool, Importing music (download from YouTube), Fading
4. Downloading and Installing Audacity
- a. Main site: <http://audacityteam.org>
 - b. Download Page: <http://audacityteam.org/download/>
 - c. LAME and FFmpeg: <http://lame.buanzo.org/#lamewindl>
 - d. Installing VST Effects:
http://manual.audacityteam.org/o/man/faq_installation_and_plug_ins.html#How_to_install_VST_plugins.3F
5. Integrating Audacity into the curriculum - small group discussion and Google form.

Day 2

1. TI:ME
- a. Certification process
 - i. Level 1 - Take 1A and 1B
 - ii. Level 2 - Take 2A, 2B, 2C...OR skip Level 1 and take 2A x 2, 2B x 2, and 2C
 - iii. ***This course counts as 2B***
 - b. Temporary membership
 - c. Member benefits
 - i. Lesson plans (also show how to search)
 - ii. Archive of articles/newsletters
 - iii. Research database, social TI:ME, magazine subscriptions
2. Audacity
- a. Slowing down a recording
 - b. Uploading and downloading an Audacity file to Google Drive
3. GarageBand
- a. Parker's Tune
 - i. Split a track (Command+T)
 - ii. Show automation (A) and fade in/out
 - b. Brecker Effects Project
 - i. Create new tracks (hit + in upper left corner or go to Track > New Track)
 - ii. Add effects to each track using - Smart Control button (in upper left corner). Then hit "i" in bottom window. Then open "Plug-ins" arrow and add new effects.
 - iii. Try automating the effect parameters to create really cool effects.
 - c. Improving Recordings in GarageBand
 - i. Sax recording - EQ, Reverb, Compressor
 - d. MIDI Keyboard Recording - Saints Go Marching In
 - e. Children's Story Podcast - Pigeon Book

- i. Extension: Export to iMovie to add visual element
- 4. SoundTrap - www.soundtrap.com
- 5. Integrating GarageBand into the curriculum - small group discussion and Google form.

Day 3

- 1. Items from Communication Logs:
 - a. Review - Improving volume levels in GarageBand
 - b. Saving presets for effects in GB
 - c. Review - Setting mic levels in GB and Audacity
 - d. Review - Uploading an Audacity file and GarageBand file to Google Drive
- 2. Pro Tools - Audio
 - a. Audio editing Basics:
 - i. Number Jumble
 - ii. Demo: Ludicrous Speed
 - b. Effects:
 - i. Automation Lesson
 - ii. Trumpet/Sax
 - c. Grabbing web audio:
 - i. Download a file from JW Pepper and edit
 - ii. Use Video Download Helper (Firefox only) - <https://addons.mozilla.org/en-us/firefox/addon/video-downloadhelper/>
 - iii. In Firefox, try Tools > Page Info. Then click the Media tab. Find the audio/video file and click Save As.
 - d. Audio Recording
 - i. Days of Wine and Roses – Sax Recording (setup, punch-in, pre/post-roll)
 - e. Making Great Ensemble Recordings:
 - i. Gear
 - ii. Handheld recording devices
 - iii. HHS Jazz Ensemble Example
 - iv. Amazing Grace class recording
- 3. Pro Tools - MIDI
 - a. Importing MIDI
 - i. Bach Invention
 - ii. Download a MIDI file and import
 - b. Boom - Drum Machine Project Lesson
 - c. Brother John
 - d. *Enrichment:*
 - i. Eleanor Rigby
 - ii. Blues
 - iii. Bach Chorale

Day 4

- 1. Microphone setup and cable wrapping
- 2. Sound Systems

- a. Integrated System - [Behringer EPS500MP3](#), [Fender Passport](#)
 - b. Mixer
 - i. Digital vs. Analog
 - ii. Inputs
 - iii. Channel Strip (input, trim, aux send, EQ, panning, mute/solo, gain)
 - iv. Outputs
 - c. Speakers and Power Amplifiers
 - i. Speakers
 - ii. Power Amp
 - iii. Matching your speakers to your power amp (Ohms and Watts)
 - d. Signal Processing
 - i. Reverb
 - ii. Delay
 - iii. EQ
 - iv. Compressors
 - e. Cable options – XLR, TS (unbalanced), TRS (balanced), RCA, SpkOn
 - f. Other needed items:
 - i. Power conditioner and distributor
 - ii. Cases - mic cases, rack cases
 - g. Setting up the actual gear
 - i. Making connections
 - ii. Cable wrapping
 - h. Resources:
 - i. <http://www.sweetwater.com/sweetcare/knowledge-base/>
 - ii. <http://www.uniquesquared.com/blog/pro-audio/>
 - iii. <http://www.prosoundweb.com/>
3. Small Groups:
- a. Sound Systems Hands On
 - b. Sound System budget (post assignment)
4. Publishing
- a. Copyright considerations- Harry Fox for mechanical and digital licenses
 - b. CD Baby (Web sales and iTunes)
 - c. SoundCloud
 - d. Enrichment: Weebly - free web hosting, embedding SoundCloud audio
- 5. Final Project:**
- a. Lesson Plan OR...
 - i. Create a music production lesson plan. This could be for a student hands-on project or it could be any classroom lesson that would incorporate GarageBand, Audacity, or Pro Tools (or SoundTrap if you are a Chromebook school). **Try to create something that can be used in your current teaching position.**
 - b. Duet recording OR...
 - c. Accompaniment recording for vocal practice OR...
 - d. Any other approved idea

Day 5

1. **FIELD TRIP TO UARTS KAPLAN THEATER** - JP Beattie, guest speaker - advanced topics, question/answer, advice/tips/tricks
2. 1-2pm: Wrap up final projects
3. 2-3pm: Present final projects
4. 3-3:30pm: iPad - iOS Apps and Gear
 - a. Musical iPad by Rudolph & Leonard
 - i. <http://www.halleonardbooks.com/ebookmedia/119292>
 - b. GarageBand
 - c. Other Apps
 - i. Stereo Recording - [WavePad HD](#)
 - ii. Multitrack Audio Recording - [Auria](#)
 - iii. Multitrack Recording - [Cubasis by Steinberg](#)
 - d. Stereo Microphones
 - i. [Mikey Digital by Blue](#)
 - ii. [Rode iXY by Rode](#)
 - e. Recording interfaces for iOS
 - i. [iRig Pro](#)
 - ii. USB microphones ([Blue Snowball](#) and [Apple Camera Kit](#))
 - iii. [Alesis iO Dock II](#)
5. Copy/upload files to Drive
6. Final Course Evaluation via Google Form

Post Assignment:

1. **Assignment:** Create a budget for a sound system in your school situation. Include a mixer, microphones, speakers/monitors, power amp, signal processing (EQ, reverb, etc.), cables (mic, speaker, between gear), and storage.

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