

Live Sound

AP&I Recording Studio
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Course Description

Live Sound Mixing is the technique of balancing and blending sound sources at a live musical, or theatrical event through a mixing console. Using microphones, DI boxes and acoustics onstage the front of house mixing engineer creates the sound that the audience hears. We are going to cover the fundamental principles used in live sound mixing to bring out the best sound possible for all of the performances we work.

Sound engineers are some of the first on the set and the last off the set, because they have to work their magic behind the scenes. A good front of house mixer won't draw any attention because the audience is too busy enjoying the show, I'm sure we've all been to a show that sounded like garbage, or was full of technical difficulties. Some of these difficulties are unavoidable, but some can be fixed with the proper trouble-shooting. As live sound engineers we are going to be confident and comfortable with our gear as well as our methods. We can have crummy mics, crummy gear, and a terrible sounding room but we're going to make the music shine.

Listening

As with all sound engineering fields listening is paramount. The first thing we need to know in order to make a live mix is what does the space sound like. No matter what, you're going to have to make the space work so it's best to get an idea of how the space sounds without the crowd, talent and excitement. Whether you're working in an acoustically tuned room, or a boomy old jazz hall it's important to know how it sounds so you can make the sounds cut through to the audience.

Once the talent is there, it's equally important to listen to not only the source sound but the sound that's reproduced through the monitors as well. If you get an idea of how the instruments sound at the source it will tell you a few things:

- How/where to place the microphone(s)
- What type of microphones to use
- A rough idea of how to EQ the instrument
- Where the instrument should sit in the mix

Microphones

Microphones are the weapon with which sound engineers do battle. There are endless choices when it comes to microphones, but live sound is quite different from recording engineering. The volumes are higher, there is much more background sound, and there is the imminent possibility of FEEDBACK! The last point cannot be emphasized enough.

Audio feedback is a special kind of positive feedback which occurs when a sound loop exists between an audio input for example, a microphone or guitar pickup and an audio output for example, a loudspeaker. The signal received by the microphone is amplified and passed out of the loudspeaker. The sound from the

loudspeaker can then be received by the microphone again, amplified further, and then passed out through the loudspeaker again.

When we're considering microphones we need to take into account:

- Type (condenser/dynamic)
- 48v phantom
- Pickup pattern
- SPL capabilities
- Wired/Wireless/Receivers
- Optional features (roll-off, pad)

In many applications a sturdy Dynamic Microphone is the best option. Dynamic microphones tend to have a higher SPL rating, for things like guitar amps and a lower chance of feeding back when amplified.

Required Materials

- Pen/Pencil, Notebook
- Thumb-drive/External Hard-drive (recommended)

AP&E Department Course Policies:

- Students will respect and follow all OSA policies outlined in the OSA student handbook. Students will arrive on time, prepared and focused.
- No late homework will be accepted unless the student has an excused absence (list of approved excused absences can be found in the OSA student handbook).
- Students are expected to take pride in their classroom by keeping it neat and clean.
- Class Participation Policy:
 - Students will receive 10 points per day for showing up on time, participating fully, refraining from side chatter and generally behaving in an engaged and professional manner.
 - Students who don't adhere to classroom behavior expectations outlined above will receive 2 points deducted for every infraction.
 - Students who are absent are given a 0/15 for the day.
 - NOTE: Students with excused absences that meet the notification requirements stated in the OSA handbook, will receive an EX/15, provided that they provide VM teacher with either email or hand-written note from parent to verify that absence was excused.
 - Students who are tardy will receive 3 points deducted from participation grade.
 - Students who eat, chew gum, or use their cell phone in class (without teacher authorization) will have two points deducted from participation grade.

I have reviewed the entirety of this syllabus (2 pages) with my student and both my student and I understand all course policies.

Parent / Guardian Signature

Date

Student Print Name

Student Sign Name

Date