

Intro to Sound Equipment Syllabus

(5 weeks)

Week 1

The physics of sound and fundamentals of a waveform

- Amplitude (peak vs. trough)
- Frequency
- Types of waveforms:
 - Simple
 - Sine
 - Square
 - Sawtooth
 - Triangle
 - Complex

Signal flow and routine using an analog mixer

- Channel strip
 - Mic pres
 - 48v
 - Pad
 - Phase
 - Gain Structure
 - Mic level
 - Line level
 - Inserts
 - EQ
 - Fader
 - Panning
 - Mute
 - Solo
 - Direct outs
 - Aux Sends'
 - Pre
 - Post
 - Bussing
- Master Section
 - Stereo master fader
 - Control room
 - Tape in/out
 - Talk back
 - Aux returns
 - Main and control room outs

Week 2

Review material from the previous week.

Gain structure and clipping

- Preamp signal
- Amplified signal
- Direct Injection Box

Cable types

- XLR
- 1/4" balanced, unbalanced, ts, trs
- RCA
- SPDIF
- Speaker
- Banana
- Speakon
- MIDI

Week 3

Microphone types

- Dynamic
- Condenser
- Ribbon

Common microphone pickup patterns

- Cardioid
- Super and hypercardioid
- Bidirectional/figure 8
- Omni

Micing Techniques (part 1)

- Things to consider when micing and instrument
 - Frequency response
 - Transient response
 - Pickup pattern
 - Sound Pressure Level
 - Phase
 - Proximity effect
 - Placement
- How to mic...
 - Accoustic guitar
 - Electric guitar

- Bass
- Piano

Week 4

Micing Techniques (part 2)

- How to mic...
 - Vocals
 - Drums
 - Stereo micing techniques
 - XY or Coincident pair
 - Blumlein
 - Near-coincident pair
 - Spaced pair
 - Mid-Side

Week 5

On location assistance at a Madison Music Foundry music event.

- Setup mics, cables, stands, and equipment
- Run the mixing console
- Tear down