Week 5 Lecture Outline: Digital Signal Processing

1. Plug-ins—what are they? Non-destructive vs. destructive processing. Plugs are non-destructive.
2. Use inline (i.e. in each input track) or place on an aux channel or use on final MASTER track.
3. Ordering multiple plug-ins—yes, the order DOES matter to the end result—usually reverb last.
4. Spatializing effects...processed signal (“wet”) can be spatialized differently from the original signal (“dry”). This can be super-effective with things like delay, pitch shift..use your creativity.
5. Automating plug-ins

   1. TURN ON TRACK PLAY AUTOMATION or nothin’ gonna happen!
   2. SELECT RECORD WITH UPPER RIGHT “AUTO” DROPDOWN, WHEN DONE, UNSET
   3. Bypass function
   4. Parameters to automate including mute/bypass
   5. Live recording of parameter changes—again, set plugin AUTO to record
   6. Drawing/modifying parameters in sequence editor (TOOLS- Shift-O)

6. DP MW Equalizer A great parametric equalizer (EQ), use it often on individual tks and MASTER.

   1. Parametric means for most frequency bands, you control the amplitude, center frequency and bandwidth (Q). Also slope is an option with DP MW EQ.
   2. Each desired band must be turned on with its on/off icon!
   3. Settings: adjust display dB scale (+24dB is intense!). Also, click the FFT switch to visualize signal and EQ effect. Note precise readout for band info as you select/change parameters.
   4. Set center frequency (depends on type chosen—i.e. bandpass, shelving, etc.) by dragging band color square sideways or with knob
   5. Set gain (boost/cut) by dragging up/down or with knob
   6. Set bandwidth (called ‘Q’) by dragging vertical bars horizontally or with knob
   7. Steepness of rolloff with different filter types (Roman numerals)
   8. For high/low (white knobs), adjust steepness of rolloff in dB, for orange/green, adjust filter type (shelf/band)

7. DP ProVerb (a convolution reverb that used impulse response (IR) files)

   1. What is reverb? Common errors: too much reverb, cutting off reverb tail (end) with edit.
   2. Choosing or loading your own impulse response file (load your own by dragging into window)
   3. Wet/dry mix –if on an aux channel, then 100% wet makes most sense
   4. Reverb time—IR’s can be stretched out/compressed with the BIG LENGTH KNOB
   5. Initial reflections/early reflection control with PRE-DELAY
   6. Damping (simulates curtains, people, gorillas in the room) = lowpass that simulates the way higher frequencies decrease with distance—called diffusion on some reverbs
   7. EQ section/dynamic mixing (incl. threshold)
   8. Bussing to a MASTER reverb VS. individual channels.
   9. DO NOT SEND REVERB BACK INTO ITSELF VIA SIGNAL PATH BUSSES—you will get highly undesirable feedback.

8. DP echo OR DP Delay

   1. Real-time or beat/note value/bars grid
   2. Setting taps—super-short taps called “slapback echo”
   3. Feedback sends delay tap back into itself for multiple taps—can die away, stay equal or build-up—Be careful not to have feedback exceed 100% gain or it will build up indefinitely and cause distortion
   4. DP Delay has option for cross-channel feedback networks, very cool with multichannel tracks (quad, etc.).

9. DP Chorus if time permits

   1. Modulation of depth
   2. Wet pan/dry pan.