

Electroacoustic Music II

MUS 333 01

4 credits

Tuesday & Thursday 9:00 – 10:45 AM

Location: Benildus 245 - Computer Lab

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Projects

16-step MIDI sequencer

Output on each step:

- Pitch
- Velocity
- MIDI channel
- Program/preset
- 3 Continuous Controllers

Controls for each step:

- All of above
- Duration/legato amount (time scalar)
- Subdivision (tempo multiplier)
- Probability

Overall controls:

- Start
- Stop
- Pause
- Resume
- Tempo
- Reset (to first step)
- Goto (specified step)

Auto Filter

Resonant Low-pass Filter

Envelope Follower

Controls for:

- Threshold
- Filter Cutoff Frequency
- Modulation Amount
- Wet/Dry Mix

Wah-Wah

Comb Filter
Delay Time Modulation
Controls for:
 Modulation Amount
 Resonance Amount

Reverberator

Calculate early reflections
Classic Schroeder designs
Controls for:
 Room size/predelay
 Reverb Time (RT_{60})
 Diffusion
 Damping
 Reverb Level
 Early Reflections Level
 Direct Level

Pitch Shifter

Time domain/overlap-add
 Write/Read to/from circular buffer
 Differential write/read speed
 Cross-fade at 'splice points'
Frequency domain/fft
 Multiply frequency bins by constant amount

FM Synthesis Instrument

Carrier frequency (F_c)
Carrier-to-Modulator frequency ratio (C:M)
Modulation index
Overall amplitude
Envelope modulation of parameters
LFO modulation of parameters
External MIDI modulation of parameters

Waveshaping Instrument

Driving signal frequency
Transfer function
Timbre/amplitude compensation function
Overall amplitude

Granular Synthesis System

- Grain rate
- Grain length
- Grain envelope
- Grain signal
- Grain amplitude
- Grain panning
- Envelope parameter settings
- Random modulation of parameters

Interactive Performance Instrument

Live performance instrument, controlled via MIDI and/or on-screen controls, which combines several of above into one package.