025:250 COMPOSITION: ELECTRONIC MEDIA I
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The course is an introduction to concrete, synthesis, and sampling techniques in both digital and analog domains. There are no exams in this course. Grading will be based solely on 16 Assignments (50%) and three compositions (50%). Attendance in an electronic music seminar once a week (time to be determined) is also required.

Most of the work will be done using software for the Macintosh computer. Students already not fluent in Macintosh skills should immediately acquire them by reading the Macintosh User's Guide in Studio Two and working through the Macintosh Basics tutorials which are on the ITC lab computers.

In order to optimize studio use, some assignments will be done on ITC Macintosh computers. In such cases, you may make floppy disk copies of the freeware and shareware programs installed on the EMS Macintosh and run these floppies on the ITC computers. As an alternative to the ITC computers, you may use your own Macintosh.

Keys to Studios One and Two may be acquired from Kirk Corey. You may also purchase floppy disks and DAT tapes from him. He can also tell you how to activate your Weeg computing account and how to learn to send and receive email.

Use common sense when working in the EMS studios: do not leave doors open when you are not in the room; always keep your keys in your pocket so you don't lock yourself out at 3:00 AM; don't loan your keys to anyone; don't let non-key-holders use the studios; follow power up and power down procedures carefully; and try not to break anything.

When the EMS computer crashes or behaves in a strange way, briefly jot down what you were doing before the mishap occured and share this information with the class via email so that we can troubleshoot the system. Relaunching the program or restarting the computer is the obvious immediate solution to any problems.

Calendar

Note: Since unforeseen problems will probably arise, we will very likely need to modify assignments as the quarter progresses. There is also a strong possibility that we will receive funding for a Mac sound card. In such a case, the assignments that use the program Sound Effects will instead be done with either Sound Designer or Session.

Aug. 21	**Topics:**	Introduction to Macintosh digital sound and sound file organization on the EMS Quadra.
	Assign. 1:	Find, play, and rename sound files. <u>Due Aug. 23.</u>

Aug. 23	**Assign. 1:**	Due.
	Topics:	Single track editing in Sound Effects using copy, cut, & paste commands.
	Assign. 2:	Copy sounds and fragments from three source files and paste into a new file to create a short composition. <u>Due Aug. 30</u>

Aug. 28	**Topics:**	Discussion of sampling rate, byte size, and resampling. Multitrack editing in Sound Effects.
Aug. 30	**Assign. 2:**	Due.
	Topics:	Basic transformations in Sound Effects using normalize, silence, gain, fade in, fade out, filter, and reverb commands.
	Assign. 3:	Select sound files from EMS Sounds folder and paste into new multitrack sound file. Resample when necessary and transform as desired. Due Sept.11
Sept. 4	**No class**	
Sept. 6	**Topics:**	Pitch transformations in Sound Effects and Sound Hack. Time transformations in Sound Hack.
Sept. 11	**Assign. 3:**	Due.
	Topics:	Morphing ("reiterative crossfade" or "mutation") in Sound Effects and Sound Hack. Sample Hose and Granular Synthesis in Sound Effects.

Composition 1: Use your own sound files and any from the EMS Sounds folder as source material for a multitrack composition in Sound Effects, 2:00-3:00 in length. Transform this material using techniques discussed in class. Due Oct. 23.

Sept. 13	**Topics:**	Acoustics: physical descriptions of sound.
	Assign. 4:	[Written]: Mathematical conversions of pitch/frequency, frequency/period, period/phase relations. Due Sept. 18.
Sept. 18	**Assign. 4:**	Due.
	Topics:	Acoustics: Waveforms, harmonics, frequency modulation.
	Assign. 5:	[Written]: Calculating harmonic number/frequency, sum wave frequency, and harmonic amplitudes of basic waves. Due Sept. 20.
Sept. 20	**Assign. 5:**	Due.
	Topics:	Microphones, recording, sampling.
	Assign. 6:	[In Studio One]: Record found objects onto DAT. Due Sept. 25.
Sept. 25	**Assign. 6:**	Due.
	Topics:	Recording live instruments; DAT-to-DAT transfer.
	Assign. 7:	[In Studio One]: Record a live instrumentalist onto DAT in Studio One and edit onto a second DAT. Due Oct. 2.
Sept. 27	**Topics:**	Analog processing in Studio Two with Yamaha Rev-2 digital reverb and B & K graphic equalizer.

Oct. 2	**Assign. 7**:	Due.
	Topics:	Analog processing in Studio Two with 20/20 ring modulator, Lexicon digital delay, and Moog synthesizer filters.
	Assign. 8:	Process DAT tapes from Assignments 6 (found objects) and 7 (live instrument) in Studio Two and record onto a new DAT tape. <u>Due Oct. 9.</u>

Oct. 4	**Topics:**	Netsurfing in the ITC lab with Kirk Corey.

Oct. 9	**Assign. 8**:	Due.
	Topics:	Music 5: note editing.
	Assign. 9:	[In ITC lab or elsewhere]: Create a Music 5 "script" consisting of several pre-defined "instruments" and original pitch/rhythmic material. Convert to AIFF in Studio Two. <u>Due Oct. 11</u>.

Oct. 11	**Assign. 9**:	Due.
	Topics:	Music 5: creating simple instruments.
	Assign. 10:	[In ITC lab or elsewhere]: Create Music 5 scripts for sine wave and noise instruments. Create a short note script for each instrument and convert them to AIFF in Studio Two. <u>Due Oct. 16</u>.

Oct. 16	**Assign. 10**:	Due.
	Topics:	Music 5: creating wave forms.
	Assign. 11:	[In ITC lab or elsewhere]: Create Music 5 scripts for sawtooth, square, triangle waves, and three original waves. Create a short note script for each instrument and convert them to AIFF in Studio Two. <u>Due Oct. 18</u>.

Oct. 18	**Assign. 11**:	Due.
	Topics:	Music 5: using envelopes and modulation.
	Assign. 12:	[In ITC lab or elsewhere]: Create Music 5 scripts for ten instruments, each with uniquely defined waveforms, envelopes, and modulation characteristics. Create a short note script for each instrument and convert them to AIFF in Studio Two. <u>Due Oct. 25.</u>

Oct. 23	**Composition 1**:	Due.
	Topics:	Introduction to the Moog synthesizer.

Composition 2: [In ITC lab or elsewhere]: Combine Music 5 scripts from Assignments 9-12 along with new instruments and pitch/rhythmic material to create a Music 5 composition of 1:30-2:30 in length. Convert to AIFF in Studio Two. <u>Due Nov. 6</u>.

Oct. 25	**Assign. 12**:	Due.
	Topics:	Sampling the Moog synthesizer.
	Assign. 13:	Create a DAT of Moog samples. <u>Due Nov. 1</u>.

Oct. 30	**Topics:**	Introduction to the Arp synthesizer.
	Composition 3:	Create a 4-5 minute composition in Sound Effects using digital and analog transformations of sounds from EMS Sounds folder, DAT recordings of found objects, DAT recordings of lives instruments, Music 5 AIFF files, Net sounds, Moog and Arp samples.

Nov. 1	**Assign. 13:**	Due.
	Topics:	Sampling the Arp synthesizer.
	Assign. 14:	Create a DAT of Arp samples. <u>Due Nov. 8</u>.

Nov. 6	**Composition 2:**	Due.
	Topics:	DAT-Mac-DAT transfers.

Nov. 8	**Assign. 14:**	Due.
	Topics:	Creating envelopes with Sound Sculptor.
	Assign. 15:	Create pitch and amplitude envelopes for 10 short sounds. <u>Due Nov. 13</u>.

Nov. 13	**Assign. 15:**	Due.
	Topics:	Introduction to Lemur.

Nov. 15	**Topics:**	Spectral transformations in Lemur.
	Assign. 16:	[In ITC lab or elsewhere]: Use Lemur to spectrally transform 10 short sounds. <u>Due Nov. 20</u>.

Nov. 20	**Topics:**	Discussion of works-in-progress.

Nov. 22	**Topics:**	Discussion of works-in-progress.

Nov. 27	**Topics:**	Discussion of works-in-progress.

Nov. 29	**Composition 3:**	Due.
	Topics:	Post-production effects.

Dec. 4	**Topics:**	Preview of Spring Semester software.

Dec. 6	**Topics:**	Preview of Spring Semester software.

Dec. 7	**Concert** of works from the Experimental Music Studios: 8:00 PM, Clapp Recital Hall. Attendance mandatory for set-up and sound check from 5:30-7:30.