AMC 6500A - Composing with Sound
3 Credits
HKUST Fall 2025
Course Syllabus

Instructor:	Dr. Timothy PAGE
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Office hours:	By appointment, Mon 11:00-12:00
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Lectures: SHAW 105	L1 Mon 09:00 – 10:50
Tutorials: SHAW 105	T1 Mon 12-13, T2 Mon 13-14, T3 Mon 14-15

Course description

This hands-on course in electronic music composition will develop compositional literacy and students' skills in creative organization of sound. We will explore various techniques in digital audio workstation composition and sound processing, with an emphasis on the compositional topic of form. Our journey will be guided by focused listening and discussion of significant repertoire, as well as selected readings. We will also explore recently developed machine-learning-based technologies for sound processing, organization, and creation, touching on aesthetic and philosophical questions raised by such technologies. Students in the course will learn recording and production techniques in the University's Electronic Music Studio and have access to the facility for developing their projects. The course will culminate in a concert-presentation of student works. Since we will primarily be working with concrete sound rather than musical abstractions, students need not have prior experience in music theory or composition to succeed in the course. Indeed, any AMC student who is interested in working with sound is encouraged to take the course!

The primary software platform we will be using is digital audio workstation software known as REAPER. We will also have the chance to learn studio techniques in our new Electronic Music Studio, including recording and mixing.

There is no final examination for this course. In lieu of a final, students will present their final projects to the class in a concert-like setting. A preliminary composition exercise is due in lieu of a midterm examination, and will be presented in class halfway through the term. Students will also submit a written analysis of a piece electronic music from a list of selected repertoire.

Intended learning outcomes

On successful completion of the course, you will have learned to

CILO 1	Demonstrate advanced knowledge and appreciation various types of electronic music
CILO 2	Apply new technologies for digitally processing audio
CILO 3	Creatively organize sound into coherent works of music as a means of self-expression
CILO 4	Demonstrate facility with studio techniques such as recording, editing, and mastering
CILO 5	Demonstrate advanced understanding of key issues in music aesthetics

Prerequisites

There are no course prerequisites for this class, or requirements to have had previous formal training in music. While those with ample musical background may find certain topics more familiar, they will be all the more encouraged to think in new ways about approaches to organization of sound. In this respect, we aim accommodate students of diverse backgrounds and levels of experience.

Course Materials:

You will need to obtain your own copy of Reaper, a powerful but low-cost digital audio workstation (DAW) software. You will receive instructions on how to do this in lecture. If you also have literacy on another DAW, you may in certain instances use this, subject to my approval. You will need your own laptop, which you will occasionally be asked to bring for lecture and tutorials. You will also need a pair of decent wired headphones. (Wireless headphones are not recommended when using DAWs or other sound software, due to latency and compression issues). There may be a limited number of workstations in AMC Temporary Laboratory with good headphones and the relevant software installed, but a good pair of studio headphones is also worthwhile investment for anyone doing electronic music.

Course requirements

1. Weekly technical and creative assignments, which will be presented and evaluated in tutorial.

2. Attendance and participation: Much of what you learn will be assimilated via discussion and feedback on your work in lecture and tutorial. Therefore, attendance and participation are absolutely crucial in both lecture and tutorial. This course moves quickly, and you cannot afford to fall behind. You must participate in discussions, as well as the presentation of your exercises and projects. Since you will be presenting your work in tutorials for evaluation and discussion, your attendance in tutorials is all the more essential. **Do not take this course if you cannot commit to attending the tutorials.** Absences will only be excused if you provide medical documentation. No cell phones are allowed in class. If you have your cell phone out during lecture or tutorial you will receive a zero for participation that day, as if you were absent.

3. Midterm project: composition of a work of *musique concrète*, with a duration of 2-3 minutes, which demonstrates your command of the technologies and compositional principles that we have studied.

4. Final project: A fixed media work, in any style, of 3-4 minutes. We will explore the assignment in detail as the course progresses. **Attendance at the final concert in SHAW 103 on Monday, Dec 1, 19-21:00 is mandatory**. **Do not take the course if you can't attend this concert.**

5. Written assignment: A Written review and analysis of a piece of electronic music, chosen from a playlist to be assigned.

7. Attendance of **Cosmopolis Festival** events: **You are required to attend two events** from the Cosmopolis Festival, which is featuring five very interesting events this fall. Of these, one must be the concert on October 5, featuring the Finnish electroacoustic jazz trio Elifantree.

For more information and registration, visit: https://cosmopolisfestival.hkust.edu.hk/upcoming_event

(The Festival website will be live by the second week of September)

Grading

Attendance and participation	15%
Portfolio of composition exercises	20%
Repertoire report	15%
Midterm project	20%
Final project	30%

TENTATIVE LECTURE TOPICS:

Session 1: Sound Around Us and its Organization. (CILO 1,2,4,5)

- What is music? Organized sound, authorship, etc.
- Musical parameters
- Soundscape, deep listening
- Musique concrete, sound objects, field recording principles; Zoom H4n recorders.

Repertoire: W.A. Mozart, *Symphony No. 41 in C major*, mvt. 1 (1788); John Cage, *4'33"* (1952); Pierre Schaffer, *Cinq études de bruits* (1948)

Session 2: Layers, Timbre, intro to Reaper DAW (CILO 1,2,3,5)

- Timbre: sound as a composite of frequencies.
- Orchestration; organization of timbres
- Counterpoint; layers in music
- Introduction to REAPER editing

Repertoire; J.S. Bach, *Invention no.13 in A-Minor* BWV 772; Bernard Parmegiani, *L'Espaces Acoustics* (1978), Jonty Harison

Reading: Reading: Pierre Schaeffer, "In Search of the Sound Object"

Session 3: Musical Form, Gestalt, Acoustic Space I (CILO 1,2,3,5)

- Musical form
- Gestalt
- Reverbs, panning.
- Convolution

Repertoire: Helena Gough, *Spores* (2013); Michel Chion, "Sanctus" from *Requiem* (1973), Alvin Lucier "I'm Sitting in a Room" (1969)

Reading: Allan Brinkman *Auditory Scene Analysis* (excerpts)

Session 4: Acoustic Space II, Delays (CILO 1,2,3,5)

- Mono and stereo, miking techniques, Ambisonics
- Submixes
- Birth of the Remix
- Effects throws

Repertoire: King Tubby*, various;* Natasha Barrett: *Dusk's Gate* (2018)

Session 5: Metering; EQ Filters, Sound and Intent (CILO 1,2,3,4,5)

- Decibels, gain staging and clipping
- EQ Filtering
- Sound and extramusical meaning

Repertoire: Pauline Oliveros, *Bye-Bye Butterfly* (1965), Hildegard Westerkamp *Kits Beach Sound Walk* (1989)

Session 6: Filters, cont; Compression (CILO

- Dynamic Range Compression
- Limiting
- Side-chaining
- Mastering, Loudness

Repertoire: TBD

Session 7: *Presentation of Midterm Compositions* (CILO 3, 5)

Session 8: VSTs, MIDI, AI Stem Extraction tools

- Some hip hop history: turntables; drum-machines; samplers
- MIDI
- Using MIDI in REAPER, virtual instruments, creating a drum machine,
- Rhythmic loops, tempo-matching,
- AI Stem extraction tools.

Reading: Katz, Mark (2012) *Groove Music* (excerpts)

Session 9: Studio Techniques I, Generative AI Musical Tools I (CILO 2, 4, 5)

- Microphone types, cable types,
- Signal level types
- Methods in Sound Synthesis
- Introduction to Electronic Music Studio equipment
- Intro to generative AI musical tools.

Repertoire: The Velvet Sundown, "Dust on the Wind"

Session 10: Rhythmic Organization of Sound (CILO 3, 5)

- Rhythmic hierarchies: beat, pulse, meter, time signature;
- Syncopation
- Phrase Rhythm
- Polyrhythm

Repertoire: TBD

Session 11: Granulation, Generative AI techniques II (CILO 1,2,3,5)

- Sound synthesis cont.
- Granulation
- Fourier decomposition; frequency domain vs time domain; FFT
- Discussion: Using AI generated material compositionally

Repertoire: Paul Lansky, Notjustmoreidlechatter (1988);

Session 12: individual lessons with Prof. Page, project development

Session 13: *Presentation of final projects*

- **Final concert on Monday, Dec 1, 19:00-21:00.** Attendance is mandatory.