

Sound Studies and Sonic Arts

Summer Term 2022

Phase Focus

Module Practice

Course Title 1. *Handmade Electronic Music – a workshop in hardware hacking*
2. **Feedback workshop** | Workshop

Course Times and Location 23-27 May 2022 | 10:00 am - 16:00 pm | LIE 314

Instructor [Prof. Nicolas Collins](#)

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Office Hours Upon request after class

Course Description

1) *Handmade Electronic Music – a workshop in hardware hacking*

Assuming no technical background whatsoever, this workshop guides the participants through a series of sound-producing electronic construction projects, from making simple contact microphones to building circuits from scratch. The emphasis is on constructing inexpensive but versatile electronic tools that fill the gaps in computer-centric music production, in particular: alternative microphones for creative sound recording and amplification, and performable electronic instruments that have the tactile quality of conventional acoustic ones.

The projects covered will include:

- A clip-lead synthesizer using nothing more than a battery and a loudspeaker
- Contact mikes and coil pickups
- A basic monitor amplifier
- Transforming a radio into a poor-man's Cracklebox
- Oscillators controlled by potentiometers, light sensors, skin conductivity, pencil drawings, fruit, etc.
- Analog signal processors

Students are expected to bring the following supplies to the first meeting:

- One loudspeaker, 10cm diameter or larger (raw speaker, or enclosed in a cabinet/box, but not a powered speaker). Bigger is better!
- A soldering iron (lightweight, fine point).
- Hand tools (diagonal cutters, wire strippers, a knife, etc.).
- One nine-volt battery.

Course format: morning lecture/demonstrations on design projects; afternoon lab sessions experimenting with materials.

Target audience: any sound students interested in performable electronic instruments, sound design, or alternative microphone and recording technology.

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Goals: after this class you will be able to design and build (solder) simple sound circuitry, and have the skills needed to understand basic circuit designs available on the web.

The curriculum is drawn from *Handmade Electronic Music -- The Art of Hardware Hacking*.

2) Feedback workshop

“When in doubt, you can always feed back.” One of the oldest and cheapest materials for electronic music, feedback’s richness and versatility make it worth a careful examination. This two-day workshop will be split between:

- Acoustic feedback – feedback between input and output transducers, including ordinary microphones and speakers, contact mikes and tactile transducers, guitars and amplifiers, and electromagnetic feedback.
- Wired feedback – “no-input mixing” and other feedback from outputs to inputs in chains and matrices of analog devices; software feedback

Students are encouraged to bring their own electronic devices, including microphones (including contact microphones), speakers & tactile transducers, electric guitar & amplifier, small mixers, effect pedals, small amplifiers, computer (if software-based feedback is a subject of interest).

Course format: morning lecture/demonstrations on design projects; afternoon lab sessions experimenting with materials.

Target audience: any sound students interested in performable electronic instruments, new sonic resources, and recreation of historic electronic music.

Goals: after this class you will have improved access to feedback in all its myriad forms.

Requirements for Attending

Each student will have to pay €25 for material provided by the instructor. No technical background is required.

Maximum participants: 10

The Workshop ends with a public performance/installation by the participants.

Exam / Credit Points

2CP (graded: Practice; non-graded: Free Focus): Regular attendance, successful completion of daily class projects. Participation in final public performance/installation.