KONSTFACK
University of Arts, Crafts and Design

DEPARTMENT OF FINE ART

COURSE DESCRIPTION

FOR THE ELECTIVE COMPONENT: *Sound in interaction* 4.5 ECTS credits

in the courses: *IN DEPTH STUDIES 1* **MKO102,** ELECTIVE MODULES 1 **KOK110**, ELECTIVE COURSES 2 **KOK200** and ELECTIVE COURSES 3 **KOK300**

Spring 2021

Course period: week 5-7

Revised 2020-08-24

Course director: Ricardo Atienza
Participating Teachers: Robin McGinley, Monica Sand, Philip Arnold

GENERAL INFORMATION

Welcome to *Sound in interaction* which is part of the courses *IN DEPTH STUDIES 1* **MKO102,** ELECTIVE MODULES 1 **KOK110**, ELECTIVE COURSES 2 **KOK200** and ELECTIVE COURSES 3 **KOK300**

The aim of this course is to explore interactive and real-time processes within the field of sound and in connection with other sensorial dimensions. Essentially organized as a workshop, the participants will develop their skills via the realization of a collective sensitive environment to be exhibited at the end of the course.

This course will provide as well an introduction to the Sound Lab, a working station where the participant students are welcome to develop their projects.

COURSE LAYOUT AND FORMS OF TEACHING

The programme of the course will be based on the following aspects:

- *Sonic cultures and tools*,

  Exploring and discussing relevant interactive pieces in the fields of Art, Design and Research.

  Learning to describe sound: an overview of the main sonic concepts, methods, and strategies.

  Essentials about sound generation, recording, editing, composing and processing. Overview of the main editing and generative sound tools (software / hardware); special attention will be given to the free software domain,

- *Working with real-time and interactive processes*,

  Sonic flow generation and manipulation, evolving from close to open generative processes.

  Formation in graphical programming environments for sound; this course will focus on the open and free software domain: Pure-Data, IanniX, etc. (cross-OS platforms)

  Introduction to data and image/video interactive structures in Pure-Data.

- *Practice-based learning: a workshop structure*,

  Working with the concepts, methods and tools explored, through the realization of a collective sound project to be exhibited/performed at the end of the course. Each student will be invited to develop its own tools to interact within a collective and open sonic (sensorial) environment.

Course structure and teaching methods:

The course will be structured around a combination of workshops, explorative sessions and lectures. The outline of the course will be the following:

Introduction to the field of sound.

- Describing sonic matter. Sound/audio parameters, concepts, language.
- Sound generation and edition: sound recording, synthesis methods and techniques.
- Introduction to Sound Art / Design / Research.
- Space and Sound: simulating, representing and evoking through sound.
- Body, Motion and Sound: pulse, scale and itinerary. Embodied sound, the reference system.
- Time and Sound: the circle, the line, the point. About variation in sonic discourse.

Exploring/acquiring real-time working processes and tools.

- Sound as a flow, sound in interaction,
- Learning from our physical environment: symbolic/iconic or corporeal (enactive) exchanges.
- Mediated interactions: technology as an exchange tool.
- *Pure-Data*: “learning-by-using” introduction to the software,
- *IanniX*: same logic as for *Pure-Data*.
- Communication in between both software.
- Introduction to microcontrollers, sensors and hardware extensions: Raspberry-Pi, Arduino, etc.
- Introduction to low-tech forms of sound production: piezoelectric components, etc.
- Other forms of interaction in sound.

Producing together a sensorial interactive environment by using the different conceptual and technical tools provided.

SCHEDULE

60 hours distributed along weeks 5 to 7, in 15 half-day (9.00 to 12.00: Monday / Wednesday / Friday) or full-day sessions (9.00-12.00 and 13.00-16.00: Tuesday / Thursday)

COURSE REQUIREMENTS AND EXAMINATION

Each participant student is expected to actively contribute to a collective sound interactive environment to be developed along the course. The aim of this exercise is to provide a fruitful frame for exploring, hands-on, some of the questions and tools shared during the course. Students are expected to take active part in the corresponding group discussions and workshops, and contribute with personal explorations and audio materials to feed the collective working process.

Your grade is reported in Ladok three weeks after the end of the course, at the latest. Should you receive an F (fail), you will be notified in writing. The written statement will entail an explanation for the grading and make clear what you need to do in order for you to receive a pass.

INTENDED LEARNING OUTCOMES AND GRADING CRITERIA

You can find the expected learning outcomes in the course plans *INTRODUCTION* **MKO101,** *IN DEPTH STUDIES 1* **MKO102,** ELECTIVE COURSES 1 **KOK100**, ELECTIVE COURSES 2 **KOK200** and ELECTIVE COURSES 3 **KOK300** in the intranet.

After the course, the student is expected to be able to develop its own sonic and interactive projects. Participants will be able to apply the new concepts, methods and tools acquired to her/his own disciplinary areas and personal explorations.

The grade pass is awarded a student who:

- take active part in the group discussions and workshops preparing and developing the sound interactive installation,
- individually contribute to this installation with personal explorations and audio materials based on some of the strategies, methods and tools provided.

COURSE EVALUATION

At the end of the course, you will be sent an evaluation form where you will be able to answer questions about the course. The evaluation form is anonymous. The primary purpose of course evaluation is to form a basis for quality work and educational development here at Konstfack.

COURSE LITERATURE AND OTHER LEARNING RESOURCES

<u>General literature:</u>

(Non compulsory, for those wanting to deepen their sonic knowledge)

Augoyard, Jean-François / Torgue, Henry (éds.) (2006) : Sonic Experience. A Guide to Everyday Sounds. McGill-Queen's University Press, Montreal, 216 p.

Cage, John (1961): Silence: Lectures and Writings, Wesleyan University Press Paperback

Cardiff, Janet (2005) : The Walk Book, Edited by Thyssen_Bornemisza Art Contemporary

Hellstrom, Björn (2003) : Noise design : architectural modelling and aesthetics of urban acoustic space. Bo Ejeby Forlag, Goteborg

Chion, Michel (2019): Audio-vision: sound on screen Columbia University Press, NY.

Khan, Douglas (1999): Noise, Water, Meat: A History of Sound in the Arts. MIT Press

Labelle, Brandon (2010): Acoustic Territories. Sound Culture and Everyday Life. Continuum

Labelle, Brandon (2006): Background Noise. Perspectives on Sound Art. Continuum

Murray Schafer, Raymond (1977) : The tuning of the world. McClelland and Steward, Toronto

Schaeffer, Pierre (1966) : Traité des objets musicaux. Ed. Seuil, Paris

Truax, Barry (éd.) (1978) : Handbook for Acoustic Ecology. ARC Publications, Vancouver

Truax, Barry (1983) : Acoustic Communication. Ed. Ablex Publishing Co., New Jersey

Wishart, Trevor(1990): On Sonic Art, Harwood Academic Publishers.

Xenakis, Iannis (1990): Formalised Music – Thoughts and Mathematics in Music, Pendragon Press, Stuyvesant, NY.

Sound and sonic literature resources

Some interesting websites where you can find information in the field as well as relevant sound examples:

Ubu: http://www.ubu.com/sound/

Monoskop: https://monoskop.org/Sound_art

Open source software:

Edition,

Audacity: https://www.audacityteam.org/

Sound synthesis,

HighC: http://highc.org/

UPISketch: http://www.centre-iannis-xenakis.org/upisketch

Spectral analysis,

Sonic visualiser: http://www.sonicvisualiser.org/

Acousmographe by GRM: https://inagrm.com/en/showcase/news/203/acousmographe

Real time and Interactivity,

Pure Data (PD), open source visual programming language for sound and multimedia: http://puredata.info

IanniX, open source graphic sequencer: https://www.iannix.org/en/