COURSE CONTENT

Course Code	DM2002
Course Title	Sound Art
Pre-requisites	NIL
No of AUs	3
Contact Hours	39 hours studio contact

Course Aims

This foundation level course will introduce you to the concepts, techniques and tools of sound art, which you will be able to apply in the creation of sound objects and installations, both physical and digital. This learning will build up the foundation for further studies and applications of the creative and the expressive potential of sound art to complex projects.

Intended Learning Outcomes (ILO)

By the end of the course, you should be able to:

1. Describe techniques and tools for creating sound art objects and installations in various scenarios.
2. Develop a range of methodologies and techniques for turning sound into art.
3. Create sound art objects and installations using gained knowledge and skills.
4. Present, discuss, evaluate and reflect on the effectiveness and impact of sound art projects.
5. Identify, constructively discuss and critique various approaches to sound art in a broader context of contemporary culture, music and media art.

Course Content

This course is a platform for exploring the creative aspects of sound art using contemporary techniques. It will provide you with the grounding for an understanding of sound as an artistic medium, and as an integral part of multimedia art forms. You will explore acoustic objects and software tools to develop strategies and techniques for creating sound sculptures and installations. You will be exposed to contemporary genres, exponents, practices and aesthetics relevant to the field.

Sound art in context
The course begins with an introduction to sound art through several examples, followed by a historical overview of the technical and artistic developments which converged into contemporary sound art. We will explore various concepts of sound art, and look at its current context within the arts and culture.

Material sound
An introduction to the material aspects of sound such as acoustics, oscillations, sound waves, harmonies, cymatics and psychoacoustics. This includes the basic physics and math of sound, and an outline of the perceptive and psychological aspects of sonic phenomena.

Sound recording, editing and manipulation
A practical overview of essential techniques and tools for sound recording, editing and manipulation. We will focus on modern digital devices such as Zoom H6, and software platforms

such as Audacity and Pure Data, with an overview of the related alternatives such as Max/MSP, vvvv, TouchDesigner and SuperCollider. We will explore different ways for interfacing and interacting sound with different media using software tools and basic physical computing.

Generated sound and sound as generator
Focusing on contemporary applications of electronics and computer technology, we take an outlook on the conceptual breadth and creative versatility in applying various means to generate sound, and to use sound as a generator in different media environments ranging from visuals to physical events and performances.

Sound manipulation and interaction
Creating sound objects/sculptures individually, and constructing a sound installation working in small team. You will discover which physical and electronic means can be used to design a sound artwork, to link and interface sound interactively with various inputs and outputs. This includes working with MIDI protocol, and an introduction to the OSC.

Designing sound artworks, the role of prototyping
Defining and evolving conceptual frameworks for a sound art project. The importance of developing a project prototype. You will prototype ideas in order to experience your sound art designs before going to the production stage.

Developing and producing sound art projects
Identifying and developing sound art projects through the following stages: elaboration of the project demo (prototype), adjustment of the project goals and outcomes, production, postproduction and presentation.

Class assignments
Assignment 1: You will individually produce one sound artwork in the form of physical object/sculpture.
Assignment 2: You will individually produce one digital sound art work.
Assignment 3: You will individually write a short critical essay (2 pages) on a sound art-related topic, using sources presented in classes, online, and/or the selected essay from the course reading list.
Assignment 4: Working in a team, you will create an original work of sound art: object, sculpture or installation.
Classes will comprise lectures, demonstrations and activities that will be included in the assessment such as tutorials, presentations, class exercises, workshops, and peer/instructor feedback sessions.

Assessment (includes both continuous and summative assessment)

Component	ILO Tested	Programme LO	Weighting	Team/ Individual
Continuous Assessment Assignment 1: Finding, recording and editing sound objects (digital or analogue) 10%	1,2,3,4,5	N.A	30	Individual

Assignment 2: Designing and producing a digital sound object 10% Assignment 3: Writing about sound art-related topic 10%				
Final Project: Assignment 4: Creating and presenting an original work of sound art 50%: - Concept 10% - Team contribution 20% - Project outcome 20%	1,2,3,4,5	N.A	50	Team
Continuous Assessment: **Participation** 20%	5	N.A	20	Individual
Total			100%	

Reading and References

1. Chung, Bryan W.C. *Multimedia Programming with Pure Data*. Birmingham: Packt Publishing, 2013.
2. Collins, Nicolas. *Handmade Electronic Music: The Art of Hardware Hacking*. New York: Routledge, 2009.
3. Franinović, Karmen and Stefania Serafin, eds. *Sonic Interaction Design*. Cambridge: The MIT Press, 2013.
4. Gibbs, Tony. *The Fundamentals of Sonic Art and Sound Design*. New York and London: Bloomsbury Academic, 2007.
5. Hendy, David. *Noise: A Human History of Sound and Listening*. New York: HarperCollins, 2013.
6. Hillerson, Tony. *Programming Sound with Pure Data*. The Pragmatic Bookshelf, 2014.
7. Horowitz, Seth. *The Universal Sense: How Hearing Shapes the Mind*. New York and London: Bloomsbury, 2012.
8. Kahn, Douglas. *Noise, Water, Meat: A History of Sound in the Arts*. Cambridge: The MIT Press, 1999.
9. Kelly, Caleb. *Gallery Sound*. New York and London: Bloomsbury Academic, 2017.
10. Licht, Alan. *Sound Art: Beyond Music, Between Categories*. New York: Rizzoli, 2007.
11. Puckette, Miller. *Theory and Technique of Electronic Music*. World Scientific Press, 2007.
12. Sterne, Jonathan, ed. *The Sound Studies Reader*. New York: Routledge, 2012.
13. Weibel, Peter, ed. *Sound Art: Sound as a Medium of Art*. Cambridge: The MIT Press, 2016.
14. Wishart, Trevor. *On Sonic Art*. New York: Routledge, 1996.

Course Policies and Student Responsibilities

(1) General
You are expected to complete all assigned readings, activities, assignments, attend all classes punctually and complete all scheduled assignments by due dates. You are expected to take responsibility to follow up with assignments and course related announcements. You are expected to participate in all project critiques, class discussions and activities.

(2) Punctuality

You are expected to be punctual for all classes. If you are more than 30 minutes late, you will be deemed as absent and will not be able to sign on the attendance register.

(3) Absenteeism

In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your participation grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Planned Weekly Schedule*

*Subject to adjustment by instructor according to the teaching situation, students' progress, public holidays and unforeseeable circumstances. A revised schedule will be issued to students at the start of the semester.

Week	Topic	Course LO	Readings/ Activities
1	**Sound art in context** A brief introduction to sound art through examples. A historical overview of the technical and artistic developments which converged into contemporary sound art. Different concepts of sound art, and its current context within the arts and culture.	1, 2, 3	**Introductory Lecture: Sound art in context** **In-class discussion** on personal favourites in sound art **Assigned Project 1:** Collect, record and/or assemble an analogue sound object.

2	**Material sound** Introduction to the material aspects of sound such as acoustics, oscillations, sound waves, harmonies, cymatics and psychoacoustics. Basic physics and math of sound. An outline of perceptive and psychological aspects of sonic phenomena.	1, 2, 3, 4	**Lecture: Material sound** **Presentation of Project 1** Critique and feedback. **In-class exercise:** Use the critique and feedback to improve your sound object. Expand your sound object by combining it with other students' sound objects presented in class.
3	**Sound recording and editing** A practical overview of essential techniques and tools for sound recording such as Zoom H6, and sound editing software such as Audacity.	1, 2, 3, 4	**Lecture: Sound recording and editing** **In-class exercise:** Recording and editing a sound collage. **Assigned Project 2:** Design and create a digital sound object.
4	**Generated sound** An outlook on the conceptual and creative aspects of applying various means to generate sound, focusing on contemporary applications of electronics and computer technology.	1, 2, 3, 4	**Lecture: Generated sound** **Presentation of Project 2** Critique and feedback. **In-class exercise:** Use the critique and feedback to improve your sound object. Expand your sound object by combining it with other students' sound objects presented in class.
5	**Sound as generator** An outlook on the conceptual and creative aspects of applying various means to use sound as generator in media environments ranging from visuals to physical events and performances.	1, 2, 3, 4	**Lecture: Sound as generator** **Assigned Project 3: Writing about sound art-related topic** (2 pages) using sources presented in classes, online, and/or the selected essay from the course reading list.
6	**Sound manipulation 1** A practical overview of essential techniques and tools for generating and manipulating sound using Pure Data.	1, 2, 3, 4	**Lecture: Sound manipulation 1** **Assigned Project 4 – Final Project: Creating and an original work of sound art working in small team** Team assembly, team responsibilities, project ideation. Teams will develop 2 to 3 initial ideas for the final project.
7	**Designing sound artworks and the role of prototyping** Defining and evolving conceptual frameworks for a sound art project. The importance of developing project ideas and prototypes for better experience of the sound art designs before going to the production stage.	1, 2, 3, 4	**Presentation of Project 3** Critique and feedback and further discussion. **Project consultation** Concept development.

8	**Student Presentations**	1, 2, 3, 4, 5	Students present, discuss and critique their final project ideas. Each team selects one final project idea for further profiling, prototyping and production. Selected ideas will be posted, and their development documented online (OSS).
9	**Sound manipulation 2** Further techniques and tools for manipulating and interacting sound with Pure Data. An overview of Max/MSP and vvvv. **Developing final projects** Preparing the project demo as an integral phase of the final project production. Work will be based on the inputs from all previous classes, combined with the in-class consultations with the lecturer.	1, 2, 3, 4, 5	**Lectures: Sound manipulation 2** **Project consultations** Developing the demo. **Continuous review of final assignment through various phases of completion** Throughout the last five weeks (9-13), the final project assignment will be subject to review in its various phases of completion. This will be carried out through class presentations by students and will allow for a peer-review-based examination of the work in progress. In this highly interactive process, you will learn through and from the work of your peers and the advice offered by the lecturer. These reviews will take all previously learned concepts into account and test the students in terms of their understanding of applying these to practice.
10	**Sound manipulation 3** Further techniques and tools for manipulating and interacting sound with Pure Data. An overview of TouchDesigner. **Producing final projects** Continues from developing the project demo through production, postproduction and preparing for the presentation.	1, 2, 3, 4, 5	**Lecture: Sound manipulation 3** **Project critique** Project demo and discussion. **Final project production**
11	**Sound manipulation 4** Further techniques and tools for manipulating and interacting sound with Pure Data. An overview of SuperColider. **Producing final projects**	1, 2, 3, 4, 5	**Lecture: Sound manipulation 4** **Project consultations** Project production. **Project critique** Project progress. **Final project production**
12	**Producing final projects**	1, 2, 3, 4, 5	**Project consultations** Project production. **Project critique** Project progress. **Final project production**

13	**Final presentation**	1, 2, 3, 4, 5	**Student Presentations** on final assignment with critique and feedback.