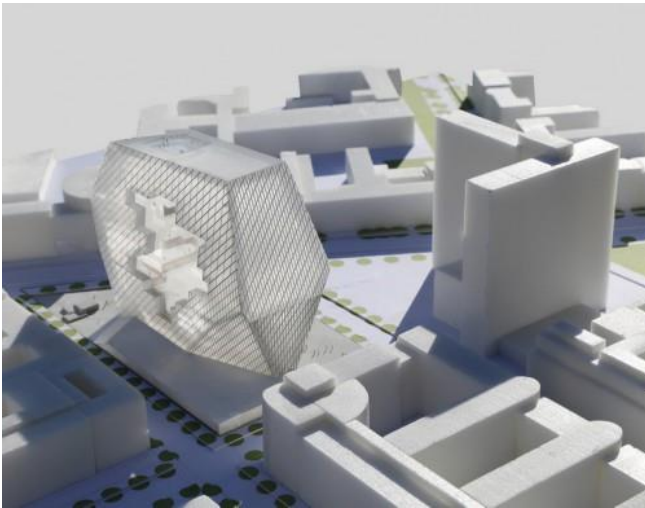




AALBORG UNIVERSITET



Art4: Place and Space of Interaction

2015

Art & Technology - 4th Semester 2015: Place and Space of Interaction

Semester details:

School: **Communication, Art and Technology (CAT)**

Study board: **Art & Technology**

Study regulations: **BA Study Program in Art and Technology, Sept, 2014**

Semester framework theme

We will address an audio focus with your interactive installation works this semester, working with the public-urban environment (inside and/or outside, your choice) of our new building at Rendsburggade 14, 9000 Aalborg. We will need to work closely with stakeholders and other invested parties in the urban environment and address the theme of places (the site), embodied interaction combined with an interactive audio focus. The focus on audio will ensure that our students understand the importance of audio within interactive work—not just as an add-in—but as a pivotal focus and this will balance prior foci with visual aesthetics. In addition, addressing a community of local stakeholders, students will develop relationships with a more permanent set of authorities that can potentially support their work post-degree.

All courses in the semester will support the project and semester theme. All learning stems from work undertaken in prior courses, supports future course work, fits within the larger program overview and extends the students to begin work with stakeholders and potential future work environments.

Semester organisation and time schedule

Structure

This semester contains 3 modules

Module 12: **“Place and Space of Interaction”** (20 ECTS)

Module 13: **“Art in Context II - Media Art Theory ”** (5 ECTS), and

Module 14: **“International Collaboration”** (5 ECTS)

Module 14 is a solo module for 4th semester.

Content

The 3 modules will focus on addressing semester themes of audio, interactivity and public-urban spaces. The content from the modules support the semester theme and projects.

For more detailed information about the content of the three modules on this semester, please see the relevant sections later in this guide.

All dates should be cross-checked with Moodle, which will hold the current version (in case of late-changes).

Semester coordinator: Ann Morrison, morrison@create.aau.dk, 9940 7452

Secretariat assistance: Anne Nielsen, amn@hum.aau.dk, 9940 9919

Place and Space of Interaction: Ann Morrison, morrison@create.aau.dk, 9940 7452

Palle Dahlstedt

Lance Putnam, lp@create.aau.dk

Art in Context II - Media Art Theory and Media Art Theory & Analysis,

Morten Søndergaard, mortenson@hum.aau.dk

Palle Dahlstedt

Lance Putnam

Mark Grimshaw

International Collaboration

Lance Putnam

Palle Dahlstedt

Artistic and Academic Methodology IV (Interaction Design)

Ann Morrison, morrison@create.aau.dk, 9940 7452

Audio Design

Lance Putnam, lp@create.aau.dk

Aesthetics and Interaction

Mads Walther-Hensen, mwh@hum.aau.dk

Interactive Technologies

Rasmus Krarup Madsen, rkm@create.aau.dk, 9940 8092

<p>Module 12 - Place and Space of Interaction (15 ECTS project)+(5 ECTS courses) – 20 ECTS (HSA440023H)</p>
<p>Location: <i>4th semester</i></p>
<p>Module coordinator</p> <p><i>Ann Morrison</i></p> <p><i>Supervisors: Lance Putnam, Palle Dahlstedt and Ann Morrison</i></p>
<p>Type and language</p> <p><i>Project module with support courses, Project work in groups</i></p> <p><i>Language of instruction: English</i></p>
<p>Objectives</p> <p>This semester, students will divide themselves into groups of four to five students and each group will work on a single project with the goal of creating an interactive art installation and/or performance to be included in an exhibition to be held for three evenings in the public spaces in and around (inside and outside, your choice) our new building at Rendsburggade 14, 9000 Aalborg, which we view as an urban environment.</p> <p>This exhibition will be called “Place and Space of Interaction”. Each project group will be required to focus on audio interactive element(s), the experience for the audience and the specificity of the urban (public) site as essential elements of their, interactive installation that promotes, provokes, stand in opposition to, symbolises or represents in some form a space of interaction and transformation. This semester we will exhibit in week 21 (please check for any changes in Moodle calendar).</p> <p>Each group must work in close communication with their supervisors and the nature of (and the stakeholders of) the public site in order to ensure that their installation is approved for being set up at the site (for example, in a public space safety issues must be considered) and that the group has been allocated and/or negotiates.</p> <p>Note that approval for installation and inclusion in the Place and Space of Interaction exhibition is a requirement for passing this semester.</p> <p>The objective of module 5: “Place and Space of Embodied Interaction” is to introduce the students to problem areas and designing solutions in relation to embodied interaction in interactive space, places and installations.</p> <p>During this module, students should acquire:</p> <p>basic knowledge about</p> <ul style="list-style-type: none"> • creation of interactive spaces and installations that encourage embodied activity and an understanding of the situated locale • cybernetic technologies that support active participation • mechanical and electronic technologies for the creation of experience and interaction

- methods and tools for the processing of auditive, tactile and visual information for the support of active interaction by participants within the installation

skills in

- identifying and formulating an art problem within the theme “Place and Space of Embodied Interaction” possibly including cooperation with external user groups
- analyzing the problem and developing alternative concepts for a defined problem within a defined context
- the application of audio and other technologies in connection with the design of content for interactive installations and spaces
- identifying, developing and describing the interaction between audio and spatial effects, choice of materials and technological solutions with a view to achieving clear aesthetic expressions and motivating embodied performance
- selecting appropriate methods in connection with the development of artefacts

competencies in

- the creation of interactive spaces and installations with an artistic quality in terms of architecture, interaction patters, and soundscapes
- architectural and artistic methodology, including interaction between technology, choice of materials and aesthetic expressions
- the use of interactive technologies, including control of media, light and sound
- contextualising own artistic solutions (to state-of-art, socio-cultural requisites and consequences, art theoretical and aesthetic dimensions, etc.)
- describing the completed design at a professional level, and communicating this to external cooperation partners
- identifying own learning needs and to structure own learning related to the theme of the module

Academic content and conjunction with other modules/semesters

Module contents: The module will be conducted as a series of experiments with interactive installations in a particular architectural context. This may be an urban place or stage, architectural setting, a community environment, an exhibition space, etc., where artistic installations are created and tested in relation to providing participant experiences of various kinds (such as the orchestration of social relations, learning experiences, sensory and aesthetic experiences, action-reaction patterns, etc.) In this regard, modalities such as architectural constructs, spatial atmospheres, sound, image, various interactive technologies, and embedded intelligence systems are investigated and applied. The work builds on avenues explored in prior semesters, adding addressing architecture and audio as concerns within the work process, and leads into further work explored in future semesters.

Courses:

In connection with the module, courses may be offered within the following areas:

- Artistic and Academic Methodology IV (Interaction Design)
- Interactive Technologies
- Audio Design 1
- Aesthetics and Interaction

Scope and expected performance

The expected scope of the module in terms of ECTS load. This comprises number of teaching hours, exercises, preparation time, travel activity (if applicable) etc.

Total workload: 20 ECTS = 550 hours

15 ECTS project work =412,5 hours

5 ECTS courses=137,5 hours

Audio 1 2 ECTS=55 hours

Teaching hours 8x2x45min=24hours

Work shop activities

Preparation

Interaction Design AAM 1 ECTS =27,5 hours

Teaching hours 4x2x45min=12 hours

Work shop activities

Preparation

Interactive Technologies 1 ECTS =27,5 hours

Teaching hours 4x2x45min=12 hours

Work shop activities

Preparation

Aesthetics and Interaction 1 ECTS =27,5 hours

Teaching hours 4x2x45min=12 hours

Work shop activities

Preparation

Participants

ArT4

Prerequisites for participation

Passing prior semester load or equivalence.

Artistic and Academic Methodology IV (Interaction Design) 1 ECTS

Lecturer(s): Ann Morrison

Purpose and goals: A goal for artists working with technology is to integrate Interaction Design principles into their interactive installations and artefacts. That is, to strive to create meaningful relationships between the people who interact with the interactive systems that operate at the heart of the environments created. Interaction Design is useful for artists to develop a richer understanding of the experience for their participants and to improve the interactive systems they design and implement.

Literature: Fieldwork for Design: Theory and Practice by David Randall Richard Harper and Mark Rouncefield. Slides and other resources will be made available on moodle.

Assessment: Students will do practical exercises on the methods presented in the lecture. Documents produced for this course may be included as part of the final report, but need to be identified as content from this course.

Session 1: Identify design, artistic, and interaction design goals.

Lecture and workshop

Lecturer: Ann Morrison

Content: Identification of the design problem(s) addressed in the project. Identification of the artistic goals that are the focus of the 'work' proposed for this space. Identification and unpacking of the kinds of interactions the proposed work will effect for the participants.

Assignments: As above. Each group will work on identifying design problems, artistic goals and the intended interaction design for their project.

Literature: Chapters 2, Fieldwork for Design: Theory and Practice by David Randall Richard Harper and Mark Rouncefield.

Session 2: Observation methods.

Lecture and workshop

Lecturer: Ann Morrison

Content: Methods: Note-taking, photographs and/or videos. Focus and observation in situ without disrupting 'natural' behaviour of the space. Design open-ended interviews and questionnaires. Identify artistic and design focus for observation.

Assignments: As above. Discuss and identify the priorities and focus of observations for your own project. Design and develop methods to use for sessions 3 & 4. Hand in work from Sessions 1 and 2 for comment and feedback, in preparation for implementation in sessions 3&4.

Literature: Chapters 2, Fieldwork for Design: Theory and Practice by David Randall Richard Harper and Mark Rouncefield.

Session 3: Ethnography: Study of stakeholders in situ I.

Workshop at exhibition site

Lecturer: Ann Morrison

Content: Set up a low/fi life size version of the intended installation at the site. Each group acts as participants in each others work. Observation of the groups and individuals as they naturally move, interact in and use the space by project groups; observation by taking notes, photographs and/or videos.

Assignments: Integrate observations and analysis of data collected into project work

Literature: Chapter 6. Ethnography and How to Do It, Fieldwork for Design: Theory and Practice by David Randall Richard Harper and Mark Rouncefield.

Session 4: Ethnography: Study of stakeholders in situ II

Workshop at exhibition site

Lecturer: Ann Morrison

Content: Discuss findings in groups and narrow in on emergent findings. Critically refelect on own and other groups work. Continue with more honed observation focus. Identify interactions that

occur naturally and fine-tune your own project from prolonged site observation.

Assignments: Integrate observations and analysis of data collected into project work.

Literature: Chapter 6. Ethnography and How to Do It, Fieldwork for Design: Theory and Practice by David Randall Richard Harper and Mark Rouncefield.

Audio Design 2 ECTS

Lecturer(s): Lance Putnam

Purpose and Goals:

Audio Design introduces fundamental concepts of digital sound synthesis and transformation for use in interactive (multi)media works. The goal of the course is for students to acquire a more in-depth understanding of sound from historical, physical, perceptual, mathematical, and computational/systemic perspectives and to use this knowledge to effectively translate sonic intuitions into practical results. Students will learn how to use "unit generator" building blocks to create more complex sound processing networks. Assignments will be done using AlloSystem and Gamma, thus prior experience in C++ programming is required.

Literature:

Roads, C. (1996). The Computer Music Tutorial. MIT Press.

de Poli, G. (1983). A tutorial on digital sound synthesis techniques. Computer Music Journal, 7(4):8-26.

(1) Mathematics and Psychoacoustics of Sound

Review of physics and mathematics of (digital) sound. Psychoacoustics and hearing (dynamics, frequencies, timbre). History of Max Mathews' MUSIC N programs and the unit generator concept.

Assignment(s):

Problem set related to lecture material.

Literature:

Roads (1996). "Basics of Sound Signals", pp.14-20. (for review)

Roads (1996). "Digital Audio Concepts", pp. 5-48. (for review)

Roads (1996). "Psychoacoustics in Computer Music", pp.1053-1069.

Mathews, M. V. (1963). The digital computer as a musical instrument. Science, 142:553-557.

Further reading:

Sound and Hearing: <http://www.cochlea.org/en/spe/sound.html>

McDermott, J. H. (2012). Neuroscience of Preference and Choice, chapter Auditory Preferences and Aesthetics: Music, Voices, and Everyday Sounds, pages 227–256. Elsevier Inc.

(2) Sources and Additive Synthesis

Sample playback, oscillators, and noise generators; oscillator beating, detuning, and combing; amplitude control using envelopes. Additive synthesis using sinusoids and Fourier series.

Assignment(s):

Program one "voice" of an additive synthesizer.

Literature:

Roads (1996). "Sampling and Additive Synthesis", pp.115-156.

de Poli (1983). "Fixed-Waveform Synthesis", pp.8-10.

de Poli (1983). "Additive Synthesis", pp.10-11.

Stauff (1999). "Celeste", <http://www.organstops.org/c/Celeste.html>

"Jim Demonstrates the Voix Celeste", http://www.youtube.com/watch?v=e55H_I-6A5U

(3) Filters and Subtractive Synthesis

Spectral filters (lowpass, highpass, bandpass, bandstop), comb filtering, and resonance. Source-filter model, formant synthesis, channel vocoder.

Assignment(s):

Program a "vox humana" synthesizer.

Literature:

Roads (1996). "Subtractive Synthesis".

de Poli (1983). "Subtractive Synthesis", pp.14-15.

(4) Modulation and Non-linear Synthesis

Amplitude modulation, frequency modulation, and waveshaping.

Assignment(s):

Program single voices of AM, FM, and waveshaping synthesizers.

Literature:

Roads (1996). "Modulation Synthesis", pp.213-262.

de Poli (1983). "Nonlinear Techniques", pp.15-24.

Further reading:

Chowning, J. (1973). The synthesis of complex audio spectra by means of frequency modulation.

Audio Engineering Society, 21(7):526–534.

(5) Effects 1: Amplitude-, Frequency-, and Filter-based Effects

The first lecture on effects will focus on direct parametric modulation of amplitude and frequency. Specific effects include tremolo, vibrato, legato/portamento, trilling/arpeggiation, spectral gliding, and wah-wah.

Assignment(s):

Enrich one of the previously programmed synthesizer voices with vibrato and tremolo.

Literature:

Formosa, D. (2013). A brief history of tremolo. Premier Guitar.

<http://www.premierguitar.com/articles/19777-a-brief-history-of-tremolo>

"Vibrato - Wikipedia, the free encyclopedia", <http://en.wikipedia.org/wiki/Vibrato>

Schleske. "The Psychoacoustic Secret of Vibrato", <http://www.schleske.de/en/our-research/handbook-violinacoustics/vibrato-of-the-musician.html>

(6) Effects 2: Delay-based Effects

The second effects lecture will introduce effects based on the modulation of delay lines that can be applied to any sounds. Effects covered are echo, vibrato, flanger, phasing, chorus, pitch-shifting, frequency-shifting, and reverb.

Assignment(s):

Program your own chorus effect to simulate multiple voices in unison.

Literature:

Bode, H. (1984). History of electronic sound modification. Journal of the Audio Engineering Society, 32(10):730-739.

Dutilleux, P. (1998). Filters, delays, modulations, and demodulations: A tutorial. In Proceedings of the DAFX98 Workshop on Digital Audio Effects.

de Poli (1983). "Reverberation", pp.15.

(7) Frequency-domain Processing

Introduction to the discrete Fourier transform (DFT), short-time Fourier transform (STFT) and phase vocoder. Analysis, transformation, and resynthesis in the frequency domain.

Assignment(s):

Write a program to manipulate a sound in the frequency domain.

Literature:

Roads (1996). "Spectrum Analysis", pp.533.

Wishart, T. (2000). Computer sound transformation.
<http://www.trevorwishart.co.uk/transformation.html> (read "The Instruments - (1) Spectral Transformation using the Phase Vocoder").

(8) Feature Extraction

This lecture covers some of the basic high-level features that can be extracted from audio streams. Topics include: amplitude envelope estimation, filter banks, zero-crossing rate, and spectral centroid/spread.

Assignment(s):

Create a program that maps several audio features of an input sound (line input, recording, etc.) onto parameters of a synthesized sound or graphical object.

Literature:

Sections 1, 2.4.3, 2.5, 4.2, 6.1.1, 6.1.2 from:

Peeters, G. (2004). A large set of audio features for sound description (similarity and classification) in the CUIDADO project. Technical report, Ircam, Analysis/Synthesis Team.

(Note: There are many other features presented in this report that we will not discuss, but you are welcome to use them in the assignment.)

Zwicker, E. (1961). Subdivision of the audible frequency range into critical bands (frequenzgruppen). Journal of the Acoustical Society of America, 33(2):248.

Interactive Technologies 1 ECTS

Lecturer(s): Rasmus K Madsen

Purpose and Goals: This course will address building interactive systems for active and embodied audience participation. It will also address using technology outside of the laboratory, what we need to consider when using technology out in the real world and how can we implement it in a meaningful way.

The course will survey a variety of technologies, which can be applied in the context of the semester project.

Lecture 1 – Audio Technology

Rasmus K Madsen

Audio technology will cover topics related to recording, processing and amplifying audio signals.

Which kind of technology is suitable for our specific requirements

Assignment(s):

Exercises from material covered that are required to be completed in class and/or before next session

Literature: Douglas Self, Small Signal Audio Design

Lecture 2 – Biosensing

Rasmus K Madsen

Biosensing will cover different ways of measuring biosignals from living beings, such as galvanic skin responses, heartbeat, EMG, EEG, etc. The lecture will also contain exercises in creating a biosensing artefact, based on available sensors

Assignment(s):

Exercises from material covered that are required to be completed in class and/or before next session

Literature: Sean M. Montgomery and Ira M. Laefsky, Biosensing in MAKE Volume 26, 2011

Lecture 3 – Taking Technology out of the Lab

Rasmus K Madsen

Taking technology out of the lab will cover different ways making sure the technology we work with will perform as expected outside the laboratory. This will cover safety, ingress protection, weather proofing and power supply considerations

Assignment(s):

Exercises from material covered that are required to be completed in class and/or before next

session

Literature: ANSI/IEC 60529 and Make: Electronics

Lecture 4 – Project Specific Problems and Examples

Rasmus K Madsen

In this lecture we will look at examples of previous work in the field and analyse their design, also the groups semester projects will be presented and any technical issues can be discussed

Assignment(s):

Exercises from material covered that are required to be completed in class and/or before next session

Literature: TBA according to student needs and requests.

Aesthetics and Interaction-1 ECTS

Secretary:-Anne Nielsen

Responsible Coordinator:-Ann Morrison

Lecturer:-Mads Walther-Hansen

Purpose and goals:-In this course we will discuss different approaches to the aesthetics of sound in the context of the spatial environment in which these sounds are heard. The student will learn tools to make sound designs that function as meaningful mediations between body and space. We will specifically focus on the design of audio-walks in public places.

Assessment:-Assessment will be based on a presentation of the final group

Title 1: Sound, space and embodied cognition

Lecturer: Mads Walther-Hansen

Content: Introduction to audio walks and sound art in public space. Students are introduced to the main categories of sound in auditory environments, and the auditory cues that allow us to navigate in space. We will also discuss techniques to stage the aesthetic and social function of different spaces and discuss how sound influences our moods and associations.

Assignments: Using Hindenburg (radio editing software), we will create virtual sound environments to transform the mood and atmosphere of actual spatial settings. Work will be carried out in groups. Bring your own headphones, smartphone and laptop.

Literature: Schafer, R. Murray. (2004). The music of the environment. In C. Cox & D. Warner (Eds.), Audio Culture: Readings in Modern Music. New York and London: Continuum.

Blessner, Barry, & Salter, Linda-Ruth. (2007). Introduction In Spaces Speak, are you Listening?: Experiencing Aural Architecture. Cambridge, Mass.: MIT Press.

Recommended reading:

Leman, Marc, & Maes, Pieter-Jan. (2014). Music Perception and Embodied Music Cognition. In L. Shapiro (Ed.), The Routledge Handbook of Embodied Cognition. Oxon and New York: Routledge.

Title 2: Sound and narrative

Lecturer: Mads Walther-Hansen

Content: In this session, students will learn about different narrative models. We will explore narrative structures in sound design and learn how to bring about change in the emotional responses and physical actions of listeners.

In the last part of this session students will present their final projects.

Assignments: As above. In this workshop session we will focus more on the creation of a sonic narrative.

Literature: Clarke, Eric F. (2013). Music, Space and Subjectivity. In G. Born (Ed.), *Music, Sound and Space: Transformations of Public and Privat Experience* (pp. 90-111). Cambridge: Cambridge University Press.

Examination

The module is completed with: Student project in exhibition (the product), a written report and oral examination.

Examination 12

An external combined written and oral examination in **Module 12 “Place and Space of Interaction”**.

The examination will take the form of a conversation between the student, the examiner and an external examiner on the basis of the project report prepared by the student(s), which may be in the form of a report or portfolio as well as the product created by the student. The project exam will also address other content from the module courses.

Form of examination: b)

Number of pages: the written work must not exceed 10 pages per student (15 pages in the case of individual reports).

Duration of examination: 20 minutes per student and 10 minutes for assessment and communication of grades per group, however, the duration of the examination is maximum 2 hours.

Evaluation: Grading according to the 7-point scale.

Proportional weighting: An overall equal evaluation is made of the project report, the product, and the oral performance.

Credits: 20 ECTS

The written report, the product and the oral examination should demonstrate that the student has fulfilled the objectives outlined above.

<p>Module 13: “Art in Context II - Media Art Theory ” (5 ECTS) (HSA440024D)</p>
<p>Location</p> <p><i>4th semester</i></p>
<p>Module coordinator</p> <p>Morten Søndergaard</p>
<p>Type and language</p> <p>Method of working: Individual work in relation to course activities</p> <p><i>Language of instruction: English</i></p>
<p>Objectives</p> <p>This course serves as a general introduction to art and technology as a theoretical field of study. As such it continues the trajectory of Art in Context 1, however this semester with a focus on media art before and after the ‘digital revolution’. Whereas the theories and humanistic themes of perception, hermeneutics, phenomenology, systems, imagination, and beauty introduced in AiC 1 are still very relevant for the study of art they tend to be challenged and criticized when technology, science and media enters the scene. From this, different theoretical and artistic practices emerge that not only circulate ideas about technology, science and media into critical thinking but also take up new paths of investigations and methods.</p> <p>The course is structured around eight interconnected lectures focused on giving the students an introduction to different seminal theories, practices and ideas accompanying the still more intensive relationship between art, technology, media and science in the 20th and 21st Century – in short, here, termed Media Art.</p> <p>Learning objectives:</p> <p>During this module, students should acquire:</p> <p>Basic knowledge about</p> <ul style="list-style-type: none"> • media art theories and concepts with special focus on cross-disciplinarity and synergy between art and media technology • various methods of analysis of media art product and projects in regard to their cultural, personal, aesthetic and epistemological significance • audience and user concepts of media art and the related behavioral and aesthetic preferences <p>Skills in</p> <ul style="list-style-type: none"> • using and applying basic theories and methods in regard to analyses of media art works • describing artistic challenges and aesthetic formats of media art

- identifying target groups and their behavior and aesthetic preferences in relation to experience potentials of media art works

Competencies in

- applying theories and methodologies of media art
- analyzing and discussing media art works as cultural and aesthetic phenomena
- applying knowledge about user groups and user behavior in analysis and concept design of media art works

Academic content and conjunction with other modules/semesters

Module contents: The module "Art in Context II" examines media art works and their cultural, aesthetic, social, and technological positions in the 20th and 21st centuries. Students learn about relevant theoretical perspectives on media art. They learn to apply those theories in analysis of media art works. They will also investigate varying audience and user concepts of different instantiations of media art.

The module will consist of lectures, workshops and seminars.

Scope and expected performance

The expected scope of the module in terms of ECTS load. This comprises number of teaching hours, exercises, preparation time, travel activity (if applicable) etc.

Participants

ArT4

Prerequisites for participation

Module activities (course sessions etc.)

Courses:

In connection with the module, courses may be offered within the following area:

- Media Art Theory & Analysis

Title 1: **Media Art Theory - Introduction**

Lecturer: Morten Søndergaard

Content:

What is media art theory? This course will give the student an overview of the most important theories within the expanding field of media art. In this introductory lecture some basic concepts and theoretical problems in the media art field that are also resonating in Walter Benjamin's seminal text about art in the age of technological reproduction: Authenticity, the subject of

technology, and mediated (social) experience. And within this overall new direction of the moderne culture, the lecture will also be looking at what aesthetic paradigms are at play in media art.

Assignments: In-course assignments

Literature: Walter Benjamin (1935) "The Workd of Art in the Age of Mechanical Reproduction". (Moodle)

Further reading:

Claudia Giannetti, Aesthetic Paradigms of Media Art (Mediaartnet.org, ZKM, 2004).

http://www.mediaartnet.org/themes/aesthetics_of_the_digital/aesthetic_paradigms/

Title 2: Intermedia Art & Fluxus:

Lecturer: Morten Søndergaard

Content: The dynamics and experiments of the 60s are manifold – and has been told and retold in many versions. It's impact on the field of Art & Technology, however, is immense – and still to be felt. In other words, the context of any discussion and practice in the field of Art & Technology always points back to this specific time in some way – not excluding influence from other periods or artists, of course. This lecture will introduce the students to the important experiments of intermedia art and Fluxus.

Assignments: In-course assignments

Literature: Dick Higgins, "Statement on Intermedia Art", 1966 to be found here: <http://www.artpool.hu/Fluxus/Higgins/intermedia2.html>

Further reading:

Greenberg, Clement 1939. "Avant-Garde and Kitsch" in Harrison, c. ; Wood, P. 2002. Art in Theory. Malden, USA: Blackwel. Or to be found here: <http://www.sharecom.ca/greenberg/kitsch.html>

(Moodle) Morten Søndergaard, "Flexowriters, Punch Paper Poetry and Ontological Gaps: What happened to the Unheard Avant-gardes?" in Gade, Rune et.al. ed., Performing Archives, Copenhagen/San Francisco: Museum Tusculanum Press / PSi Book Series, 2013.

Title 3: Cybernetics and Art

Lecturer: Palle Dahlstedt

Content: According to Edward E Shanken, artists play an important role in making ideas from diverse fields feed into each other and thereby actively facilitating those ideas being concretized and historized into cultural configurations. This session will introduce to theories and examples of Cybernetics and Telematics and ask the crucial question: Is art facilitating science in the same way?

Assignments: In-course assignments

Literature: Edward E. Shanken, "From Cybernetics to Telematics" (excerpts) in: Roy Ascott

2007 (2003), *Telematic Embrace - Visionary Theories of Art, Technology, and Consciousness*, University of California Press. (Moodle)

Further Reading - will be referred to during class:

Stephen Wilson, "Art & Science as Cultural Acts" In: Wilson 2002, *Information Arts - Intersections of Art, Technology, and Science*. MIT Press, pp. 11-33.

Andrew Pickering: *Neo-Sigma: Art, Agency and Revolution*, 2012. (Moodle)

Title 4: (New) Media Art – Lev Manovich .

Lecturer: Palle Dahlstedt

Content: An introduction to the concept, practice, theory, condition and (short) genealogy of New Media Art with special reference to Lev Manovich's *The Language of New Media* (1999).

From 'environmental' experiments by Nam June Paik, Jack Burnham and Steina Vasulka in the 1960s and 1970s to the digital experiments and 'global' information-flow of the 90s and 00s by, for instance, Mark Hansen and Ben Rubin, this lecture will look at different examples theories about 'data' in art. Perspectives will be drawn to media art theory, digital art theory – but most importantly will be the contextualisation of art as communication and real time information from the world beyond our perceptual boundaries.

Assignments: Student presentations

Literature: Lev Manovich (1998), *The Database as Symbolic Form*. (Moodle)

Lev Manovich (1999), *The Language of New Media*, MIT Press. Pp.43-75 (Moodle)

Further Reading.

Christiane Paul, *Digital Art*, Thames & Hudson, Chapter 1

Title 5: Electroacoustics

Lecturer: Mark Grimshaw

Content:

This lecture traces developments and theories in electroacoustic composition. Tracing its roots back to the sound experiments and *intona rumori* of the Futurists at the start of the 20th century, the lecture progresses to the tape music and *Musique Concrète* of the 1940s and 1950s through to electronic music and computer-generated music. The emphasis is on elucidating the underlying themes and theories of the new sound art.

Assignments:

Literature: Emerson, S. (ed.). 1986. *The Language of Electroacoustic Music*. London:

Macmillan. (Main reading text)

Emerson, S. (ed.). 2000. *Music, Electronic Media and Culture*. Aldershot,

UK: Ashgate Publishing.

Griffiths, P. 1995. *Modern Music and After: Directions Since 1945*. Oxford: Oxford University Press.

Wishart, T. 1996. *On Sonic Art*. (New and revised edition). Contemporary Music Studies 12. Amsterdam: Harwood Academic Publishers.

Title 6: Sound Walks and Cityscapes.

Lecturer: Mark Grimshaw

Content:

The development of sound walks as an art form is traced from its beginnings in the pioneering acoustic ecology work of the World Soundscape Project and particularly the work of R. Murray Schafer and Barry Truax. How the soundscape developed from an ecological science to a sound art form is investigated through the works of artists such as Janet Cardiff and writers such as Salomé Voegelin.

Assignments:

Literature: Main text: Schafer, R. M. (1994). *The soundscape: Our sonic environment and the tuning of the world*. Rochester Vt: Destiny Books.

Also read:

Crossing Listening Paths. 2011. *Soundscape: The Journal of Acoustic*

Ecology 11 (1). http://wfae.proscenia.net/journal/scape_16.pdf.

Truax, B. (2001). *Acoustic communication* 2nd ed. Westport, Conn: Ablex.

World soundscape project. n.d. Retrieved December 8, 2014, from

<http://www.sfu.ca/~truax/wsp.html>

Voegelin, S. 2013. *Sonic Possible Worlds*. In *Leonardo Music Journal*

(Special Issue on Sound Art). Retrieved December 8, 2014 from

http://salomevoegelin.net/public_html/salomevoegelin.net/sonic_possible_world.html **(Main reading text)**

Title 7: Big Data Art - from mass visualization to non-privacy

Lecturer: Palle Dahlstedt

Content:

We look at two primary perspectives of Big Data as a basis for the arts. One is the use of big data sets, visualized into shapes and form loaded with inherited meaning, or visualized to communicate

an unexpected perspective. The other deals with the privacy and integrity issues connected to Big Data, Everything you do leaves a trace, and consolidation of such traces can be brought into a scarily accurate image. A number of artists have explored this, and we look at a series of examples from the Big Data Art 2013 exhibition in München.

Assignments:

Literature:

A brief introduction with some examples here:

<http://nicolatriscott.org/2012/09/23/art-in-the-age-of-big-data/>

http://www.huffingtonpost.co.uk/peter-yeung/data-privacy-nsa-qchq_b_5378787.html

<http://www.dw.de/artists-give-big-data-a-new-purpose/a-17243460>

R Kosara (2007) Visualization criticism-the missing link between information visualization and art, Proceedings of the 11th International Conference on Information Visualization, IV'07. pp, 631-636

Andrea Lau, Andrew Vande Moere (2007) Towards a Model of Information Aesthetics in Information Visualization, Proceedings of the 11th International Conference Information Visualization IV'07, pp 87-92 (Moodle)

Further reading:

Min Chen, Shiwen Mao, Yunhao Liu (2014) Big Data: A Survey , Mobile Networks and Applications, 19(2), pp 171-209

Sack, W. (2007) Aesthetics of information visualization. In C. Paul, V. Vesna, and M. Lovejoy (Eds.): Context Providers. University of Minnesota Press, Minneapolis, MN, USA

Title 8: Bio Art - Artificial Life and wet biology

Lecturer: Palle Dahlstedt

Content:

Biology as a science and theoretical subject has inspired artists in many different ways. We look at two primary perspectives: Artificial Life art, i.e., art based on theoretical models and computer simulations of biological mechanisms (such as evolution), leading to complex patterns and behavior, and art implemented in actual biological matter, such as genetic art and various tissue growing projects.

Assignments:

Literature:

J. McCormack (2013) Art, Aesthetics, Evolution, in P. Machado, J. McDermott & A. Carballa (eds) Proceedings of EvoMUSART 2013, Springer, Berlin; Heidelberg. pp. 1-12 (Moodle)

Bulatov, Dmitry, Genetic engineering and contemporary art: structural aspects and the problems, Trames, 12/2007, Volume 11, Issue 4, p. 443 (Moodle)

Further reading:

J. McCormack (2005) Open Problems in Evolutionary Music and Art, in F. Rothlauf et al. (eds), Lecture Notes in Computer Science, Vol 3449, Springer-Verlag, Berlin, Germany, pp 428-436 (Moodle)

Dahlstedt, Palle (2009) Thoughts on Creative Evolution: A Meta-generative Approach to Composition, Contemporary Music Review, 28(1), 43-55 (Moodle)

Sack, W. (2007) Aesthetics of information visualization. In C. Paul, V. Vesna, and M. Lovejoy (Eds.): Context Providers. University of Minnesota Press, Minneapolis, MN, USA

Examination

The module *Art in Context 2* includes a one week writing period from outset of examination question(s). See study guide for further detail!

Examination 13

An internal written examination in **Module 13: “Art in Context II – Media Art Theory”**

Form of examination: c)

The examination is a 7-day assignment on a set subject. The examiner and an additional internal examiner according to 7-point scale evaluate the assignment.

Number of pages: the written work must not exceed 10 pages.

Credits: 5 ECTS

The examination should demonstrate that the student has fulfilled the objectives outlined above.

<p>Module 14 “International Collaboration” (International kollaboration) (5 ECTS) (HSA440025D)</p> <p>Module 37: International Study Tour/International studietur (3 ECTS)</p>
<p>Location</p> <p>4th semester</p>
<p>Module coordinator</p> <p>Lance Putnam and Palle Dahlsted</p>
<p>Type and language</p> <p>group work in relation to course activities and seminars</p> <p>English</p>
<p>Module 14: International Collaboration.</p> <p>Objectives</p> <p>Module contents: The module “International Collaboration” is a theoretical and practical introduction to methods of collaboration with international art institutions and/or art and design companies, and its possibilities and challenges. The students learn how to organize and implement an international collaborative project. The teaching format is a workshop. The project is supported by relevant literature and cases studies that thematize and discuss central ideas such as globalization, networked culture, and collaborative creativity.</p> <p>Courses:</p> <p>In connection with the module, courses may be offered within the following area:</p> <ul style="list-style-type: none"> • International Collaboration – Theory and Practice <p>Learning objectives:</p> <p>During this module, students should acquire:</p> <p>Basic knowledge about</p> <ul style="list-style-type: none"> • theories and methods of collaborative and networked creativity • the influence of globalization on media art, global interventions and urbanity • technological conditions and solutions of collaborative work

Skills in

- creating conceptual and technological frameworks for collaboration
- devising concrete methods of collaboration on the basis of existing methodologies in the field

Competencies in

- analyzing existing conditions of collaboration including analysis of user groups and participating institutions
- reflecting on present cultural-historical and media technological conditions and prospective solutions of international collaboration

The module is completed with:

Examination 14

An internal written examination in **Module 14 “International Collaboration”**

Form of examination: c)

The examination consists is an international collaboration project and a reflective report, which must not exceed 10 pages.

Evaluation: pass/fail. One examiner evaluates the assignment. In case of a Fail grade, an additional examiner will also evaluate the assignment.

Substitution: the examination may be substituted by satisfactory and active participation in courses, i.e. 80% presence and submission of all assignments set during the course.

Credits: 5 ECTS

The examination should demonstrate that the student has fulfilled the objectives outlined above.

Module 37: International Study Tour

Location of module: fourth semester

Credits: 3 ECTS

Method of working: Free study activity. Individual or group work in connection with course and seminar activities.

Module contents:

The study tour will be planned with a view to studying international projects within art, architecture, and design. Interviews with significant artist and visits to and possibly workshops at educational institutions relevant for the programme and the academic area will also be included.

On the basis of analysis of artefacts, seminars may be conducted with a view to new interpretation,

re-design and re-production.

Objectives:

During this module, students should acquire:

Knowledge about

- Contemporary art, architecture and design relevant for Art and Technology in an international contexts

Skills in

- Describing and analysing artefacts and works within art, architecture, and design in this context

Competencies in

- Presenting oral and written analysis of art, architecture and design relevant for Art and Technology.

The Module is completed with:

Examination 37

Examination in **Module 37: “International Study Tour”**

Examination form: c) The examination is a free assignment which will be evaluated by an internal examiner and awarded a pass/fail grade.

Number of pages: max 5

Evaluation form: Pass/fail. The assignment will be assessed by the examiner. Assignments which are evaluated as failed will also be evaluated by an external examiner.

Substitution: The examination may be substituted by satisfactory active participation in the course, defined as 80% attendance and submission of all course assignments given during the course.

Credits: 3 ECTS

This examination must demonstrate that the student fulfils the objectives of the module.

Module 14 – International Collaboration (5 ECTS) and Module 37 – International Study Trip (3 ECTS)

In this course which combines two modules, students will learn about the collaborative process from a highly practical point of view, while at the same time participate in a study trip to Gothenburg and the Steneby School of Arts and Crafts, north of Gothenburg, which is a part of University of Gothenburg. Students will work on a sound-related project in collaboration with students from the Steneby. The course will consist of two distinct phases: a preparatory phase and a building phase. There will be a series of workshops in Aalborg to help you prepare and initiate the project work. The study trip will consist of three days at Steneby where you will build your

project and have an informal exhibition and critique. Other pedagogical activities, such as artist talks and gallery visits, may be planned in and around Gothenburg as part of the trip.

All students are expected to join the collaboration workshops at the Steneby school. If serious practical circumstances prevent you from joining, please contact the teachers.

ASSIGNMENTS

In addition to the stated assignments under each lesson, for each lesson you are required to log your activities online on WordPress or a similar such site.

EXAMINATION

Per study regulations, the exam for Module 14: International Collaboration is an international collaboration project and individually-written 10-page reflective report. (See the description of the examination from the study regulation above). Those who cannot attend the study trip to Gothenburg/Steneby will still be assigned to project groups and expected to contribute to their group's project to the same extent as the others, possibly preparing suitable parts of the project ahead of time in Aalborg. All students, regardless of whether they attend the study trip, are examined under the same conditions. The group must also prepare online documentation of the project including a brief abstract and media such as images, video and/or sound.

The examination for Module 37: International Study Tour will be substituted by active participation defined as 80% attendance at all planned events during the trip.

STUDY TRIP SCHEDULE AND DETAILS

April 13, Monday	Travel from Aalborg to Gothenburg (bus, ferry) Possible exhibition or study visit in Gothenburg Travel to Steneby (train, bus)
April 14, Tuesday	Introduction and workshop together with Steneby students
April 15, Wednesday	Workshop
April 16, Thursday	Workshop
April 17, Friday	Travel from Steneby to Gothenburg Possible exhibition or study visit in Gothenburg Travel to Aalborg

Transportation details will be communicated in the beginning of the course, and students are expected to cover their own travel costs, possible exhibition tickets and food. Students need to bring a sleeping pad and a sleeping bag, since the accommodation will be budget-style (i.e., free)

on a classroom floor or equivalent.

Information about the Steneby school and their bachelor programs:

<http://steneby.se/in-english/>

<http://www.hdk.gu.se/en/programmes-courses/crafts-and-design-steneby>

Scope and expected performance

Participants

Art 4 students

Prerequisites for participation

Module activities (course sessions etc.)

LESSONS

(1) Idea Formulation

Sort out ideas, concept, and respective competencies among participants. Form project groups (on both sides) depending on interests and competencies.

Assignment(s): Create a shared Wordpress (or equivalent) site to document your work process. Research Steneby School to assess competences of students (e.g., what they have expertise in, what have they made, what facilities they have). Brainstorm possible project ideas. Make initial contact with Steneby students.

Lecturer(s): PD

(2) Living Laboratories: Collaborative Practices I

This lecture gives an introduction to collaborative practices between artists, curators and audiences. Based on theories, ideas and examples from international collaborative practices, we will discuss what would be the optimal conditions for production of interactive media art?

Lecturer(s): MS

Literature:

Lizzie Muller and Ernest Edmonds: Living Laboratories: Making and Curating Interactive Art, Taylor and Francis Online Publication, 2007 (Moodle)

Assignment(s): Write a summary of the Muller / Edmonds text

(3) Research on Related Works and Context

Conduct background research to find related works and what the larger context is for your own work.

Assignment(s): Find at least three related works and write a brief abstract describing the key points of each. Situate your own ideas within a larger theoretical and/or aesthetic context. Refer to any works that are not your own using the Harvard referencing style.

Lecturer(s): PD

(4) Idea Walkthrough

Review/walkthrough of each other's project ideas.

Assignment(s): An oral presentation that includes (1) a description of your project idea, (2) the larger context it is situated in and (3) related works. In addition, present a detailed plan for what remains to be done on the project and a timeplan for the workdays at Steneby.

Lecturer(s): LP, PD, MS

(5) Prototyping I

Workshop on prototyping ideas at Steneby.

Lecturer(s): LP, PD

(6) Prototyping II

Workshop on prototyping ideas at Steneby.

Lecturer(s): LP, PD

(7) Project Critique

Critique of each others projects at Steneby.

Assignment(s): Present your project(s) to the class.

Lecturer(s): LP, PD

(8) Collaborative Practices II: Transdisciplinarity and Participation

This lecture goes further into the ideas of collaboration and its impact on the art production and curating as 'social' or 'real' events or situations. Examples will be given as to how this 'dream' of the social enters into the work-situation of artists and curators on a number of levels, always approaching transdisciplinarity.

Lecturer(s): MS

Literature:

Claire Bishop: "The Social Turn. Collaboration and its discontents". In *Artificial Hells*, London:

Verso, pp 11-41. (Moodle)

Mogens Jacobsen and Morten Søndergaard: "MAPPING the domains of Media Art Practice : A trans-disciplinary enquiry into collaborative creative processes" In: Ascott, Roy ed.: Technoetic Arts, Vol. 8, Nr. 1, 01.06.2010, s. 77-84. (Moodle)

Assignment(s): Write a reflection on your prototype based on the Muller/Edmonds and Bishop texts.