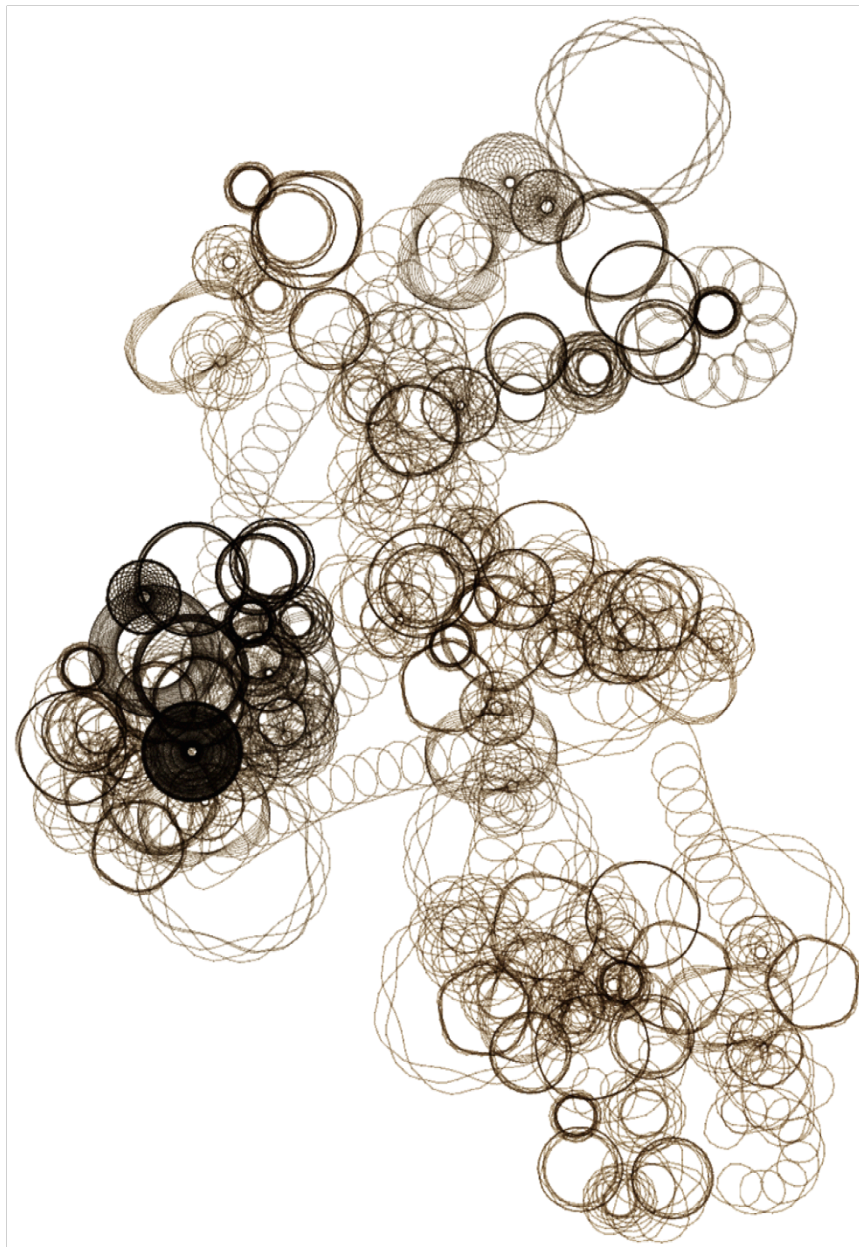




AALBORG UNIVERSITY  
DENMARK

Art and Technology, AAU, 3<sup>rd</sup> Semester 2014

Dynamic Art and Technology / Teknologi og dynamisk kunst



Putnam, L. (2013). *Spiroturtle A1*.



**AALBORG UNIVERSITY**  
DENMARK



**School: CAT**

**Study board: ArT & Technology**

**Study regulation: BA Study Program in Art & Technology, The Faculty of Humanities, AAU, September 2012.**

**Semester code: ArT3 – HSA160047**

**Study regulations code: HSA16121**

## **Dynamic Art and Technology (Teknologi og dynamisk kunst)**

### **Semester Theme**

For this year's edition of Dynamic Art and Technology, the theme is 'Harmonic Unfolding'. Harmonics, being a fundamental building block of motion, play an important role in both the scientific and artistic inquiry of dynamic systems. Artworks should place themselves in the lineage of machines and deterministic processes developed since the 18th century that utilize harmonics to create complex patterns. Project inspiration can be found in such topics as the geometric pen/chuck, pendulum systems, the harmonograph, oscilloscope art, cymatics, John Whitney's digital harmony, turtle graphics, and mathematical computer art. The goal is not to recreate the past, but to generate novel experiences using programmable computer and digital technologies.

Working with time means you will have to compose a work, more or less, as we are used to seeing it in other temporal artworks such as music, theatre, film, and dance. However, it doesn't mean the work needs to be scripted to minute detail; there can also be room for interaction and/or improvisation.

### **Semester Project Deliverables**

This semester, students will be divided into groups of four to five students and each group will work on a single project with the goal of creating an art installation and/or performance to be included in the end-of-semester exhibition.

The project reports will present your research in a particular area of investigation. They should clearly present the motivation, design, implementation, and analysis of the artwork. The report should include the following sections:

#### **ABSTRACT**

A short paragraph summarizing the main aspects of the investigation---context, problem, results, and insights.

#### **INTRODUCTION**

This is where you set the context for your work. What is the big picture? What is the motivation for investigating this area?

#### **PROBLEM STATEMENT**

Here you concisely state what the problem is you are investigating. You may also present a hypothesis to be supported or rejected through your own experiments.

#### **BACKGROUND**

This should contain previous work in the area you are investigating. This is of major importance in conducting any type of research, academic or otherwise. You should clearly identify antecedents and point



out both the importance and shortcomings of each in relation to your own work. Always reference reputable sources (i.e., peer-reviewed journals, books, etc.) and, when possible, primary sources (i.e., the original author of the work) to avoid misinformation. Google and Wikipedia are okay only as starting points.

#### DESIGN

Here is where you outline your process of creation and the decisions you made along the way. Elaborate on and justify your artistic, aesthetic, and technical choices. Describe your experiment design.

#### IMPLEMENTATION

How was the final work constructed? Include overall system diagrams and exhibition arrangement. Detail the most important aspects of the implementation and place the rest in the appendix. One should be able to fully and unambiguously re-create your artwork based on the information in this section.

#### ANALYSIS

Was your work successful? Support this with experimental data. If you made an initial hypothesis, do your observations support or reject it?

#### FUTURE WORK

Is there anything you could have done better? How? If you were to develop this project more, what would you work on next?

#### CONCLUSION

This is where you bring it all together. It is NOT simply a summary of what you have done---that is supplied by the abstract. You should connect all the dots and synthesize new insights here. What can others learn from this?

#### BIBLIOGRAPHY

List of references following the Harvard referencing style.

#### APPENDIX

Include all data produced during your investigation. This can include experimentation/observation logs, transcriptions of interviews, survey data, source code, etc. Note that the main text can reference the information in this section.

All figures, tables, and images in the report must be labeled with a brief description and cited in the main text. You are also required to make a video documentation of the final artifact and hand it in with the report.

Three hard copies of the project report must be produced (one for the examiner, one for the censor and one for the department secretary and archiving purposes). The video and any other relevant digital media (e.g., images, sounds) should be provided on a CD/DVD and submitted with the printed report in a pocket inside the back cover.

All material in the report that is not the original creation of the students in the group must be properly acknowledged by using the Harvard referencing style. Failure to do this will be considered plagiarism and will lead to immediate failure and possibly also to expulsion from the program.



<b>Semester coordinator:</b>	Lance Putnam, MT <a href="mailto:lp@create.aau.dk">lp@create.aau.dk</a> + 45 9940 3609
<b>Secretariat:</b>	Anne Nielsen, KOM <a href="mailto:amn@hum.aau.dk">amn@hum.aau.dk</a> +45 9940 9919
<b>Supervisors:</b>	Elizabeth Jochum (KOM) Rasmus Madsen (MT) Lance Putnam (MT)
<b>Module 8: Dynamic Art and Technology (15 ECTS)</b> <ul style="list-style-type: none"><li>• Artistic and Academic Methodology III (Affective Design)</li><li>• Creative Sensor Networks</li><li>• Digital Representation II (Rapid Prototyping)</li><li>• Programming II</li></ul>	
Coordinator:	Lance Putnam (MT)
Teaching staff:	Rasmus Madsen (MT) Lance Putnam (MT) Peter Skotte (MT) Ståle Stenslie (KOM)
<b>Module 9: Programming Interactive Systems (5 ECTS)</b> <ul style="list-style-type: none"><li>• Programming III</li><li>• Digital Networks</li></ul>	
Coordinator:	Lance Putnam (MT)
Teaching staff:	Lance Putnam (MT)
<b>Module 10: Art and Technology Concept Design (5 ECTS)</b> <ul style="list-style-type: none"><li>• Method Design and Analysis</li><li>• Concept Design and Diagrams</li></ul>	
Coordinator:	Ståle Stenslie (KOM)
Teaching staff:	Pernille Andersen (KOM) Sune Gudiksen (KOM) Ståle Stenslie (KOM)
<b>Module 11: Art in Context I – Art Theory (5 ECTS)</b> <ul style="list-style-type: none"><li>• Theory of Art and Aesthetics</li></ul>	
Coordinator:	Morten Søndergaard (KOM)
Teaching staff:	Lars Botin (PLAN) Falk Heinrich (KOM) Morten Søndergaard (KOM)
<b>Departments:</b>	
KOM	Department of Communication and Psychology
AD	Department of Architecture, Design and Media Technology (Architecture and Design)
MT	Department of Architecture, Design and Media Technology (Media Technology)
BYG	Department of Civil Engineering
PLAN	Department of Development and Planning



## Module 8 - Dynamic Art and Technology (Teknologi og dynamiske kunst) (15 ECTS)

**HSA330021H**

<b>Location:</b>	ArT3
<b>Study Board:</b>	ArT & Technology
<b>Module coordinator:</b>	Lance Putnam, MT <a href="mailto:lp@create.aau.dk">lp@create.aau.dk</a> + 45 9940 3609
<b>Method of work and language:</b>	Method of working: Group and project work. English
<b>Module contents:</b>	The basis of this module is human perception of movements and transitions, both physical and emotional. Students will work with principles of creation for time-based artifacts, and the experience of artifacts expressing temporal, spatial, and affective transitions. A variety of audio/visual technologies and engineered solutions will be tested and applied in the creation of products, artifacts and installations in the project unit, including mechanical and electronic alternatives of creating and controlling movement, position in space and autonomous motion. During the semester, students work theoretically and experimentally with projects that challenge their creative and technologies skills and produce artistic effects focused on performative interaction between humans and machines.

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

- Artistic and Academic Methodology III (Affective Design)
- Creative Sensor Networks
- Digital Representation II (Rapid Prototyping)
- Programming II

### Objectives:

The objective of module 8: Dynamic Art and Technology is to introduce students to basic problem areas and solutions regarding the creation of products, artifacts, performances and installations, which results in the expression of transitions both physically and emotionally.

### Learning objectives:

During this module students should acquire:

Basic **knowledge** about

- works of art supported by adaptive technologies expressing physical or emotional transition
- the creation and perception of artifacts expressing physical or emotional transition
- a variety of mechanical and electronic technologies of creation of movement and embedding of autonomy
- artistic expression using audio technologies for the production of sound-based interactivity
- academic and artistic methods and tools to be used when working with design and implementation of artifacts or installations that express or trigger emotional or physical movement



**Skills in**

- identifying and formulating an art problem within the theme of the module
- analyzing an artistic problem and developing alternative concepts for the defined problem
- motivating the application of certain technologies in connection with the design of installations expressing transitions
- identifying, developing and describing the interaction between form, choice of materials and technological solutions with a view to achieving a clear aesthetic expression and performance
- motivating choice of methodology in connection with the development of dynamic artifacts and installations working with motion and affect

**Competencies in**

- describing and analyzing works and installations which use adaptive technologies
- employing autonomous technologies in design and implementation of artifacts or installations expressing emotional or physical movement
- applying academic and artistic methodologies, in regard to interaction between technology, choice of materials, aesthetic expression, and user experience
- contextualising own artistic solutions (to state-of-art, socio-cultural requisites and consequences, art theoretical and aesthetic dimensions, etc.)
- describing the completed design in an academic form and communicating this in a project report, portfolio, etc.

The module is completed with:

**Examination 8**

An external combined written and oral examination in **Module 8: “Dynamic Art and Technology”**.

The examination will take the form of a conversation between the students, 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 process report or portfolio as well as the product created by the students. 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: 25 minutes

Evaluation: Grading according to the 7-point scale.

Proportional weighting: An aggregate grade is awarded for the artefact, the written and oral performances.

The assessment results in an individual grade.

Credits: 15 ECTS

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

In the evaluation of the examination performance, the grade 12 will only be awarded to students who demonstrate that they have fulfilled the objectives for the subject exhaustively or with only few insignificant omissions.

<b>Exam dates:</b>	Week 3, 2015
<b>Exhibition dates:</b>	December 4-5, 2014
<b>Hand-in date:</b>	December 18, 2014
<b>To:</b>	Anne Nielsen



<b>Artistic and Academic Methodology III (Affective Design) (1 ECTS)</b>	
Lesson 1:	Lecture
	<p>Introduction to Affective Design The lecture will introduce the origin of and various concepts behind affective design and how it might be used to produce strong, affective experiences. The students will get an overview of the field both in Human- Computer-Interaction (HCI) and artistic practice.</p>
	Ståle Stenslie
	<p>Picard, R. W. (1997) Affective Computing, pp. 21 – 25. MIT Press. Tikka, H. (2003). Affective environments: configuring the affective user? In Discovering New Media, Working Papers, University of Art and Design Helsinki UIAH, publication series F 26, Helsinki. Download from <a href="http://mlab.uiah.fi/culturalusability/papers/Tikka_paper.html">http://mlab.uiah.fi/culturalusability/papers/Tikka_paper.html</a></p>
Lesson 2:	Lecture
	<p>Shock, Awe and Fear Strong emotions can both attract and scare audiences. The lecture will present how to use inverse thinking in production of psychophysically challenging works of art.</p>
	Ståle Stenslie
	<p>The 'Sensation' exhibition. (1997). Download from: <a href="http://www.artdesigncafe.com/Norman-Rosenthal-Sensation-Royal-Academy-of-Arts-London-1997">http://www.artdesigncafe.com/Norman-Rosenthal-Sensation-Royal-Academy-of-Arts-London-1997</a> <a href="http://www.flashartonline.com/interno.php?pagina=articolo_det&amp;id_art=649&amp;det=ok&amp;title=SENSATION">http://www.flashartonline.com/interno.php?pagina=articolo_det&amp;id_art=649&amp;det=ok&amp;title=SENSATION</a></p>
	slides and other resources
Lesson 3:	Lecture
	<p>Inverse Thinking The lecture will present Inverse Thinking as a relevant methodology to produce strong and provocative works of art. Various projects from different fields will be presented, analysed and discussed. Research and document relevant artistic projects for presentation in class</p>
	Ståle Stenslie
	<p>Julius, A. (2002). Transgressions – The offences of art, pp. 16–51. Thames &amp; Hudson, London.</p>
	slides and other resources
Lesson 4:	Lecture
	<p>Reflections in Inverse Thinking The lecture will dissect and discuss various concepts prepared by students Script up to three scenarios using Inverse Thinking as a methodology. Present in class.</p>
	Ståle Stenslie
	<p>Badiou, A. Fifteen Theses on Contemporary Art. Lacanian Ink 22. Downloaded from <a href="http://www.lacan.com/frameXXIII7.htm">http://www.lacan.com/frameXXIII7.htm</a></p>
<b>Creative Sensor Networks (1 ECTS)</b>	
Lesson 1:	Lecture
	Data acquisition:





	Working with small level signals (Piezo, audio, strain gauges and similar signals), including amplification
	Rasmus K Madsen
	Slides to come
Lesson 2:	Lecture
	Sensors and Actuators: In depth overview of different possibilities in regards to sensing and actuating
	Rasmus K Madsen
	slides to come
Lesson 3:	Workshop
	Actuation Workshop: Create a drawing machine
	Rasmus K Madsen
	slides to come
Lesson 4:	Workshop
	Sensing and Actuation Workshop: Adding sensing capabilities to the drawing machine
	Rasmus K Madsen
	slides to come
<b>Digital Representation II (Rapid Prototyping) (1 ECTS)</b>	
Lesson 1:	Lecture/Workshop
	Introduction to prototyping and rapid prototyping based on digital designs
	Peter Skotte
	Make sure your computer is set up with 2D and 3D editing software. The 2D software should be able to handle vectors and the 3d software should be able to output .stl files. For 2D: Adobe Illustrator or Autocad are recommended and for 3D: Sketchup or Maya are recommended, but other and free alternatives are possible to use in the course.
Lesson 2:	Lecture/Workshop
	2D representations / Tools
	Peter Skotte
	How to rapidly make physical representations of digital 2D material. What is possible and what are the limits? Demonstration of methods available generally and at AAU.
Lesson 3:	Lecture/Workshop
	3D representations / Tools
	Peter Skotte
	How to rapidly make physical representations of digital 3D material. What is possible and what are the limits? Demonstration of methods available generally and at AAU.
	slides and other resources
Lesson 4:	Workshop



	Hands on experience
	Peter Skotte
	Work on own designs to gain practical experience with creating physical representations of digital designs.
<b>Programming II (2 ECTS)</b>	
Lesson 1:	Lecture
	Communication Protocols Basic concepts in digital communication: what is a protocol?, packets (header + data), addresses and ports, generating/parsing serial byte streams.
	Lance Putnam
	<p>Lecture notes.</p> <p>Further information on multimedia protocols (not required): DMX (lighting and stage): Elation Professional. (2008). DMX 101: A DMX 512 handbook. <a href="http://ritelites.com/yahoo_site_admin/assets/docs/dmx101_handbook.296102453.pdf">http://ritelites.com/yahoo_site_admin/assets/docs/dmx101_handbook.296102453.pdf</a> Kar, U. (2013). The DMX512 Packet, <a href="http://www.dmx512-online.com/packt.html">http://www.dmx512-online.com/packt.html</a>.</p> <p>HTTP (hypertext/web): Marshall, J. (2012). "HTTP Made Really Easy", <a href="http://www.jmarshall.com/easy/http/">http://www.jmarshall.com/easy/http/</a>. tutorialspoint. (2014). "HTTP Quick Guide", <a href="http://www.tutorialspoint.com/http/http_quick_guide.htm">http://www.tutorialspoint.com/http/http_quick_guide.htm</a>.</p> <p>MIDI (musical instruments): MIDI Manufacturers Association. (2009). MIDI and music synthesis. <a href="http://www.midi.org/aboutmidi/tut_midimusicynth.php">http://www.midi.org/aboutmidi/tut_midimusicynth.php</a> MIDI Manufacturers Association. (1995). MIDI Message Table 1, <a href="http://www.midi.org/techspecs/midimessages.php">http://www.midi.org/techspecs/midimessages.php</a>.</p> <p>OSC (sound control): Wright, M. (2002). The Open Sound Control 1.0 specification. <a href="http://opensoundcontrol.org/spec-1_0">http://opensoundcontrol.org/spec-1_0</a></p> <p>VRPN (virtual reality): Taylor II, R. M. et al. (2001). VRPN: A device-independent, network-transparent VR peripheral system. <a href="http://www.cs.unc.edu/Research/vrpn/VRST_2001_conference/vrst_vrpn_paper_reprint.pdf">http://www.cs.unc.edu/Research/vrpn/VRST_2001_conference/vrst_vrpn_paper_reprint.pdf</a></p>
Lesson 2:	Workshop
	Serial Workshop I: Digital to Physical Workshop on sending data serially from a computer to an Arduino to control something physical.
	Rasmus Madsen and Lance Putnam
	Lecture notes.
Lesson 3:	Workshop
	Serial Workshop II: Physical to Digital Workshop in sending data serially from an Arduino to a computer. Using a sensor to control a graphical object.



	Rasmus Madsen and Lance Putnam
	Lecture notes.
Lesson 4:	Lecture and Workshop
	Shape Generation Workshop I Shape generation techniques and exporting to 3D object files.
	Lance Putnam
	Lecture notes.
Lesson 5:	Lecture and Workshop
	Shape Generation Workshop II Shape generation techniques and exporting to 3D object files.
	Lance Putnam
	Lecture notes.
Lesson 6:	Lecture
	Working With Time I Using timing information to control animation and other temporal events. Topics include getting the time, sleeping, differential timing, and basic animation strategies using interpolation, signals, and other mathematical functions.
	Lance Putnam
	Lecture notes.
Lesson 7:	Lecture
	Working With Time II Using timing information to control animation and other temporal events. Topics include getting the time, sleeping, differential timing, and basic animation strategies using interpolation, signals, and other mathematical functions.
	Lance Putnam
	Lecture notes.
Lesson 8:	Lecture
	Using Libraries Finding, installing, and using other C++ libraries. Package managers and the compile/install/link process. Keywords in the typical API header: namespace, #define, enum, typedef, and struct/class.
	Lance Putnam
	Lecture notes.



## Module 9 – Programming Interactive Systems (Programming of interactive systemer) ( 5 ECTS)

**HSA330022F**

<b>Location:</b>	ArT3
<b>Study Board:</b>	ArT & Technology
<b>Module coordinator:</b>	Lance Putnam, MT <a href="mailto:lp@create.aau.dk">lp@create.aau.dk</a> + 45 9940 3609
<b>Method of work and language:</b>	Individual or small groups. English
<b>Module contents:</b>	Programming Interactive Systems is a module where students learn about basic principles of software and how different digital systems can be designed to create alternative forms of interactions between man and machines. Students will learn about principles of object-oriented programming languages and how algorithms can be developed in order to design new forms of HCI (Human-Computer Interaction).

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

- Programming III
- Digital Networks

### Learning objectives:

During this module students should acquire:

#### Basic knowledge about

- digital communication protocols: MIDI, OSC, DMX, serial, etc.
- networking applications: inter-application communication, internet-based communications, etc.
- basic user interface design principles for realizing a software interface for human-computer interaction
- data mapping strategies in software / firmware

#### Skills in

- applying technical knowledge to the development of a human-computer interface and an algorithmic - and demonstrate its use (application)
- analyzing use of the artefact
- synthesizing knowledge in written documentation

#### Competencies in

- evaluating artefacts from a technical perspective
- identifying further learning needs in the area of programming interactive systems.

The module is completed with:

### Examination 9

An internal combined written and oral examination in **Module 9: “Programming Interactive Systems”**. The examination is a 7-day assignment on a set subject.



Form of examination: b)

The examination will take the form of a conversation between the student, the examiner and an internal censor on the basis of the artefact and report prepared by the student(s).

Number of pages: the written part must not exceed 5 pages.

Evaluation: Grading according to the 7-point scale.

Credits: 5 ECTS

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

In the evaluation of the examination performance, the grade 12 will only be awarded to students who demonstrate that they have fulfilled the objectives for the subject exhaustively or with only few insignificant omissions.

<b>Exam dates:</b>	October 13-14, 2014
<b>Hand-in date:</b>	October 3, 2014
<b>To:</b>	Anne Nielsen

### Programming III (1 ECTS)

Lesson 1:	Lecture
	Programming Review and Structures Review of basic programming constructs: variables, functions, arrays, loops, and control structures. Introduction to structures.
	Lance Putnam
	Review assignments and literature from Programming I. "Data Structures - C++ Documentation", <a href="http://www.cplusplus.com/doc/tutorial/structures/">http://www.cplusplus.com/doc/tutorial/structures/</a>
Lesson 2:	Lecture
	Object-oriented Programming I Introduction to object-oriented concepts: class versus instance/object, member variables/functions, constructors/destructors, public versus private members.
	Lance Putnam
	"Classes (I) - C++ Documentation", <a href="http://www.cplusplus.com/doc/tutorial/classes/">http://www.cplusplus.com/doc/tutorial/classes/</a> . "Classes (II) - C++ Documentation", sections "The keyword this" and "Static members", <a href="http://www.cplusplus.com/doc/tutorial/classes2/">http://www.cplusplus.com/doc/tutorial/classes2/</a> .
Lesson 3:	Lecture
	Callback Functions and Real-time Sound Callback functions as used in real-time (multimedia) systems and the notion of inversion of control (the Hollywood "we'll call you" principle). Programming real-time audio. Topics include samples as a representation of sound pressure, sampling rate, input/output streams, channels, processing blocks, and sound file playback.
	Lance Putnam
	Lecture notes.
Lesson 4:	Lecture
	Real-time Graphics I Programming real-time graphics.



	Introductory concepts in real-time graphics programming: the window, frame rate, animation versus draw callbacks, and drawing basic shapes. Basics of meshes including drawing primitives, vertices, and colors.
	Lance Putnam
	Lecture notes.
Lesson 5:	Lecture
	Real-time Graphics II Working with textures and images.
	Lance Putnam
	Lecture notes.
Lesson 6:	Lecture
	Object-oriented Programming II Introduction to object-oriented concepts: inheritance and polymorphism.
	Lance Putnam
	"Friendship and inheritance - C++ Documentation", sections "Inheritance between classes", "What is inherited from the base class?", and "Multiple inheritance", <a href="http://www.cplusplus.com/doc/tutorial/inheritance/">http://www.cplusplus.com/doc/tutorial/inheritance/</a> . "Polymorphism - C++ Documentation", <a href="http://www.cplusplus.com/doc/tutorial/polymorphism/">http://www.cplusplus.com/doc/tutorial/polymorphism/</a> .
Lesson 7:	Lecture
	Mouse and Keyboard Input Responding to standard mouse and keyboard events (e.g., button down/up, move, drag).
	Lance Putnam
	Lecture notes.
Lesson 8:	Lecture
	Creating an Audiovisual Instrument Combining the presented topics in graphics, sound, and user input to create a real-time audiovisual instrument.
	Lance Putnam
	Lecture notes.



## Module 10 – Art and Technology Concept Design (Konceptudvikling for oplevelse) (5 ECTS)

**HSA330023F**

<b>Location:</b>	ArT3
<b>Study Board:</b>	ArT & Technology
<b>Module coordinator:</b>	Ståle Stenslie, KOM <a href="mailto:stenslie@hum.aau.dk">stenslie@hum.aau.dk</a> , phone +47 9056 2963 Module teachers are additionally: Sune Gudiksen, KOM <a href="mailto:sunekg@hum.aau.dk">sunekg@hum.aau.dk</a> , phone 28145152 Pernille Andersen <a href="mailto:pvka@hum.aau.dk">pvka@hum.aau.dk</a> , phone: 9940 8986,
<b>Method of work and language:</b>	Individual work in relation to course activities English
<b>Module contents:</b>	The module “Art Concept Design” focuses on concept design processes and method development of interactive installations and/or place-based events. The module introduces academic methods such as qualitative or quantitative of research and analysis and methods of artistic experimental creativity as measures in artistic concept development processes. Furthermore, the module introduces oral and written presentation techniques.
<p>In connection with the module, courses may be offered within the following areas:</p> <ul style="list-style-type: none"> <li>• Method Design and Analysis</li> <li>• Concept Design and Diagrams</li> </ul> <p><b>Learning objectives:</b> During this module, students should acquire:</p> <p>Basic <b>knowledge</b> about</p> <ul style="list-style-type: none"> <li>• various qualitative methods in relation to the analysis and understanding of users, places and their usages, etc.</li> <li>• quantitative methods in relation to the analysis and understanding of users, places and their usages, etc.</li> <li>• theories and methods of artistic and experimental practices</li> </ul> <p><b>Skills</b> in</p> <ul style="list-style-type: none"> <li>• conceptualizing various forms of interactive or relational experience</li> <li>• employing and combining various methods of concept development</li> <li>• presenting artistic concepts to various target groups</li> </ul> <p><b>Competencies</b> in</p> <ul style="list-style-type: none"> <li>• designing and conceptualizing interactive installation and/or place-based events</li> </ul> <p>The module is completed with:</p>	
<b>Examination 10</b>	
An internal combined written and oral examination in <b>Module 10 “Art and Technology Concept De-</b>	



### sign”

Form of examination: b)

The examination is a free assignment, which is evaluated by one examiner and awarded a pass/fail grade.

For the examination students have to submit a written presentation of an artistic concept within the subject field of Art & Technology. The written part must not exceed 5 pages. The oral examination consists of a student presentation followed by a discussion between the student and the examiner.

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.

Credit: 5 ECTS

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

<b>Exam dates:</b>	Week 50, 2014
<b>Hand-in date:</b>	November 18th, 2014
<b>To:</b>	Anne Nielsen

### Concept and Method Designs in ArT (2 ECTS)

This course introduces both theoretical and practical elements leading to the creation of a concept. Lectures and exercises will be combined throughout the course. Different perspectives of designing concepts for an artistic intervention will be discussed. The goal is to make the students able to present a concept for a project clearly and convincingly. Students should be able to disseminate the idea, intention, relevance, and strategy for realization behind a forthcoming, possible project.

Lesson 1:	Lecture
	<b>Artistic Methods.</b> The lecture gives an overview of artistic approaches to concept design processes and method development relevant to interactive installations and/or location specific events. The students will get a basic understanding of what concept design is and why it is so important to artistic practice.
	Ståle Stenslie
	Marinetti. F. T.: The Futurist Manifesto. 1909. <a href="http://cscs.umich.edu/~crshalizi/T4PM/futurist-manifesto.html">http://cscs.umich.edu/~crshalizi/T4PM/futurist-manifesto.html</a> Leavy, Patricia (2008) Method Meets Art: Arts-Based Research Practice. Guilford Press. P. 4 – 16.
Lesson 2:	Lecture
	<b>Qualitative Methods in ArT.</b> The lecture will present qualitative methods useful for the analysis and understanding of users, places and their usages for creating valuable experiences.
	Ståle Stenslie
	Norman K. Denzin, Yvonna S. Lincoln (2011) The SAGE Handbook of Qualitative Research. SAGE.
Lesson 3:	Lecture
	<b>Quantitative Methods in ArT.</b> The lecture will present quantitative methods in relation to the analysis and understanding of users, places and their usages relevant to ArT practice.
	Ståle Stenslie





	Borgdorff, Henk, Artistic research within the fields of science. Download from <a href="http://www.utbildning.gu.se/digitalAssets/1322/1322679_artistic-research-within-the-fields-of-science.pdf">http://www.utbildning.gu.se/digitalAssets/1322/1322679_artistic-research-within-the-fields-of-science.pdf</a>
	slides and other resources
Lesson 4:	Lecture
	<p><b>Concepts, Language and Concept Designs.</b>            What is a concept? Why do they matter? Are they limits to our thinking? Or do they fertilize us with meaning? How to use them for communication and conveying the message?            The lecture will include a workshop in writing, presenting and discussing artistic concepts. The main task is to design and conceptualize an interactive installation and/or place-based event. This should then be presented in class for group discussion.</p>
	Ståle Stenslie
	<p>Schwartzman, M. <i>See Yourself Sensing – Redefining Human Perception</i>. Black Dog Publishing, 2011. Note: this book contains several examples of how to mediate installations/media art in a concise and precise manner.            Julius, Anthony. <i>Transgressions – The Offences of Art</i>. Thames &amp; Hudson, London 2002. P. 16 – 21.</p>
	slides and other resources
Lesson 5:	Lecture & Workshop
	<p><b>Comparing art and design directions</b>            19<sup>th</sup> of September, 8-10            In this lecture we will discuss design directions based on Sanders and Stappers (2012) design-landscape. This is followed by introductions into the specific directions. We will take a look at possible advantages and disadvantages when choosing a specific direction as well as how they may be combined.</p>
	Sune Gudiksen
	<p><i>Co-design &amp; generative design research:</i>            Sanders, E. B., &amp; Stappers, P. J. (2012). Convivial toolbox.  <i>Generative Research for the Front End of Design</i>. chapter 3, p.15-32.            Sanders, E. B. N</p>
	slides and other resources
Lesson 6:	Lecture & Workshop
	<p><b>Practice based research: Action research and design research</b>            19<sup>th</sup> of September, 10-12            In this lecture we will take a look at the various research directions, which have a focus on practice, action and/or design, hereunder case studies, action research, design experiments, art and design processes, and research through art and design. We ask questions and discuss suggestions on how to structure projects. Furthermore we will discuss strengths and weaknesses in the directions.</p>
	Sune Gudiksen
	<p>Huang, H. B. (2010). What is good action research. <i>Action Research</i>, 8(1), 93-109.            Mathiassen, L., Chiasson, M., &amp; Germonprez, M. (2012). Style Composition in Action Research Publication. <i>Mis Quarterly</i>, 36(2), 347-363.            Cross, N. (1999). Design research: A disciplined conversation. <i>Design issues</i>, 5-10.            Frayling, C. (1993). Research in Art and Design. <i>Royal College of Art. Research Papers</i>, 1(1), 1-5.            Eriksen, M. A., &amp; Bang, A. L. (2013). Experiments all the way: Diagrams of dialectics be-</p>



	tween a design research program and experiments.
	slides and other resources
Lesson 7:	Lecture & Workshop
	<p><b>Reframing problems, ideation &amp; towards experience concepts 1</b> 9th of October, 9-11 and 13-15</p> <p>The last two and combined lectures are related to Concept design &amp; diagramming (CDD):</p> <ul style="list-style-type: none"> <li>• conceptualizing various forms of interactive or relational experience</li> <li>• employing and combining various methods of concept development</li> <li>• designing and conceptualizing interactive installation and/or place-based events</li> <li>• handling complexity and development work related to concept design processes</li> </ul> <p>The course is a full day workshop. Throughout the day we will switch between short lectures and design exercises. The skill to look differently at and reframing a design/art problem or situation is considered a major asset in order to reach successful designs. This day we will move you through a process from reframing to ideation and towards concepts. Artifacts are used throughout the day and we will talk about how artifacts can be used to challenge different understandings and as a communicative purpose in design processes. The exercises will be related to semester theme: interactive installations and place-based events.</p>
	Sune Gudiksen & Pernille Andersen
	<p>Dorst, K., &amp; Cross, N. (2001). Creativity in the design process: co-evolution of problem-solution. <i>Design studies</i>, 22(5), 425-437.</p> <p>Hekkert, P., &amp; van Dijk, M. (2011). <i>ViP-Vision in Design: A Guidebook for Innovators</i>. BIS Publishers.</p> <p>Muller, M. J. (2003). Participatory design: the third space in HCI. <i>Human-computer interaction: Development process</i>, 165-185.</p> <p>Sanders, L., &amp; Stappers, P. J. (2012). <i>Convivial Design Toolbox: Generative Research for the Front End of Design</i>. BIS. (Kapitel 1 &amp; 3)</p> <p>Roos, J., &amp; Roos, M. (2006). <i>Thinking from within: A hands-on strategy practice</i>.</p> <p>Gauntlett, D. (2007). <i>Creative explorations: New approaches to identities and audiences</i>. Routledge. (Chapter..)</p> <p>Gudiksen, S. K., &amp; Brandt, E. (2014). The service Ouroboros: Designing persona service cycles. <i>4<sup>th</sup> Service conference. Lancaster, England</i>.</p>
	slides and other resources
Lesson 8:	Lecture & Workshop
	<b>Reframing problems, ideation &amp; towards experience concepts 2</b>
	Sune Gudiksen & Pernille Andersen
	see Lesson 7
	slides and other resources



## Module 11 – Art in Context I – Art Theory (Kunst I kontekst I – kunstteori) (5 ECTS)

**HSA330024D**

<b>Location:</b>	ArT3
<b>Study Board:</b>	Art & Technology
<b>Module coordinator:</b>	Morten Søndergaard <a href="mailto:sondergaard@hum.aau.dk">sondergaard@hum.aau.dk</a> +45 9940 2552
<b>Method of work and language:</b>	Individual work in relation to course activities. English
<b>Module contents:</b>	<p>The module is an introduction to relevant artistic and aesthetic theories from a variety of research disciplines and research traditions (i.e. history of art and literature, rhetoric, philosophy, sociology, technology) and an introduction to the analytical methodologies of these disciplines and their position within theories of science related to the study's subject field.</p> <p>Students will analyse art and design artefacts applying methodologies and theories presented in the course. The module consists of lectures, workshops and seminars.</p>
<p>In connection with the module, courses may be offered within the following area:</p> <ul style="list-style-type: none"><li>• Theory of Art and Aesthetics</li></ul> <p><b>Learning objectives:</b> During this module, students should acquire:</p> <p><b>Basic knowledge</b> about</p> <ul style="list-style-type: none"><li>▪ Basic aesthetic theories and their significance for art and experience design</li><li>▪ Basic methods of aesthetic analysis of artworks and art projects</li><li>▪ Basic art theories on the relation between artist, the recipient, and the work of art</li></ul> <p><b>Skills</b> in</p> <ul style="list-style-type: none"><li>▪ Applying various basic aesthetic concepts and artistic models in connection with analysing projects of art, their contexts and their participants</li><li>▪ Presenting and discussing various aesthetic and artistic positions and their significance for the field of art and technology</li></ul> <p><b>Competencies</b> in</p> <ul style="list-style-type: none"><li>• Writing academic analysis of artistic projects and aesthetic artefacts</li><li>• Applying aesthetic theories and methods in design, description and evaluation of artistic projects and experiences</li><li>• Conducting case specific studies, applying one or more theories and methods of the field</li></ul> <p>The module is completed with:</p>	
<b>Examination 11</b>	
<p>An internal written examination in <b>Module 11 “Art in Context I – Art Theory”</b> Form of examination: c)</p>	



The examination is a 7-day assignment on a set subject, which is evaluated by one examiner and awarded a pass/fail grade.  
Number of pages: the written work must not exceed 12 pages.  
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.

<b>Exam dates:</b>	Week 4, 2015 (Not Substitution Exam!)
<b>Hand-in date:</b>	November 28, 2014, 10:00 (Substitution Exam)
<b>To:</b>	Anne Nielsen/Moodle

#### **Scope and expectations:**

The basic goal of the course is to teach the students to operate with aesthetic theories when they analyze artifacts, and to have a basic notion of the different meta-theoretical discourses (phenomenology, hermeneutics, structuralism, (neo)kantianism, poststructuralism) in the field of modern culture and art 'before the digital revolution' (decadence, modernism, avant-garde, kitsch, and post-modernism).

It is also a sub-goal of the course to teach the students to write expositions based on theories and the analysis of artifacts.

The students are expected to read one primary text for each lecture – and each lecture will center on this text. The students are expected to prepare either to do 5 minutes talks about the primary text, i.e. using one of the basic elements of expository writing – resume, paraphrase, controlling idea, argument or voice; Or, to use the text in the analysis of an artwork. During the course, each student should do one presentation in order to qualify for the (reduced) final assignment. The course will be concluded with each student writing an exposition on a chosen topic from the course that will be marked. If the student has qualified for it (minimum 80% physical attendance and all assignments), the length of the exposition should be max. 5 pages with a free topic from the semester's teaching. If the student does not qualify, the examination will be as described above under 'form of examination./c)'.  
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**Participants: Lars Botin, Falk Heinrich, Morten Søndergaard**

### **Theory of Art and Aesthetics (2 ECTS)**

Lesson 1:	Lecture
	Art in Context - Aesthetic Theory. Introduction What is aesthetic theory? This lecture will give an introduction to the field of aesthetic theory, art and experience.
	9 September, kl. 14-16
	Morten Søndergaard
	Dewey, John. <i>Art as Experience</i> . New York: Putnam, 1934. (1, 35-37, 47-48, 106-109, 194-200, 272-275.) On Moodle.
Lesson 2:	Lecture
	<b>The perception of science and art.</b> The lecture is about the differences and similarities on how art and science is perceived by experts. This is made through the reading of the philosophers of phenomenology Maurice Merleau-Ponty and Martin Heidegger, who both emphasizes the



	importance of senses and bodies as means and ends of understanding, be it science or/and art.
	22. september, 13.00-15.00
	Lars Botin
	<p>Wartenberg, Thomas E. , 2002. "Heidegger". In ed. Gaut, Berys; Lopes, Dominic Mclver. <i>The Routledge Companion to Aesthetics</i>. Routledge: London</p> <p>Chaplin, Adrienne D., 2002. "Phenomenology: Merleau-Ponty and Sartre". In ed. Gaut, Berys; Lopes, Dominic Mclver. <i>The Routledge Companion to Aesthetics</i>. Routledge: London</p> <p>Merleau-Ponty, M. (1961). "The Eye and the Mind".</p>
	slides and other resources
Lesson 3:	Lecture
	<p><b>Aesthetics and the Notion of Taste .</b> The lecture is an introduction to the notion of aesthetic taste through a discussion of various concepts of beauty and their significances for art in modernity. Aesthetic taste has been the very foundation for philosophical aesthetics; whereas beauty has been the most important aspect of art making and art reception – until the avant-garde of the 20<sup>th</sup> century began to reject beauty. However, beauty has recently surfaced from oblivion. But what notion of beauty is at stake here? And what about the beauty of new media art and art &amp; technology projects?</p>
	Falk Heinrich
	<p>McMahon, Jennifer, 2002. "Beauty". In ed. Gaut, Berys; Lopes, Dominic Mclver. <i>The Routledge Companion to Aesthetics</i>. Routledge: London</p> <p>Korsmeyer, C., 2002. "Taste". In ed. Gaut, Berys; Lopes, Dominic Mclver. <i>The Routledge Companion to Aesthetics</i>. Routledge: London</p> <p>further reading:</p> <p>Freeland, Cynthia, 2001. <i>Art Theory</i>. Oxford University Press: Oxford</p> <p>Heinrich, Falk. 2008. "On the Beauty of Interactive Art" In IJART, Interscience Publisher</p> <p>Kant, Immanuel, 1995. "Analytic of the Beautiful". In Neill; Ridley ed.,1995. <i>The Philosophy of Art USA</i>, McGraw-Hill Comp.</p>
Lesson 4:	Lecture
	<p><b>Art as Play.</b> Art is often described as playful creativity, but what does this actually mean? Does it means that art creations are the result of totally free (and anarchic) activity or are there rules, regulations and typologies for the play? The German philosopher Hans-Georg Gadamer wrote about art as play and we will look into his theories of play (Spiel).</p>
	6. October, 13.00-15.00
	Lars Botin
	Gadamer, H.G. "Art as Play".
Lesson 5:	Lecture
	<b>The Art of Society – Introduction to Luhmann's System of Art.</b>



	The lecture circles around the paradoxical notion of the so-called autonomy of art seen from a sociological perspective. Art is seen as a specific social system within a broader societal field comprised of various other social systems. The system of art has its own operational mechanisms and societal functions assigning specific meanings to common notions such as the work of art, artist, beholder, art theory, etc. Luhmann's systemic view on art is able to discuss the interstices between art and other domains such as science, economy etc.
	Falk Heinrich
	Luhmann, Niklas, 2008. "The work of Art and the Self-reproduction of Art." In Harrison, C.; Wood, P. <i>Art in Theory 1900-2000</i> . Oxford: Blackwell Publishing  Further reading:: Luhmann, Niklas, 2001. <i>The art of the society</i> . Heinrich, Falk, 2008. <i>Interaktiv digital installationskunst</i> . København, Multivers (kap. 4)
Lesson 6:	Seminar - lectures and exercises (lesson 6+7+8)
	<b>Practices: Analyzing art, operationalizing theory, crossing aesthetics. Sound Art as Example.</b> The final part of the course, leading up to the final assignment, will take the students on a journey through the use of theories in the analysis of different contexts and aesthetic situations. The first lesson will begin with a lecture on 'the practice of everyday life' by Michel de Certeau.
	27. October 10-16
	Morten Søndergaard
	Certeau, Michel de. 'Walking in the City', in <i>The Practice of Everyday Life</i> . London: University of California Press, 1980. (91-110) On Moodle.
Lesson 7:	Listening - workshop
	Based on the reading of Salomé Voegelin's chapter on listening, and the theories from the other lectures, the students will do exercises in the cityspace of Aalborg. Bring sound recorders (Smartphones are also ok) and laptop with sound editing program.
	27. October 10-16
	Morten Søndergaard
	Voegelin, Salomé. 'Chapter 1: Listening', in <i>Listening to Noise and Silence</i> . London: Continuum, 2010. (1-41). On Moodle.
	slides and other resources
Lesson 8:	Presentation and analysis
	The final lesson asks the students to give a presentation which analyses a chosen artwork or aesthetic situation based on their sound-production. The presentation and analysis should draw on at least two of the theories from the course.
	27. October 10-16
	Morten Søndergaard
	As above.
	slides and other resources