AALBORG UNIVERSITET

Template for Semester Descriptions of Study Programmes at Aalborg University

ArT & Technology Semesterguide 2. semester

Semester details

Study board: ArT & Technology

Study regulations: BA Study Program in Art & Technology, The Faculty of Humanities, AAU, September 2015:
http://www.fak.hum.aau.dk/digitalAssets/109/109056_ba_art_2015_hum_aau.dk.pdf

Semester framework theme

The semester project on 2nd semester will focus on transforming the space of a significant architectural site, by developing projects that add artistic and aesthetic-experimental layers that re-interpret an already existing architectural setting to the audience. The project aims at bringing art and technology into a close dialogical relationship with historically significant buildings.

We spend most of our time inside buildings, in and about cities. These spaces affect our behaviour, feelings, health, and social interactions to a great extent. However, we often forget that the build environment is the frame for life. Some of this physical frame has been around for hundreds of years, although our use of it has changed. A historically charged space that acts as a point of interest in an urban setting holds deep cultural identity.
The idea of context will be explored through analyses: physical, historical, and experiential. Why was the building built? When? For what purpose / function? What made it successful enough for it to become part of the cultural heritage of the city? What kind of artforms did the space hold over time (art, paintings, sculpture, music etc)? How do people feel about it? How do they use it?
This exercise will serve as a tool to understand (a) what makes for successful artefacts - What lasts over time, why? (b importance of context - space as a holder for artefacts,
memory, tactile, human experience, interrogation, empathy (users, time), how things feel, smell, look, sound, conscious/subconscious. How do people behave differently in different spaces - spaces of transit / spaces of gathering (move, stand), intimate / public.

Aalborg Kloster
https://www.aalborgkloster.dk

Description/introduction of Aalborg Kloster as our site
Aalborg Monastery: Monastery of the Holy Ghost date back to the 1400s. Initially the site had a hospice for the sick, the crippled and the poor in Aalborg. The current buildings are built during 1432-1500 after a fire destroyed the first buildings on the site in 1432. The new buildings were finished in 1500 and as a monastery they were admitted into the hospital order order of The Holy Ghost, and tasked to continue to take care of orphans, the sick, the crippled and the poor. After the reformation the monastery was transformed into the diocean hospital and a Latin School (which later became Aalborg Katedralskole) was established. Today the monastery is a self-governing, private, charitable organisation that maintains the buildings and the 27 flats for the elderly people who live on-site.

(Source: https://www.aalborgkloster.dk/the-story-of-aalborg-monastery/)

The monastery and the site have a rich history, embedded in the history of Aalborg, and the buildings themselves are interesting in terms of architectural history. The 40-meter long, vaulted abbey basement is the largest in Denmark and the building complex as a whole, with its court yards, gardens, alleys and interior spaces are an exceptional medieval enclave in the inner city of Aalborg.

The semester projects of ArT2 must take two main aspects into account:

The semester projects must, of course, live up to the title of the semester: Performative spaces and technology. A performative space is here understood as a space that performs: the space itself has interactive or responsive features that can react on the environmental conditions, which can be light, wind, touch, human presence, etc. (Kolarevic and Malkawi 2005), and the projects must be developed with a clear connection to its immediate context. That means that the semester projects should focus on artistic-aesthetic effects that interpret the spaces of Aalborg Monastery in terms of experiences, atmospheres or physical-spatial interventions.

The role of the semester
Performative Spaces and Technology introduces the students to construction of spatial experiences, and creating works for specific urban or architectural spaces and contexts.
Academic progression
The semester is in most aspects a continuation and expansion of the topics taught in 1st semester. The attention is directed away from the isolated sculptural object to a spatial experience in a more challenging, specific architectural/public setting. Some courses are built on similar courses taught on 1st semester. These courses are BEII and Perception II, while DRI introduces to the use of the laser cutter and AAMII focus on artistic and academic methods for understanding, analysing and constructing space and spatial experiences.

Deliverables:

Each group has to produce an artistic project and a report. Materials from the courses (theory, methods, techniques) are expected to be part of the project work and reflected in the report.

Report outline:

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? Introduce the theme and general description of the project. What is your project about? What are the main concerns, issues or topics relevant to the theme [PROBLEM AREA]? How does your specific project relate to broader context or art-historical context?

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.

What is your declared problem statement, or problem formulation? What specific aspect do you want to address? Is it a societal concern? Is the problem of a material, environmental, perceptual, psychological, educational, mental or universal state – or more of those combined?

"State of the Art"
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 refutable 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.

Theory
What relevant theories have you researched as part of this project? List 3-4 theories or academic sources that will inform your overall research. This can be grounded-theory or state-of-the-art (fr example, interaction design for modern museums). These theories are part of the background research for your project, and will be specific to each group (i.e. not PBL or AAM course literature). How will this ACQUIRED, discipline-specific knowledge help your project and overall research design?

DESIGN (incl. Design Process)

Continue to the semester project:
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 and any methods you may have used.

It is in this section you include all the research and experiments you carried out during the process, including the experiments in the courses: the concrete sound art composition, the mobile and the assignment in PID. It is important that you show what you have learned from the experiments, and how this learning is informing your final semester project. That means that documentation of the experiments and the results, as well as your reflections on how the learning outcome informs your semester project, must be presented in the report.

Key questions: What were the different processes you went through during this project? What were the most significant methods you used to a) gain knowledge of the topic and the project, b) to design, construct and produce your art project. Do not just describe what you did, but reflect on the iterative design process and the outcomes.

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.

Semester organisation and time schedule

As the semester projects must take their departure in the context and content of Aalborg Kloster, lectures on various approaches to investigate and research as site, notions of site – specificity and creation of spatial experiences will be part of AAM II. Perception II will focus on perception of space and installation spaces.

Any installation is the result of a strong idea of what kind of experience the work should convey to

the viewer. In order to express such an idea in an installation it is necessary to have an understanding of both technical and contextual elements and also of an individual aesthetic understanding of space and form , which is going to be developed further this semester.

The artistic development of the form of the installations and research for possible solutions will be trained in AAM II and in DR1 where 2D and 3D constructions methods will be presented as tools for realization of the semester projects. The technical aspects of the performative spaces will be taught in the module PID II and the course BE II, where programming, sensors and actuators and basic electronics relevant for site-specific projects are central topics.

Groups will be formed based on the students interests in the sites, their initial ideas and social preferences. Based on various exercises in AAM II and site visits early in the semester, the students will initiate the idea development process, that will form the basis of the group formation process. Groups will be formed the 06.03.2018

It is expected that report writing will take place throughout the semester, and simultaneously with the artistic parts of the project.

External collaboration:
The semester project is conducted in coordination with the superintendant at Aalborg Kloster Flemming Møller Mortensen, and his staff.

Semester coordinator and secretary assistance

Semester coordinator: Line Marie Bruun Jespersen
Secretariat assistance: Anne Glad

Module description (description of each module)

Module title, ECTS credits

Performative Space and Technology
20 ECTS

Location

2. Semester

Module coordinator

Line Marie Bruun Jespersen

Type/Method and language

Group and project work
English

Learning objectives:
The objective of Module 5: “Performative Space and Technology” is to introduce space as an artistic medium for the creation and construction of artefacts and events within the field of art and technology.

During this module, students should acquire:

Basic knowledge about
• physical installations and performative urban environments and their visual and spatial effects
• architectural aesthetic expressions, interaction between people, space and technology, choice of materials and visual effects
• the application of technology in connection with the creation and use of performative spaces
• methods and tools to be used in the creation of performative spaces from idea to completed project

Skills in
• identifying and formulating an art problem within the theme “Performative Space and Technology” and developing alternative concepts for a defined problem
• developing and describing artistic and architectural concepts within the theme “Performative Space and Technology”
• the application of appropriate technologies in regard to design and use of performative spaces
• producing sketches, models and prototypes of spatial form

Competencies in
• describing and analyzing architectural spaces and their social, emotional and per formative aspects
• producing concepts for spatial installations of artistic quality
• communication the final design in texts, drawings, and models

Academic content

The basis of this module is human experiences in relation to architectural and performative spaces. Students work with mechanical and technological means in the creation of spatial and performative experiences. Experiments will be made with various technologies, tectonic and architectural principles for the creation of spaces, physical spatial structures and experiential environments. Students work theoretically and experimentally with realizations of spatial installations including the transformation of space into interactive or otherwise performative architectural environments.

Scope and expected performance

20 ECTS credits. 1 ECTS credit = 27,5 hours of work. 20 ECTS = 550 hours of work consisting of preparation for course sessions, course participation, group work, exercises, counselling and exams.

Module activities (course sessions etc.)

Artistic and Academic Methodology II (Installation, Architecture Spaces and Urban Design)

1.

Lecture
AAMII is a courset that introduces to theories and methods to understand and approach various kinds of spaces in art, architecture and in the urban landscape. The course combines lectures that introcdes to theories on expanded notions of space, with lectures and hands-on assignments that focus on methods to research and analyze spatial art. The students will gain experience with methods and approaches to be able to analyse, read and discuss space and place.

The first lecture introduces to different (expended) notions space multisensoric aspects of spatial experience and the creation of spatial experiences in installation art, architectural settings and public spaces

Literature

	Pri lit	Sec. lit	Dig. upload
Pallasmaa, J, 2012. The Eyes of the Skin. 3rd ed. UK: Wiley pgs. 44-64 https://www.youtube.com/watch?time_continue=6&v=C4KhpYuClBE	20		x
Video from DAC Oplevelse/experience https://www.youtube.com/watch?time_continue=6&v=C4KhpYuClBE			x
Claire Bishop: Installation art: A critical history. Tate Publishers 2005. Introduction	5		x
Miwon Kwon: Public Art and Urban Identities. Online: http://eipcp.net/transversal/0102/kwon/en			
https://informalphnompenh.files.wordpress.com/2016/04/public-space-and-the-informal.pdf	6		
For inspirations see https://informalphnompenh.wordpress.com		x	

2

Lecture
Introduction to concepts site, site specificity, space and place in art and architecture

The first lecture focus space as a solid physical construction.

The students will be assigned an art example, that must be analyzed and presented to the other students on the course Trello board. Sign up to Trello.com to get access. Keywords: defining space, creating space, spatial experience, mapping space.

Literature

	Pri lit	Sec. lit	Dig. upload
Kevin Lynch: The Image of the City. MIT Press 1960 pp. 46-49	3		x
Gordon Cullen: The concise townscape. Architectural Press 1961 Pp. 17	17		x
Rob Krier: Urban Space. Academy Editions London. 1979. Pp. 15-62		38	x
Ching, Francis.D.K.: Form, Space and Order, 4th ed. Wiley. 2015 Organization pp. 197-242 Circulation pp. 252-294	45+42 (alot of illustrations)		x

3.

Lecture
Methods to map and research physical space

The lecture focus on methods to investigate and analyze concepts like: scale, proportions, materialities, composition and orientation.

Literature

	Pri lit	Sec. lit	Dig. upload
Kevin Lynch: The Image of the City. MIT Press 1960 pp. 46-49	3		x
Gordon Cullen: The concise townscape. Architectural Press 1961 Pp. 17	17		x
Rob Krier: Urban Space. Academy Editions London. 1979. Pp. 15-62		38	x
Ching, Francis.D.K.: Form, Space and Order, 4th ed. Wiley. 2015 Organization pp. 197-242 Circulation pp. 252-294	45+42 (alot of illustrations)		x

4.

Lecture

TimeSpace – site, history and time

In this lecture we will read about Time-space in texts by Nigel Thrift and John May. TimeSpace is a concept that can help us pay attention to the networks of social time. Social time consist of four inter-related domains of social practices that constitute its multiple spatialities and "senses of time"; timetables and rhythms, social discipline, instruments and devices and texts. From here students will be asked to trace TimeSpace by investigating the multiple times of the site, the social practices now and then and how it has shaped the surrounding geographies. In addition the lecture focus on history as a factor and ressource in developing contemporary art works for historic sites. Topics like architectural history, urban history, use of archival material and historic resarch as part of the artistic process will be included in the lecture.

Literature

	Pri lit	Sec. lit	Dig. upload
Tim Cresswell: Place. A short introduction. Intro pp. 1-10	10		x
Jane Rendell: Art and Architecture: A place between. IBTauris Publishers. Pp.			x

5

Lecture

Introduction to methods that can provide information, data and knowledge of time-space aspects of a site. Furthermore the lecture will introduce to examples of contempoary art developed for historical architectural settings, and we will discuss various strategies for engaging in a dialogue ”across” time in art works.

Workshop activitiy: Research the history of Aalborg Kloster. Materials from the library, Aalborg Historiske Museum or Aalborg Stadsarkiv can be included as well as your own investiations on-site.

http://www.aalborgstadsarkiv.dk/AalborgStadsarkiv.asp?Menu=AalborgStadsarkiv&Menu2=AalborgStadsarkiv_AalborgStadsarkiv

The material + results of the analysis is communicated in the form of photo montages, sound montages, video works or site writings on the course Trello page.

Literature

	Pri lit	Sec. lit	Dig. upload
See above			

6.

Lecture

Social Spaces in art, architecture and urban environments

Literature

	Pri lit	Sec. lit	Dig. upload
Bishop, Claire: Antagonism and Relational Aesthetics. In: October 11o. Fall 2004. P. 51-79 (Acces through AUB)	28		
Situations.org (Claire Doherty et.al): The new rules of public art. Online: http://publicartnow.com/2013/12/12/the-new-rules-of-public-art/	1		x
Conversations with RaumlaborBerlin. In: RaumlaborBerlin: Acting in Public. Jovis Verlag p. 10-36	13		
Niklas Maak: A new approach to urbanity. In: RaumlaborBerlin. Acting in Public. Jovis Verlag. P. 3-5	3		
https://youtu.be/E5NpuOcAVxU Svarre Birgitte: How to study public life.			

7
Lecture

Social art

The lecture will introduce to different ways of observing and describing and documenting the social/lived space and provide a vocabulary and tools with which to analyze, assess and define social space. Concepts such as Public domain, Public spaces and life style domains will be introduced and discussed in an art context. Various methods for observation and mapping of the social life in the city will be introduced.

Literature

	Pri lit	Sec. lit	Dig. upload
Hal Foster: The Artist as Ethnographer? In: Foster, Hal: The return of the real. Pp. 302-309	7		x
Erving Goffman: Behaviour in Public Spaces. Notes on the Social Organzation of Gatherings. NY 1963. Pp.193-197	4		x

8.

Presentation seminar: Pin-up and presentation of group assignments in plenum

Summing up, and making a shared overveiw of methods and approaches

The final session in AAMII is a pin-up session where each group will present a case study that they hhave analyzed All groups will present their work; their analysis and their choices in regards to representation/visualisation of the material. The various methods´ potential in relation to this semesters project work will be discussed further.

Literature: all the above

Basic Electronics II

The goal of Basic Electornics II is to advance your expertise in working with electronics in relation to interactive artworks. We will look at how you can power your projects when there is no wall power socket available, and how you can protect your components and circuits for outdoor installations. Furthermore, we will look at different types of electrical noise and how to deal with it by filtering the signals.

To support this semester's theme, we will also expand on how to use different lights in your installations and how you can control them with a microcontroller.

The course will cover:

- How to weather proof electronics for outdoor use
- How you can get power when there is no wall power socket available
- Dealing with noise and how you can filter noise from your signals
- Expanding the capabilities of the Arduino in terms of the amount of sensors and actuators you can connect.

The course assumes that you have knowledge of basic electronics. If the basics concepts cause problems, it is recommended that you revisit the curriculum of *Basic Electronics I* or have a look at the many online resources available, e.g.:

http://www.electronics-tutorials.ws/
http://www.allaboutcircuits.com/textbook/

All lectures will be followed by exercises that will help you apply the theory.

Lecturer: Kasper Skou Ladefoged

Semester Coordinator: Line Marie Bruun Jespersen

Participants: ArT2

Basic Electronics II is a course in Module 5: Performative Space and Technology
Literature:

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Make: Electronics, 2nd edition *ISBN-13: 9781680450262* *(same as PID1)*	X		yes (link)
Additional web based literature will be procided for each lecture.		X	

1
Lecture
Electronics Recap and Batteries
The lecture will start with a electronics recap to make sure everything from *Basic Electronis I* is understood and fresh in memory. Afterwards, we will continue to look into power sources and especially what you can do when there is no wall power outlet available and you have to rely on batteries, solar power, etc.

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Make: Electronics, 2nd edition *ISBN-13: 9781680450262* *(same as PID1) Chapeter 1 and 2 (Recap)*	X		yes (link)
• https://learn.adafruit.com/all-about-batteries/ • https://learn.sparkfun.com/tutorials/battery-technologies • https://learn.sparkfun.com/tutorials/how-to-power-a-project			

2
Lecture
Outdoor Installations and Weather Proofing

This lecture will cover how to include electronics, computers, speakers, etc. in outdoor installations while protecting it from rain, wind and sun. We will also investigate some of the constraints for the main projects.

Literature

	Pri lit	Sec. lit	Dig. upload
• https://learn.sparkfun.com/tutorials/interactive-hanging-led-			

array (also watch the video)			

3
Lecture
Dealing With Noice
This lecture will introduce different common sources of signal noise and which precautions you can take to reduce/avoid it. We will look at basic filtering and how to avoid a button press triggering several times when it is only pressed once (button debouncing).

Literature

	Pri lit	Sec. lit	Dig. upload
Make: Electronics, 2nd edition, by Charles Platt (2015). Experiment 9 and 23			
• What is a Filter?			X (link)

4
Lecture
Many inputs and outputs

Introduction and experimentation with how you can measure and control many things with a single microcontroller. The lecture will cover how to use multiplexers, shift registers, LED drivers, etc. using an Arduino. It will also include a brief introduction to building your own Arduino to reduce size and cost.

Literature

	Pri lit	Sec. lit	Dig. upload
Arduino Cookbook, 2rd edition: Section 5.8 and 7.7 Section 7.9 to 7.14	x		
Additional Literature ○ https://learn.adafruit.com/adafruit-arduino-lesson-4-eight-leds/ ○ http://www.instructables.com/id/Multiplexing-with-Arduino-and-the-74HC595/ ○ https://www.arduino.cc/en/Tutorial/ArduinoToBreadboard			X (link)

Digital Representation II (2D and 3D production methods)

General description:
The tools we use have a great impact on final products - in art, design or architecture. They also influence our way of thinking and creative expression. A trained eye will almost always be able to 'read' the software or family of softwares and fabrication technology used for the production of something. Tools both enhance, and limit us.

Objectives:
This semester's Digital Representation course will introduce students to 2D and 3D modelling tools and customized fabrication technologies and workflows.

The choice of software is often dependent on someone's educational background and unique way of knowledge acquisition, and our relationship to software is more intimate and mind bending than we realize.

Although it is impossible to cover many different software tools in depth in a short course, we try to go through software families and discuss strengths and weaknesses. Additionally, we cover manufacturing technologies with the aim to gathering a holistic view on tooling.

Task 0 and **task 1** will consist of a quick&dirty introductory session on 3d modelling and fabricating a nametag (0) and modifying a parametric model of a vase and exporting for fabrication (1).

Task 2 - for the rest of the course and workshops students will work together in designing fabricating and assembling a large scale installation to be placed in the Create atrium.

A live workshop session will introduce the design of the structure. Each student will fabricate a part (panel) of this work, and together we will assemble the whole. The panels have unique patterns informed by material representations of sound vibration. Students experiment with sound and create their stencil which they will morph and project on their respective panel. Sound vibration can be 'visualised' on different materials by placing a plate on a large speaker. If another granular material is spread on this plate, and a sound is played on the speaker, the granular material will take physical shapes with certain aesthetic and compositional qualities. Both the material of the plates and the sound influence these patterns. These are called Chladni plates or cymatics.

Once the panels are created, they are fabricated and assembled.

An opening exhibition for our installation will take place at a date to be announced.

Apart from the built installation, each student will have their name tags: first name is laser cut, last name is 3d printed. A video documenting the process, including renderings, stop motions and technical drawings will be presented during the exhibition. Students are assigned 30 second videos, which will be assembled in a short descriptive movie.

Pre-requisites:
A computer **MOUSE**. Please bring a mouse with a proper zoom to the lectures and workshops. There is no way to do anything without one.
Autodesk educational account. Autodesk is one of the largest companies making software tools. With the 3 year free educational account you will have access to tools such as - TinkerCAD, Fusion 360, Maya, 3dMax, AutoCAD, Inventor or Revit.

We go through **TinkerCAD** (browser based) and **Fusion 360** during this course - - both are 3d modelling tools
openSCAD installed - text based scripting for 3d modelling

Rhino 3d (if on Mac - Rhino 5 and Grasshopper) - 3d modelling and visual programming
Shotcut - video creation and editing

*Note: All covered software works for Windows and Mac. Some will have Ubuntu versions. However, your tutors - Jens and Anca prefer using these on Windows, so the live tutorials will be carried out on a Windows platform. We are able to give some Mac support, but ideally you bring a Windows OS.
CAD files will be provided before the beginning of the course.

Precedents:
Examples of cool pavilions / explorations:
https://vimeo.com/294668955
3d voxels made from Chladni plates
http://designplaygrounds.com/deviants/soundshapes-by-ricky-van-broekhoen/

Readings:
holistic:
Bret Victor: **Up and Down the Ladder of Abstraction**
http://worrydream.com/LadderOfAbstraction/

Bret Victor: **The Future of Programming**
https://vimeo.com/71278954

Infographic about the history of programming:
https://visual.ly/community/infographic/technology/history-computer-programming

Leonard Read: **I, pencil**
https://fee.org/resources/i-pencil/

Tehnical (more to add):
Rhino training:
http://www.rhino3d.com/download/rhino/5.0/Rhino5Level1Training

Comprehensive knowledge base on fabrication:
https://www.3dhubs.com/knowledge-base/

Lecture 1:

Introduction to digital tools and digital fabrication methods.
We start with an introduction to some software families (vector graphics, image processing, precision modelling, 3d sculpting, visual programming, text based programming for 3d modelling) and a brief tour through fabrication techniques, their pros and cons, material constraints etc.
After this we'll get everyone's hands dirty with **task 0** where we design and fabricate a name tag.
Task 1 is an introduction to a different type of 3d modelling tool: text based scripting using openSCAD. A parametric vase definition is given and students can play with the shape, generate unique designs and, later 3d print their vases.

Software tools for this lecture:
TinkerCad
OpenSCAD

Lecture 2&3:

We introduce the installation / pavilion which will be fabricated by the end of the course: CAD models, renderings, technical drawings and illustrations describing the work.
We then go through a live workshop where - using Rhino 3D and Grasshopper we reproduce the design of the installation, render, pannelize and export for fabrication.

Software tools for this lecture:
Rhino 3d - There is a 90 day free trial.
https://www.rhino3d.com/download
If working on Windows - please install Rhino 6.
If working on Mac - please install Grasshopper 3d alongside Rhino 5 (no Rhino 6 for Mac at this point).

Grasshopper, various Grasshopper plug-ins (Millipede, Mesh+, Weaverbird), list will be completed in following months.

Lecture 3:
Students get assigned a panel in the installation as well as the fabrication technique they will use for their part of the whole. Using a 'mobile laboratory', we start working with the physical visualization of sound patterns on Chladni plates.
With everyone's software tools of choice, we digitize the physical representation of the sound: *image format* to line work / *vector graphics*.

Software:
Fusion 360
Rhino 3d

Lecture 4:
Fabrication
Stop motion pictures will be taken during these last two stages.

Lecture 5-6-7:
Assembly of final structure.
Video creation from stop motion images, renderings, intermediate technical drawings.

Software:
Shotcut - free open source video editor - Win, Mac, Linux

Lecture 8
Presentation seminar

Perception
Course description

The purpose of the perception course is to work with concepts of space from different theoretical and practical angles with perception as the experiential centre. The students will work theoretically as well as practically with concepts of space and spatiality. Through the course students will get a basic understanding of the various paradigms of perception in relation to space, navigation and spatial relations and the theories introduced will have its outset in psychological and anthropological approaches to space and place. Students will work with assignments during the course. Assignments and documentation of work must be uploaded in the moodle space.

Perception II is a course in Module 5: Performative Space and Technology

Lecturer: Bo Allesøe

Lecture 1: perception of space and space of perception

This lecture will introduce the students to the perception of space and place, the different philosophical and scientific views through history.

	Prim. Litt.	Secund. Litt.	Digital upload
Pop, D, 2013: Space Percetion and its Implication in Architectural Design, Acta Technica Napocensis: Civil Engineering & Architecture Vol. 56, No. 2 (2013)	11		x
Agnew, John, Space and Place, in The Sage Handbook of Geographical Knowledge, chap. 23, pp. 316-331	15		x
Keefe & Nadel (1978) Remembrance of Places Past: a history of theories of space. In The Hippocamus as a cognitive map, Clarendon Press, pp.1-61	61		x

Sum	87		

Lecture 2: Space and aesthetics

This lecture will introduce to different understandings of space/place, perception and aesthetics

	Prim. Litt.	Secund. Litt.	Digital upload
Bohme, G. (1993). Atmosphere as the Fundamental Concept of a New Aesthetics. Thesis Eleven 36(1): 113-126 (Tilgængelig via AUB)	13		x
Ingold, T. (2000) Stop, Look and Listen! In *The Perception of the Environment*. Routledge. S. 243-287	44		x
Sum	57		

Lecture 3: Introducing the Aesthetic Walkabout

This lecture will introduce to the idea of an aesthetic walkabout drawing on both psychogeography as well as anthropological and sociological understandings of wandering. The lecture will end with an assignment for the students to be presented in the next lecture

	Prim. Litt.	Secund. Litt.	Digital upload
Coverly, Merlin, 2006: Psychogeography, Pocket Essentials, pp. 9-31	20		x
Ingold, T. (2000) Culture on the ground. The world perceived through the feet. In *Being Alive. Essays on movement, knowledge and description*. Routledge, pp. 33-50	17		x
De Certeau, M. (1984) Walking in the city. In *The Practice of Everyday Life*. Univerity of California Press, pp. 91-111	20		x
Sum	57		

Lecture 4: Art and Space

We will end this lecture course with a hermeneutical/phenomenological perspective on art and space,

thematizing distance and proximity...

	Prim. Litt.	Secund. Litt.	Digital upload
Heidegger, M. (1969) Art and Space. Man and World (Vol. 6, pp. 3–8).	6		x
Figal, G. (2010) Space. In *Aesthetics as Phenomenology*. Indiana University Press, pp. 183-222	39		x
Crowther, P. (2007) Space, place, and sculpture: working with Heidegger. Continental Philosophical Review, 40: 151-170 (Accessible through AUB)	19	x	
Sum	45	19	

Examination

An internal combined written and oral examination in Module 5: “Performative Space and Technology” (Performative rum og teknologi).

The examination will take the form of a conversation between the students, the examiner and another examiner on the basis of the project report or portfolio prepared by the student(s) 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: 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 aggregate grade is awarded for the artefact, the written and oral performances.

The assessment results in an individual grade.
Credits: 20 ECTS

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

Module description (description of each module)

Module title, ECTS credits

Physical Interface Design II
5 ECTS

Location

2. Semester

Module coordinator

Kasper Skou Ladefoged

Type/Method and language

Individual or small groups
English

Learning objectives:
During this module students should acquire:

Basic knowledge about:
• programming concepts for interactive systems
• actuating possibilities: servo motors, solenoids, and simple mechanics
• using micro-controllers: interface to the computer, analog/digital input/output
• circuit applications: DC filtering, circuit protection and amplifier
• real-time use of signals (such as ADC/DAC, sampling rate, scaling and filtering)
• related work in software development and the media arts

Skills in
• analyzing use of the basic programming with various sensors and actuators
• synthesizing knowledge in written documentation

Competencies in
• evaluating an artefact with regard to programming, sensors, and actuators

Academic content

In this module, students advance their knowledge of basic electronics and are introduced to fundamental concepts of programming interactive systems. Students learn how different electronic sensors and actuators can be interfaced to a microcontroller to design novel forms of interactions between man and machine.

Scope and expected performance

5 ECTS credits. 1 ECTS credit = 27,5 hours of work. 5 ECTS = 137,5 hours of work consisting of preparation for course sessions, course participation, group work, exercises, counselling and exams.

Module activities (course sessions etc.)

Programming I

Programming I is the first in a series of programming courses meant to teach fundamental concepts of imperative and object-oriented programming using the Processing (Java) language in

the context of real-time, multimedia systems. Programming I will introduce you to the foundations of imperative programming: types, operators, functions, and control flow.

Assignments will consist of short-answer and programming homework. Submissions must be in the form of plain-text files (.txt) for written answers and Processing source files (.pde) for source code. If not explicitly stated other formats will not be accepted. For multiple files, submit a single compressed .zip archive file.

All lectures will be followed by exercises that will help you apply the theory.

Lecturer: Kasper Skou Ladefoged

Semester Coordinator: Line Marie Bruun Jespersen

Participants: ArT2

Basic Electronics II is a course in Module 6 - Physical Interface Design II

Software (Required):

Processing

The students are requred to install Processing, before the first lesson.Installation tutorial can be gound by reading the first section at: https://processing.org/tutorials/gettingstarted/

Literature:

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Processing Tutorials: https://processing.org/tutorials/	X		yes (link)
Programming Interactivity: A Designer's Guide to Processing, Arduino, and Openframeworks. 2nd editon. *ISBN-13: 9781449311445*	32		yes (link)
Reas, Casey. Processing: a programming handbook for visual designers and artists. Second Edition. Mit Press, 2014. *ISBN-13: 9780262028288*		X	yes (link)
Illustrated history of computers: http://www.computersciencelab.com/ComputerHistory/History.htm		X	yes (link)
Comparison of programming languages: http://arxiv.org/abs/1007.2123		X	yes (link)

Mathematics refresher or "Probably All The Math You'll Ever Need" (Langford-Smith, F., editor (1953). Radiotron Designer's Handbook, chapter 6 Mathematics, pages 254–305. Amalgamated Wireless Valve Company Pty. Ltd., Sydney, Australia, 4th edition.)		54	yes (link)

Sensors and Actuators II

Sensors and Actuators II will work with applying programming concepts taught in programming 1 to produce interactive artefacts using microcontrollers. The course requires knowledge of basic electronics, which is applied to connect the microcontroller with sensors (inputs) and actuators (outputs). The course will use the Arduino microcontroller platform to teach these topics.

All lectures will be followed by exercises that will help you apply the theory.

Lecturer: Kasper Skou Ladefoged

Semester Coordinator: Line Marie Bruun Jespersen

Participants: ArT2

Literature:

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Arduino Cookbook, 2nd edition *ISBN-13: 9781449313876*	X		yes (link)
http://arduino.cc/en/Reference/HomePage Official references and tutorials for code examples included in the Arduino software package. I would not recommend venturing to the official Arduino playground until after the course.		X	yes (link)
http://arduino.cc/en/Tutorial/HomePage Official references and tutorials for code examples included in the Arduino software package. I would not recommend venturing to the official Arduino playground until after the course.		X	yes (link)
Arduino Comic A illustrated conceptual and short practical introduction		X	yes (link)
http://www.ladyada.net/learn/arduino/ A thorough and very practical introduction complete with schematics, code examples, explanations and exercises.		X	yes (link)

http://www.jeremyblum.com/category/arduino-tutorials/ A video series with good explanations on topics ranging from very basic to very advanced. Comes with recommendation from previous students.		X	yes (link)

Examination

An internal written examination in Module 6: “Physical Interface Design II” (Fysisk interface design II).

Form of examination: c)
The examination is a 7-day assignment on a set subject.
Number of pages: the written part must not exceed 5 pages.

Evaluation: pass/fail. 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%
Attendance 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 description (description of each module)

Module title, ECTS credits

Art in Context II - Media Art Theory
5 ECTS

Location

4. Semester

Module coordinator

Morten Søndergaard

Type/Method and language

Individual work in relation to course activities
English

Learning objectives:
During this module, students should acquire:

Basic **knowledge** about

- 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

Skills in
- 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

The module ”Art in Context II” examines media art works and their cultural, aesthetic, social, and technological positions in the 20th and 21st centuries. Together with Art in Context I, the module introduces the students to the academic and theoretical contexts of the mixed field of Art and Technology. Through different teaching formats such as lectures, workshops, study-trips, and seminars, the students will get acquainted with the methodologies of analyzing media art and digital design artifacts.

Scope and expected performance

5 ECTS credits. 1 ECTS credit = 27,5 hours of work. 5 ECTS = 137,5 hours of work consisting of preparation for course sessions, course participation, group work, exercises, counselling and exams.

Module activities (course sessions etc.)

Literature:

Baumgarten: *Aesthetica – In:* Sven-Olaf Wallenstein (2013): Baumgarten and the invention of the Aesthetic, Site Journal/33, 27 pp. Available on Moodle

Dewey: Art as Experience (Excerpt). Secondary.

Roger Fry (1920), ‘An Essay in Aesthetics’, in: Art in Theory, pp.102-110. Moodle

Sigfried Kracauer (1927), ‘The Mass Ornament’ (excerpt), in Art in Theory, 462-66. Moodle.

Adorno: Aesthetic Theory (1997), London/New York: Continuum, pp. 341-343. Moodle.

Walther Benjamin (1939): “The Author as Producer”. Moodle

Heidegger: “The Question Concerning Technology” (1954). Moodle

Eco, Umberto (1958/1989): The Open Work, translated by Anna Cancogi, Harvard University Press, pp. 84-104. Moodle

Foucault: Mot et les Choses (The Order of Things), Introduction (1968). Moodle.

Jack Burnham: “The Aesthetics of Intelligent Systems” (1969). Moodle.

D. Haraway: “A Cyborg Manifesto” (1988)

S. Zielinski: A Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means, Introduction (2006)

N. Katherine Hayles (1999): How We Became Posthuman. Virtual Bodies in Cybernetics, Literature, and Informatics. Preface and chapter 1, pp ix – 25. 28 pages.

J. Parikka (2012): What is Media Archeology. Cambridge: Polity Press, introduction pp 1-17. Permalink: http://primo.aub.aau.dk/desktop:Samlet:AUB01_ALEPH001732677

Adajian, Thomas, "The Definition of Art", *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/fall2018/entries/art-definition/, pp 1-12 (no page numbers in online version)

Zangwill, Nick, "Aesthetic Judgment", *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/fall2014/entries/aesthetic-judgment/

Matei Calinescu, Five Faces of Modernity, Duke University Press, 1987, pp. 240-248. Moodle. 8 pages.

Geert Lovink, ‘The Legacy of Tactical Media’ in: Geert Lovink, Organization After Social Media, Minor Compositions Press, 2018, pp 17-33. Online access. 15 pages.

1

Framing Aesthetic Theory and analysis: Some analytical paradigms

Lecturer Morten Søndergaard

This lecture introduces students to modern aesthetic theory, its conceptual and philosophical history, as well as its relation to art and technology. In particular, the lecture will introduce to the most dominating (and very different) paradigms on (the use of) the formation of meaning (betydningsdannelse) in aesthetics since around the 19th Century. They are resonating with

(very different) epistemologies and their conceptual organisation (scientific theories) (videnskabsteorier). The study of these paradigms will structure the course in general and will be the foundation of the final workshops and exercises aiming at introducing the students to the basics in academic analysis of art/tech projects and (media) aesthetic artefacts. This will be coupled with a general introduction to the 'circulation', 'problem' or 'crisis' (depending of the perspective) of representation (of knowledge) in art and in general, which through its various interpretations, effects and denials has been and still is the overall context of the study and analysis of practices that work across art, technology, science, media and design.

Literature

	Pri lit	Sec. lit	Dig. upload
Roger Fry (1920), 'An Essay in Aesthetics', in: Art in Theory, pp.102-110	8		
Sigfried Kracauer (1927), 'The Mass Ornament' (excerpt), in Art in Theory, 462-66	4		
Adajian, Thomas, "The Definition of Art", *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/fall2018/entries/art-definition/, pp 1-12 (no page numbers in online version)		x	

2

Aesthetic Paradigm 1: Sense-perception and meaning - Aesthetic Formalism and beyond

Lecturer Morten Søndergaard

This lecture introduces students to the first paradigm in modern aesthetic theory, its conceptual and philosophical history, as well as its relation to art and technology: Formalism and the idea that meanings are immanent in the things and objects of the world and sense-perception connects us to that meaning, unmediated, particularly through vision. The question is, then, how this is possible? We will look at different theories, bringing different ideas to the table: Baumgarden (beauty), Peirce (signs), Dewey (experience), Böhme (atmosphere).

The lecture will be based on examples from the vast field of art and technology.

Literature

	Pri lit	Sec.	Dig.

		lit	upload
Sven-Olaf Wallenstein (2013): Baumgarten and the invention of the Aesthetic, Site Journal/33, 27 pp. Available on Moodle	27		x

3

Aesthetic Paradigm 2: Conceptual meaning – Frankfurter Schule, modern hermeneutics and beyond

Lecturer Morten Søndergaard

This lecture introduces to theories belonging to the significant paradigm of conceptual meaning and how aesthetics meaning-formation (æstetisk betydningsdannelse) is mediated conceptually. This paradigm connects aesthetics to language, (and an awareness of) it's conceptual and semantic horizons and interpretations. We will look at different theories working in the paradigm: Walter Benjamin (mechanical reproduction), Adorno (negative dialectics).
Secondary readings: Gadamer (modern hermenutics), and Harmut Rosa (acceleration society).
The lecture will be based on examples from the vast field of art and technology.

Literature

	Pri lit	Sec. lit	Dig. upload
Adorno (2014/1938): Aesthetic Theory, London/New York: Continuum, pp. 341-343. Moodle Upload.	2		x
Walther Benjamin (1934), "The Author as Producer", pp. 1-9. Moodle Upload.	9		x

4

Aesthetic Paradigm 3: Contextual meaning – post-structuralism, constructionism, and beyond

Lecturer: Morten Søndergaard

This lecture introduces to theories belonging to the significant paradigm stating that any meaning-formation, including an aesthetic one, is always framed (and limited) by context and discourse, and there is a basic critique of the subject-object 'dualism' of paradigm 1 and 2. We will look at different

theories working in this paradigm: Eco (the open work (limits of interpretation), Foucault (discourse), Baudrillard (simulacrum), Kristeva (political feminism, abjectet),

The lecture will be based on examples from the vast field of art and technology.

Literature

	Pri lit	Sec. lit	Dig. upload
Eco, Umberto (1958/1989): The Open Work, translated by Anna Cancogi, Harvard University Press, pp. 84-104. Moodle upload	20		x
Foucault (1976): "Different Spaces" in: Rabinow, P (ed). Essential Works of Foucault 1954-1984. Pp 174-184.	10		x
Foucault, M. (1968) "The Order or Things" in: Rabinow, P (ed). Essential Works of Foucault 1954-1984. Pp 261-269. Moodle upload.	8		x

5 & 6 (Primarily 2nd semester): Critical Theory and Academic Writing

Lecturer: Morten Søndergaard

Modern critical theory is an approach to art and culture that considers the (largely hidden) social, historical, emotional, technological and ideological forces and structures which produce and constrain them. The central question of critical theory is (wo)man's estranged relation to nature, that there are social forces in culture that are liberating from the overall force of modern (capitalistic) society, money; But these forces are at the same time resulting in a fragmentation and individualization of approaches to cultural expression, and ways to represent (knowledge and meaning) aesthetically. Of course, technology plays an important role in more recent critical theories, investigating the structuring of culture through its use of technology as social practice and intense play on feelings and (superficial) experiences.

Academic writing is the medium of double critical reflexivity processes, based on methodological investigations (gathering) and analysis of 'data' or 'phenomena' on the one hand; and a theoretical (generalizing, problem-driven) interpretive or discursive reflection as part of an academic argumentation. Academic writing has a longstanding relation to critical theory and is based on expectations of 'acribi': planned, focused, structured, evidenced and with clarity in conceptual use and style.

Lecture 5: Introduction to critical theoretical practices (in the context of Art & Technology studies).

Workshop / exercise: Applying critical theory in practice.

Lecture 6: Introduction to the basics of academic writing (and the relationship between creative practice processes and critical reflection)

Workshop / exercise: Write a problem formulation based on your semester project.

Literature

	Pri lit	Sec. lit	Dig. upload
Matei Calinescu, Five Faces of Modernity, Duke University Press, 1987, pp. 240-248. Moodle.	8		x
Geert Lovink, 'The Legacy of Tactical Media' in: Geert Lovink, Organization After Social Media, Minor Compositions Press, 2018, pp 17-33. Online access.	16		Online access.

5b (4th semester)

Aesthetic Paradigm 4: Technology and meaning – Media Art and Post-humanism

Lecturer Morten Søndergaard

This lecture (and the next) introduces to theories enhancing but also critizing the positions from paradigm1, 2 and 3. Shared by all in paradigm 4 is the same (Heideggarian-based) analysis that technology is our transcendence, which we can neither escape nor overlook. We are challanged to understand what this does to the concept of meaning itself as well as the problems arising from the premise that man cannot conceptualize most of what is outside our sense-perception, interpretative or contextual horizons. Aesthetics, in as much as it does provide meaning, is situated and particular (local) and reflects (existential and essential) challenges (and to some extent a crisis, which however cannot be 'solved' by merely perceiving or understanding it). Lyotard (The condition of computerization), Donna Haraway (Cyborg Manifest / philosophical feminism), Katherine Hayles (Technogenesis), Don Ihde (Post-phenomenology).

The lecture will be based on examples from the vast field of art and technology

Literature

	Pri lit	Sec. lit	Dig. upload
Heidegger: “The Question Concerning Technology” (1954). 15 pages. Moodle	15		x
N. Katherine Hayles (1999): How We Became Posthuman. Virtual Bodies in Cybernetics, Literature, and Informatics. Preface and chapter 1, pp ix – 25. Moodle.			x
D. Haraway (1985): A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s, online at Stanford uni: https://web.archive.org/web/20120214194015/http://www.stanford.edu/dept/HPS/Haraway/CyborgManifesto.html			X Link

6b (4th semester)

Aesthetic Paradigm 5: Technology framing cultural meaning. Kulturtechnic and Aesthetics from Intermedia to Media Archeology

Lecturer Morten Søndergaard

This lecture looks further into theories criticizing the positions from paradigm1, 2 and 3. The theories in focus here are adding the claim that without technology and machines, there would be no culture. Thereby claiming, that any cultural meaning is founded and shaped by technology. Here, aesthetics is heavily influenced by Wittgenstein, Systems theory, the cybernetic philosophers Gordon Pask, Frederic Kittler and Siegfried Zielinski.

The lecture will be based on examples from the vast field of art and technology – from intermedia to media archeology.

Literature

	Pri lit	Sec. lit	Dig. upload
Jack Burnham: “The Aesthetics of Intelligent Systems” (1969).			X

Moodle.			
J. Parikka (2012): What is Media Archaeology. Cambridge: Polity Press, introduction pp 1-17. Permalink: http://primo.aub.aau.dk/desktop:Samlet:AUB01_ALEPH001732677	17		X Link
S. Zielinski (2006): A Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means, Introduction		x	

7 & 8
Excursion with Exercise: Contexts of analysing aesthetics of art and technology

Lecturer: Morten Søndergaard

We will visit ARoS and work in some of the exhibitions there – you will be expected to arrange your own transport t/f Aarhus. Entrance to ARoS is free for ArT students, bring your student card.

This workshop and exercise form the basis of the written hand-in required for successful completion of the course.

1. You will work in groups (those you are already working in), choosing a specific art work or context to analyse. You will need pen and paper to make notes and sketch!
2. When chosen, start by sensing and perceiving the art work individually before discussing it further in the group. Remember to sense with your whole body, ears, skin, etc ! What words come to mind first when looking and listening to the art work – write them down! Do not be afraid of using elaborate words or to draw, or anything that may describe this better than whole sentences!
3. Then present to each other your perceptions. Try not to interpret too much at this stage. Allow metaphors and ambiguities.
4. Then: Discuss and construct a collective description based on a first attempt at interpretation (bringing in conceptual layers) - if disagreement, note it down and play along with that!
5. Now, turn your attention to the context and discourses. What contextualizes the art work? What contextualizes your interpretations? What discourses are present?
6. Finally, find at least one theoretical source (text) that could help you turn your description into an analysis. Start by paraphrasing the central theoretical idea from the text and ask the question: where, in the art work you are looking at / listening to / describing could that theoretical idea be helpful to clarify or critically reflect on the artistic idea / representation? Does the art work stand alone or is it depending on conceptual or contextual constraints for us to 'understand' its meaning?
7. The day will culminate with the groups presenting their analysis and reflection on the chosen art work / context. The presentation and analysis should draw on theories,

	either from the study/semester in general or the AiC course. It may also include other relevant examples and theories.
Examination An internal written examination in **Module 13: "Art in Context II – Media Art Theory"** (Kunst i kontekst II – mediekunstteori). **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. **Evaluation**: Grading according to the 7-point scale. Credits: 5 ECTS The examination should demonstrate that the student has fulfilled the objectives outlined above.	