AALBORG UNIVERSITET

Art & Technology 2nd Semester 2016

Performative Space and Technology:

The new rules of public art

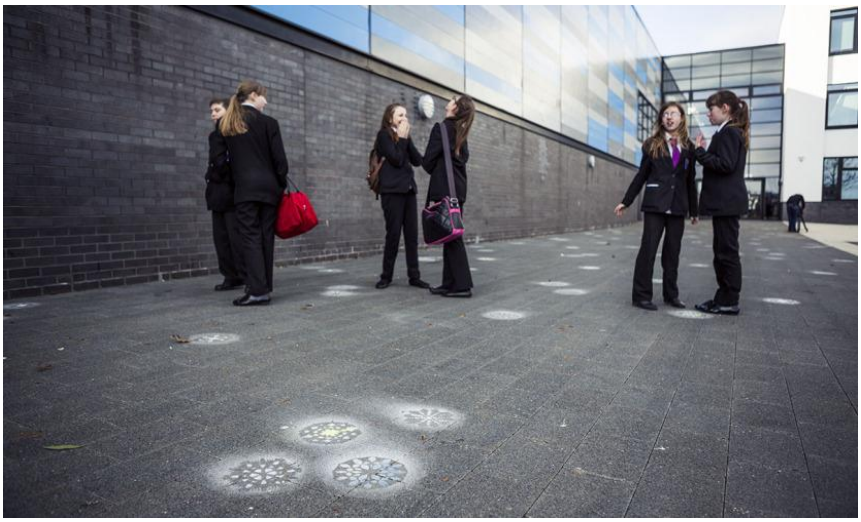

Illustration: Anna Barriball. Snowflakes. 2013. Photo: Max McClure

Semester description

Semester details

School: CAT

Study board: Art and Technology

Study regulations: BA Study Program in Art and Technology.

Semester framework theme

The semester project for ArT2 2016 is called: The new rules of public art performative space and technology.

In this project ArT2 will create art installations for different types of sites in Aalborg that will accentuate the identity and characteristics of the site.

The sites are:

- The Chapel at Almen Kirkegård
- Limfjorden. The landing steps next to Jomfru Ane Parken
- The passage between Vesterbro and parking lot next to Sygehus Nord.

The art installations must take departure in a thorough analysis of the site, and the results of the analysis must inform and guide the development of the art installation. In the development of the installations you can draw inspiration from "The New Rules of Public Art". The installation must, of course, live up to the title of the semester: Performative spaces and technology.

What is a performative space?

The semester operates with two main definitions of a 'performative space' – and the project challenges you to work with both definitions!

1. Performative space as a space that performs: the space itself has interactive or responsive features that can react on the environmental impacts, which can be light, wind, touch, human presence, etc. (Kolarevic and Malkawi 2005)
2. Performative space as a space that promotes certain performances: the layout of the space invite/afford/promote specific behaviors, such as dialogue, relaxation, physical activity etc. (Kolarevic and Malkawi 2005)

Other aspects of the ArT2 semester project:

At 2nd semester your semester project must address 'architectural space and/or urban space', in the following ways:

The 'performative spaces' must contain elements that make the installation interesting both during daylight and at night.

If your 'performative spaces' is an outdoor space, it must be able to endure wind, rain, heat and use by many visitors. Obviously weatherproofing is important. Functional aspects, such as creating opportunities for seating, shade or shelter can also be part of the project. Be also aware that access to power might be limited, so develop installations that will work with the power outlets available or on alternative power sources.

Your installations will have to be transported to the sites just before the exhibition date, and you will be responsible for the transportation yourself! You might not be able to install your installations days in advance, so your installations must be easy and quick to install and must fit into the Christiania bikes/ordinary cars.

In your report a detailed instruction for assembly must be included. Assembly must be easy and quick and the instructions so clear, that you, in principle, would be able to hand your installation over to strangers, and they could install it for you. Think: movable, easy-to-install and pop-up like performative space.

For the exam and in the report students must present their projects in:

I. a context model 1:50 (groups working on the same site, can share the context model)
II. 1:1 functional elements
III. in 2D and 3D visualizations (drawing, poster, photomontage, sketch-up, etc.)
IV. process models 1:25 (cardboard, wood, 3d print, laser cutting, modeling wax, smart wax etc.)
V. and other prototypes

Semester organisation and time schedule

The students academic progression:

The semester projects must take departure in a thorough analysis of the site. The sites identity is not only considered to be the physical site/space, but can also be the historic, the cultural, social or affective context. Lectures on site analysis, public art, site-specificity and mapping in AAM II and Perception II will deal with these topics.

Form and Aesthetics: Any installation is the result of a strong idea of what kind of experience and impact the work should give 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 shape, which is going to be developed further this semester. The artistic development of the form of the installation 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.

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 out-door projects are central topics.

It is expected that report writing will take place throughout the semester, and simultaneously with the practice-based work on the project.

Semester coordinator and secretariat assistance

Semester coordinator: Line Marie Bruun Jespersen, KOM

Module coordinator: Performative space and technology, Line Marie Bruun Jespersen KOM

Module coordinator Art in Context (AICII): Elizabeth Ann Jochum, KOM

Module coordinator Physical Interface Design (PIDII): Markus Löchtesfeld, MT

Semester secretary: Anne Nielsen

Teaching staff:

Jakob Borrits Sabra, AD:MT

Betty Li Meldgaard, KOM

Martin Kibsgaard Jørgensen, AD:MT

Mads Brath, AD:MT

Module description.

Module 5: Performative space and technology/Performative rum og teknologi (20 ECTS)

Activity code: HSA220019F

Location

2nd semester

Study board: Art and Technology

Module coordinator

Line Marie Bruun Jespersen, KOM

Type and language

Project module

English

Objectives

Module contents:

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.

Courses:

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

- Perception in Theory and Practice II
- Artistic and Academic Methodology II (Installation, Architectural Spaces and Urban Design)
- Digital Representation I – 2D and 3D Construction methods
- Basic Electronics II

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 performative aspects
- producing concepts for spatial installations of artistic quality
- communication the final design in texts, drawings, and models.

Academic content and conjunction with other modules/semesters

Semester theme: Performative Spaces and Technology

Project course module: Artistic and Academic Methodology II, DRI, Perception II, Basic Electronics II,

The following courses are offered in relation to the project module:

Artistic and Academic Methodology II (Installation, Architectural Spaces and Urban Design) – AAMII:

Artistic and Academic Methodology II will take the form of workshop activities related to site-specific art, so the students will get insights into how to explore a site from various perspectives: the spatial characteristics, the sociological aspects, the landscape qualities of the site etc.

Digital Representation I - 2D-3D Constructions Methods (DRI):

DR1 is a workshop in different digital construction methods in 2D and 3D, including the use of the laser cutter. The workshop will support the construction phase of the works.

Perception in Theory and Practice II (PERII):

The course will support the students’ broader understanding of their own practice in the semester project.

Basic Electronics (BE):

The course will focus on topics relevant for the semester theme, as it builds upon the knowledge acquired during first semester.

Scope and expected performance

Total workload: 20 ECTS = 550 hours pr. student

13 ECTS project work =375,5 hours pr. student

7 ECTS courses=192,5 hours pr. Student

AAMII 2 ECTS=55 hours

Teaching hours. 8x45min=6 hours

Workshop activities, Instructions 8x45min= 6 hours

Workshop activities, mapping, analysis etc. 23 hours

Preparation, reading 20 hours

DRI 2 ECTS=55 hours

Teaching hours 8x2x45min=24hours Work shop activities 25 hours Preparation, reading etc. 6 hours **BE 1 ECTS =27,5 hours** Teaching hours 4x2x45min=12 hours Work shop activities Preparation **Perception 1 ECTS =27,5 hours** Teaching hours 4x45min=12 hours Work shop activities 10 hours Preparation 5,5 hours
Participants: ArT2 students.
Prerequisites for participation Students who have passed ArT1 or can demonstrate equivalent qualifications

Artistic and Academic Methodology II (AAMII).

Lecture 1. Thirdspace.

AAMII is an intensive course that covers various strategies in space/site registration, ways of experiencing space,and includes tools and techniques for visualizing the empiric material and results in the form of drawings, diagrams, maps, photos, videos and sound.

The course is organized as a series of workshop-days that focus on each of Edward W Sojas aspects of space according to his “”Thirdspace””: time, space and the social. Edward W. Soja draws on Henri Lefebvres “The Productions of Space” in his analysis of Thirdspace.

The first lecture introduces to Thirdspace and gives examples of art works that relate to any of the three aspects of space.

Date:

Lecturer: Line Marie Bruun Jespersen

Set readings:

Edward Soya: Thirdspace. Journeys to Los Angeles and Other Real-and-Imagined Places. Blackwell Publishers. 1996 pp.53-70
Jane Rendell: Art and Architecture. A Place Between. I.B.Tauris. 2006. Pp. 15-20

Lecture 2. Space and the Creation of Spatial Experience.

This lecture will give an introduction to phenomenological and formal analysis of architectural and urban spaces, based on the writings of Kevin Lynch, Gordon Cullen, Rob Krier and Francis D. Ching,

The lecture will introduce to different concepts for creating space and provide a vocabulary and tools with which to analyze, assess and define space. Spatial experiences such as: a space to stay in/ a space to pass through/a route to follow/a point de vue,/atmospheres as well as the use of “space-makers” such as physical objects, light, rhythms and sounds will be explored.

The lecture also introduces to ´how to read the city´, i.e. the legible city and urban architecture analysis, focusing on Lynch´s text “Image of the City”, Cullens Serial Vision and Kriers insights into space configuration.

Lecturer: Line

Date:

Set readings:

Jane Rendell: Art and Architecture. A Place Between. Between Here and There. Pp. 20-57

Kevin Lynch: The Image of the City. MIT Press 1960 pp. 46-49

Gordon Cullen: The concise townscape. Architectural Press 1961 Pp. 17

Rob Krier: Urban Space. Academy Editions London. 1979. Pp. 15-62

Ching, Francis.D.K.: Form, Space and Order, 4th ed. Wiley. 2015 Organization pp. 197-242 Circulation pp. 252-294

(Note: most of the titles above contains many diagrams)

Lecture 3. Workshop: Space.

The students will be assigned case studies that must be analyzed and presented to the other students both on the course blog and in a presentation in the final lecture. The workshop session begin with an introduction

to the assignments and the requirements for the deliverables.
Keywords: defining space, creating space, spatial experience, mapping space.

Students will visit the sites in Aalborg, and collect empiric material in set groups.

Deliverables: The material + results of the analysis is communicated in the form of Serial Visions, Lynch inspired maps, formal analysis of the space configuration of the site in drawings and card board models. All materials must be documented on the wordpress blog before next lecture.

Materials:

For this workshop you must bring:

Camera, paper for notes, pens, paper for drawing, prints of maps of the site (to be found on Moodle). If you have a long measuring tape (10 or 20meters) please bring it.

You must wear WARM and practical clothes according to Danish winter weather, so that you will be able to work and keep warm– you will spend a substantial part of the day outside.

You may have to revisit the site after “hours”; either to experience the site at other times of the day or to collect additional material.

Set readings:

Reading for Lecture 2

Lecture 4. TimeSpace: Mapping time and investigating various layers of the site.

Lecturer: Jakob Borrits Sabra

In this lecture we will take a brief look at the different concepts Space and Place through the lens of Tim Cresswells before venturing into the writings of Nigel Thrift and John May to understand their 'TimeSpace' - a construction 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 we will try to practice TimeSpace by investigating the multiple times of the site, the social practices now and then and how it has shaped its surrounding geographies.

Date:

Set readings:

Tim Cresswell: Place. A short introduction. Intro pp. 1-10

John Urry: Sociology Beyond Societies. Times. Kap. 5 pp. 105-130

Nigel Thrift: Timespace. Introduction pp. 1-20

Research the history of the three sites. You can visit Aalborg Historiske Museum or search the three sites in Aalborg Stadsarkiv for historic maps and photos.
http://www.aalborgstadsarkiv.dk/AalborgStadsarkiv.asp?Menu=AalborgStadsarkiv&Menu2=AalborgStadsarkiv_AalborgStadsarkiv

Recommended readings:

Jane Rendell: Art and Architecture. A Place Between. Between Now and Then. Pp.73-145

Lecture 5. Workshop: Time & History.

The students will be assigned case studies that relate to time and history, which must be analyzed and presented to the other students on the blog. Students will visit the sites in Aalborg, and collect material for their analysis in groups.

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

Materials:

For this workshop you must bring:

Dictaphone, video camera (Smartphones can do both sound/video), camera, paper for notes, pens, paper for drawing, prints of maps of the site (to be found on Moodle). You must wear WARM and practical clothes according to Danish winter weather, so that you will be able to work and keep warm– you will spend a substantial part of the day outside.

Lecturer: Jakob Borrits Sabra

Date:

Set readings:

Readings for lecture 4

Lecture 6. Analyzing and mapping The Social Space/Lived Space.

The lecture will introduce to different ways of observing and describing 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.

Lecturer: Jakob Borrits Sabra

Date:

Set readings:

Hajer & Reijndorp, 2001: In search of new public domain, NAI publishers, Chap 1: Introduction, pp.1-17

Gehl, J., 2007: Changing public space for a changing public life, in Open Space - People Space, Taylor & Francis, pp. 3-9

Travlou, P., 2007: Mapping Youth Space in the Public Realm in Open Space - People Space, Taylor & Francis, pp. 71-81

Recommended readings:

Jane Rendell: Art and Architecture. A Place Between. Between One and Another. Pp.145-195

Lecture 7. Workshop: social space.

The students will be assigned case studies that must be analyzed and presented to the other students.

Keywords: Lived spaces in Aalborg; Life style domains and New Public Domains.

Students will visit the sites in Aalborg, and collect empriric material in groups.

Deliverables: The material + results of the analysis is communicated in the form of photo collages, video works, site writings.

Lecturer: Jakob Borrits Sabra

Date:

Set readings:

Readings for Lecture 6

Lecture 8. Pin-up session: Sharing knowledge: form and content.

The final lecture in AAMII is a pin-up session where all site analysis´ are presented to the semester. 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.

The group formation process will follow the pin-up-session, as we will identify themes to focus on in the projects, based on the students' interests.

Lecturer: Jakob Borrits Sabra and Line Bruun Jespersen

Date: 19.2

Set readings: 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/

Miwon Kwon: Public Art and Urban Identities. Online: http://eipcp.net/transversal/0102/kwon/en

Perception in theory and practice II (PEII).

Objectives

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 architectural approaches to space and place.

Siegfried Gideon ³Space-time in Architecture² - excerpts

(will be uploaded to Moodle min. 2 weeks before lecture)

James J. Gibson² Ecological approach to visual perception² - excerpts

(will be uploaded to Moodle min. 2 weeks before lecture)

Guy Debord in ³Situationist International². Ed. Knabb, Bureau of public

Secrets, 2009

Alex Wade, ³Spatial typologies of Space², E|C Serie Speciale · Anno III,

nn. 5, 2009

http://makingmaps.net/2009/06/22/making-psychogeography-maps/

Walter Oetsch talks about the perception of space -

https://www.youtube.com/watch?v=WdcW0aqpA3o

Lecture 1. Space and Perception.

The first lecture introduces various concepts of space and scientific theories relating to space.

Lecturer: Betty Li Meldgaard

Date:

Set readings:

Reco

Lecture 2. Space and Perception.

Continuation of Space and Perception 1, where theories of space perception are introduced. This lecture will end with an introduction to Psycho - geography and the assignment for the course will be presented.

Assignment: Psycho-geography after Dark. The purpose of the assignment is to explore the urban environment after dark. In the dark perception may be distorted due to the lack of natural light and the presence of artificial light and the various shadows that appear. Sound may appear altered due to an altered self-awareness and things that were comfortable and safe in the light may appear to be the opposite in the dark. The purpose of the assignment is to create a psycho- geographical map of the city in the dark. The objectives of assignment is to enable students with basic understanding of how light and shadow can alter the perception of space as well as the sense of presence in a place. The purpose of the assignment is further to provide a method that is relevant for the main semester assignment.

Lecturer: Betty Li Meldgaard

Date:

Set readings:

Recommended readings:

Lecture 3. Psycho-geography.

Continuation of lecture 2, with specific focus on psycho-geographical mapping.

Lecturer: Betty Li Meldgaard

Date:

Set readings:

Recommended readings:

Lecture 4. 3D on 2D.

Theories of perception vary in the degree they are capable of producing a valid explanation of perception. In this lecture we will look at theories that are suitable as a foundation for constructing 3D images on 2D planes.

Lecturer: Betty Li Meldgaard

Date:

Set readings:

Siegfried Gideon “Space-time in Architecture” - excerpts

James J. Gibson” Ecological approach to visual perception” – excerpts.
http://makingmaps.net/2009/06/22/making-psychogeography-maps/

Guy Debord – “Situationist”.

Basic Electronics (BE).

Objectives

The goal of this course is to advance the students expertise in working with electronics in relation to interactive artworks. 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.

Lecture 1. 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.

Lecturer: Martin Kibsgaard

Date:

Set reading:

Make: Electronics, 2nd edition, by Charles Platt (2015). Chapter 1 and 2

Web resources:

https://learn.adafruit.com/all-about-batteries/

https://learn.sparkfun.com/tutorials/battery-technologies

https://learn.sparkfun.com/tutorials/how-to-power-a-project

Lecture 2. 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.

Furthermore, Thomas will talk about how you can make an autonomous boat using cheap electronics. (???)

Lecturer: Thomas Kristensen and Martin Kibsgaard.

Date:

Set reading: Web resources:

Several guides and tutorials on weather proofing electronics.

Lecture 3. Dealing with noise.

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).

Lecturer: Martin Kibsgaard

Date:

Set readings:

Make: Electronics, 2nd edition, by Charles Platt (2015). Experiment 9 and 23

Web resources:

TBA

Lecture 4. 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.

Lecturer: Martin Kibsgaard

Date:

Set readings:

Arduino Cookbook, Section 5.8 Reading More Than Six Analog Inputs, 7.7 Controlling an LED Matrix Using Multiplexing and from 7.9 Driving a 7-segment LED Display to 7.14 Increasing the Number of Analog Output Using PWM Extender Chips

Web resources:

https://learn.adafruit.com/adafruit-arduino-lesson-4-eight-leds/

http://www.instructables.com/id/Multiplexing-with-Arduino-and-the-74HC595/

Digital Representation I - 2D-3D Constructions Methods (DRI).

Materials: For DR1 you must bring:

Programs: You must install the program **Rhinoceros** (newest edition) on your computers before the course begins.

A free 90 day trial version is available at: https://www.rhino3d.com

Workshop 1. Basic navigation and modelling in Rhino.

The module will introduce basic tools, modeling operations and workflows in Rhinoceros. The students will have to bring a laptop with Rhino installed and the workshop will be arranged as 'learning-by-doing' sessions.

Lecturer: Mads Brath

Date:

Set readings:

It is recommended that you get familiar with the functions presented in Rhino 5 Training Level 1 Training Guide p. 11 – 47 (found at: http://www.rhino3d.com/download/rhino/5.0/Rhino5Level1Training) You must install Rhino before the course begins, you could use the following link: http://www.rhino3d.com/download (evaluation (free) or full installation)

CAD files used in the workshop will be available through moodle before the course.

Workshop 2. Modelling and Laser Cutting.

Modelling and preparation for laser cutting. Brief description: In this module we will look at how to model complex geometries and how to transform these from 3D objects to 2D curves for laser cutting. The students will have to bring a laptop with Rhino installed and the workshop will be arranged as 'learning-by-doing' sessions.

Lecturer: Mads Brath

Date:

Set readings:

We use the Training Guide from Module 1, but specifically Chapter 9: Creating surfaces. Rhino 5 Training Level 1 Training Guide p. 162 – 196 (found at: http://www.rhino3d.com/download/rhino/5.0/Rhino5Level1Training) You must install Rhino before the course begins, you could use the following link: http://www.rhino3d.com/download (evaluation (free) or full installation) CAD files used in the workshop will be available through moodle before the course.

Lecture 3. CAD-CAM.

This lecture will look at the basic aspects of working between the digital space in Rhino and the production of physical prototypes through CAM machinery. The student will be introduced to several case studies that will

showcase the potentials and limitations of 2D production and how they deal with subjects like uniqueness, repetition, numbering, interlocking assemblies, joints, material behavior, etc.

Lecturer: Mads Brath

Date:

Set readings:

“Digital Design and Manufacturing – CAD/CAM Applications in Architecture and Design”; Schodek, D.; page: 237-255

Workshop 4 .– 5. – 6. Joints.

This workshop will deal with the design of joints through hands-on work with physical models. The student will work with different joining techniques and learn how altering the joint can alter the potential design space of the final product. The student will also learn how to use a laser cutter and how to tweak the settings of this machine to get a desired output.

Lecturer: Mads Brath

Date 4:

Date 5:

Date 6:

Set readings:

Recommended readings: “Digital Design and Manufacturing – CAD/CAM Applications in Architecture and Design”; Schodek, D.; page: 297-312

Workshop 7. – 8. Assembly.

Applying the knowledge of “joint design” from the previous workshop the student will work with the design of a complete object. Focus will be on the creation of several iterations of the same design so as to force the student to explore and optimize the design within aspects such as structural integrity, assembly logics, formal expression, functionality, etc.

Lecturer: Mads Brath

Date:

Set readings: “Digital Design and Manufacturing – CAD/CAM Applications in Architecture and Design”; Schodek, D.; page: 297-312.

Examination

The module is completed with:

Examination 5

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.

Module 6: Physical Interface Design II/Fysisk Interface design II (5 ECTS)

Activity code: HSA220020D

Location

2nd semester

Study board: Art and Technology

Module coordinator

Markus Löchtefeld MT

Type and language

Module type: Module

Language of instruction: English

Objectives

From the study regulations:

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

The topics taught in this module will be used in 3rd semester Programming II and 4th semester Interactive technologies.

Academic content and basis

This module introduces programming and the fundamental concepts in this regard. Furthermore these concepts will be applied on a microcontroller with sensors and actuators, enabling the student to create physical interfaces and interactive artefacts

Scope and expectations

Participants

2nd semester Art and Technology students

Prerequisites for participation

Students have passed Physical Interface Design I or similar

Programming I – (PROI).

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

Literature:

Processing Tutorials: https://processing.org/tutorials/

Reas, Casey, and Ben Fry. Processing: a programming handbook for visual designers and artists. Vol. 6812. Mit Press, 2007.

Noble, Joshua. Programming Interactivity: A Designer's Guide to Processing, Arduino, and Openframeworks. " O'Reilly Media, Inc.", 2009.

Lecture 1. Hello World.

Topics include Processing Basics, source code and compilation, program structure (the main function), basic input and output to the console, comments, and "Hello World!".

Lecturer Markus Löchtefeld

Date of the activity: TBA

Set and recommended readings:

http://hello.processing.org/editor/

Lecture 2. Types and Operators.

Topics include boolean, floating-point, integer, and string types, variable declaration, statements, scope, and mathematical operators.

Lecturer Markus Löchtefeld

Date of the activity: TBA

Set and recommended readings

https://processing.org/reference/

Lecture 3. Control Flow.

Topics include general program flow, if/else if/else and switch conditionals and iteration with for/do/while loops.

Lecturer Markus Löchtefeld

Date of the activity: TBA

Set and recommended readings:

https://processing.org/reference/

Lecture 4. Functions.

Topics include "what is a (mathematical) function?", syntax for declaring, defining and calling functions, pass-by-value versus pass-reference, and recursion.

Lecturer Markus Löchtefeld

Date of the activity: TBA

Set and recommended readings:

https://processing.org/examples/functions.html

Sensors and Actuators II – (SAII).

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.

Literature: Michael Margolis, 2011, Arduino Cookbook, 2nd Edition, O'Reilly Media (ISBN 978-1-449-31387-6)

There is a lot of additional online literature on working with arduinos available. Recommendable sources include:

http://arduino.cc/en/Reference/HomePage and 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.

http://arduino.cc/playground/uploads/Main/arduino_comic_v0004.pdf - A illustrated conceptual and short practical introduction

http://www.ladyada.net/learn/arduino/ - A thorough and very practical introduction complete with schematics, code examples, explanations and exercises

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.

Lecture 1. Introducing the Arduino.

This lecture introduces the notion of microcontrollers. Survey of the Arduino platform, covering the possibilities it offers as well as the limitations it has. We will cover how to program an Arduino, the differences from Processing and good code practices.

Lecturer Martin Kibsgaard

Date of the activity: TBA

Set and recommended readings: Arduino Cookbook

Lecture 2. Sensing using digital and analog inputs.

This lecture covers basic digital and analog (DAC) inputs and how to use sensors with a microcontroller as a first step to creating reactive and interactive systems.

Lecturer Martin Kibsgaard

Date of the activity: TBA

Set and recommended readings: Arduino Cookbook

Lecture 3. Actuating using digital and PWM output.

This lecture covers using the digital output and analog output (PWM/ADC) of the Arduino. It will cover how to control different actuators, such as lights, motors, sound, etc. with a microcontroller.

Lecturer Martin Kibsgaard

Date of the activity: TBA

Set and recommended readings: Arduino Cookbook

Lecture 4. Communicating with Processing.

This lecture covers how you can connect your Arduino to Processing and make communication between the two possible. This is

Lecturer Martin Kibsgaard

Date of the activity: TBA

Set and recommended readings: Arduino Cookbook

Examination

Form of examination:

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. 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% 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 13: Art in Context II - Media Art Theory/Kunst I kontekst II (5 ECTS)

Activity code: HSA440024D

Location

2nd and 4th semester

Module coordinator

Elizabeth Ann Jochum, KOM

Type and language

Method of working: Individual work in relation to course activities

Language of instruction: English

Objectives

This course serves as a general introduction to art and technology as a theoretical field of study. As such it continues the trajectory of Art in Context 1, however this semester with a focus on media art before and after the 'digital revolution'. Whereas the theories and humanistic themes of perception, hermeneutics, phenomenology, systems, imagination, and beauty introduced in AiC 1 are still very relevant for the study of

art they tend to be challenged and criticized when technology, science and media enters the scene. From this, different theoretical and artistic practices emerge that not only circulate ideas about technology, science and media into critical thinking but also take up new paths of investigations and methods.

The course is structured around eight interconnected lectures focused on giving the students an introduction to different seminal theories, practices and ideas accompanying the still more intensive relationship between art, technology, media and science in the 20th and 21st Century – in short, here, termed Media Art.

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 and conjunction with other modules/semesters

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

The module will consist of lectures, workshops and seminars.

Scope and expected performance

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

Participants

ArT2 and ArT4.

Prerequisites for participation

Courses:

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

- Media Art Theory & Analysis

Required Texts:

The New Media Reader (2003) Ed. Noah Wardrip-Fruin, Nick Montfort MIT Press

Other readings from Between the Humanities and the Digital (2015) Ed. Patrik Svensson and David Theo Goldberg. MIT Press

Recommended:

Remediation by Jay Bolter and Richard Grusin (1999) MIT Press (pdf)

*Entangled by Chris Salter (2010) MIT Press

* available at FACTUM bookstore on Strandvejen

Lesson 1. Foundations of Media Art Theory.

Lecturer: Elizabeth Jochum

March 29 10:15-12

Content::

What is media art theory? This course will give the student and overview of the most important theories within the expanding field of media art. In this introductory lecture some basic concepts and theoretical problems in the media art field that also resonate in Walter Benjamin's seminal text about art in the age of technological reproduction: Authenticity, the subject of technology, and mediated (social) experience. And within this overall new direction of the modern culture, the lecture will also be looking at what aesthetic paradigms are at play in media art.

Assignments: In-course assignments

Required Readings:

"The Work of Art in age of Mechanical Reproduction" (Walter Benjamin) (pdf)

"The Work of Art in the Age of Digital Reproduction (Douglas Davis) (pdf)

Lesson 2. The Global Village: electronic interdependence, communication technologies, and social organisation.

Lecturer: Elizabeth Jochum

March 29th 13:15-15

Content:Marshall McLuhan described the shift from book-culture to electronic media, and his theories are the foundations of media art theory that seek to describe the transition from analog to digital media, and the impact of this transition on the art world, culture, and society at large. In particular, McLuhan articulates how digital media have transformed relationships and social organisations in culture and society. Building on the students' prior familiarity with McLuhan (the movement from age of typography to the age of television), we look at the personal sand social consequences of new media and technological tools, investigating McLuhan's assertion that "the clearest way to see through a culture is to attend to its tools for conversation."

Assignments: In-course assignments

Required Readings:

The Medium is the Message (excerpt) (pdf)

The Global Village: Transformations in World Life and Media in the 21st Century (1989)

Lesson 3. Contemporary Media Theory.

Lecturer: Elizabeth Jochum

March 30 10:15-12

Content:New media technologies are central to contemporary social life, and emergent technologies and media are being developed for a generation that has grown up with the Internet and accelerated development of electronic technologies. Just as television was a mobilizing force,

Assignments: In-course assignments

Required Readings:

Constituents of a Theory of the Media (Hans Magnus Ensensberger) (pdf)

The Technology and the Society (Raymond Williams) (pdf)

Lesson 4: Mapping Media Theory and Discourse: From Television to Web 2,0 and the Internet of Things.

March 30 13:15-15

Lecturer: Elizabeth Jochum

Content:An introduction to the concept, practice, theory, condition and (short) genealogy of New Media Art with a focus on Lev Manovich's The Language of New Media (1999) and the Internet of Things. We focus on issues of data, connectivity, and user generated content in media art theory.

Assignments: Mapping Media Theory and Discourse**,** Student presentations

Required Reading:

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

Sue Halpern (2014) "The Creepy New Wave of the Internet" (New York Review of Books)

http://www.nybooks.com/articles/2014/11/20/creepy-new-wave-internet/

Lesson 5. Responsive and Interactive Environments.

Lecturer: Elizabeth Jochum

April 1 10:15-12

Content: The concept of interaction in media art has developed beyond a purely technological paradigm. What are the principles of interaction and interactive art? How do these principles manifest in public art and public spaces? This lesson looks at the history of interactive art with a focus on first and second generations responsive environments, systems aesthetics, and performative interfaces and spaces created by media artists. Generated by the concept and devices, inter

Assignments: In class presentations

Required Readings:

Responsive Environments by Myron W. Kruger (pdf)

Entangled by Chris Salter Ch. 8 "Interaction" (pdf)

Lesson 6: Sound, Interaction and Culture.

Lecturer: Elizabeth Jochum

April 1 13:15-15h

Content: This lecture introduces the principles of sound art, sonic environments and electroacoustic composition. The emphasis is on elucidating the underlying themes and theories of the new sound art, and how these art works interface with topics of interaction, culture, and media art theory.

Assignments: In class presentations

Required Reading:

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

Harris, Yolande (2015) “Scorescapes: On sound, environment and Sonic Consciousness” (Leonardo) (pdf)

Suggested Reading:

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

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

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

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

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

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

(Special Issue on Sound Art).
http://salomevoegelin.net/public_html/salomevoegelin.net/sonic_possible_world.html

Lesson 7. Interactive Media, Culture and Society.

Lecturer: Elizabeth Jochum

April 4 10:15-12

Content: Interactive technologies used in art contexts and public environments raise critical questions about what constitutes meaningful aesthetic experiences. Locative media transform notions of space, place and performance, asking us to rethink the relationships between art objects, society, culture, and makers. This lesson looks at contemporary examples of art works and development on media art theory in light it locative media and computer-based interactive art in public spaces.

Assignments: In-class student presentations

Required Readings:

“Meaningful Engagement: Computer-Based Interactive Media Art in Public Space by Jiun-Jhy Her and Jim Hamlyn (pdf)

“Locating the Mobile and the Social” A preliminary discussion of Camera Phones and locative media by Larissa Hjorth (pdf)

Recommended reading:

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

Ambient interaction and situational influence: case studies in public sites

Her, Jiun-Jhy ; Hamlyn, Jim. Digital Creativity, 16 June 2015, p.1-18 (pdf)

Lesson 8. Media Art in Context: Imran Qureshi.

Lecturer: Elizabeth Jochum

April 4 13:15-15

Assignments: In-class student presentations

Content: Imran Qureshi is a Pakistani artist from Lahore, Pakistan who works across a variety of media. He has participated in many exhibitions worldwide and in 2013 he named the Deutsche Bank’s ”Artist of the Year.” Renowned for his rooftop installation of 2013 at the Metropolitan Museum of Art in New York, Qureshi

also participated in the Nuit Blanche in Paris in 2014 with an installation at the Bibliothèque Sainte-Geneviève and on the Quai d'Austerlitz. He participated in the 2013 Venice Biennale in the main show, The Encyclopedic Palace, and his work was shown at the 56th Venice Biennale in The Great Game held in the Iranian Pavilion. In 2016 he has an exhibition at the Barbican in London and will have a show for the reopening of the new exhibition space at Kunsten in Aalborg. Qureshi is represented in the permanent collections of The Metropolitan Museum of Art, New York and the Victoria & Albert Museum, London. Qureshi's approach combines the motifs, symbolism, and ornamental techniques of Mughal miniature painting with contemporary conceptual approaches. He works in a variety of mediums, including printed monographs, paintings, works on paper, and video.

Required Readings:

Imran Qureshi: Idea of Landscape

http://images.dawn.com/news/1174072

Interview with Imran Qureashi (Apollo)

http://www.apollo-magazine.com/imran-qureshi-november-apollo/

Required Viewing:

https://www.youtube.com/watch?v=8aoEfZruLO0

https://www.youtube.com/watch?v=PT1j0fURp8o

http://www.ok-rm.co.uk/project/side-by-side

REQUIRED FIELD TRIP: Wednesday April 6 from 15h-16:30

Public talk with curator of "Traces of Blood" Dr. Virginia Whiles and attendance at exhibition at Kunsten

IN-CLASS ASSIGNMENTS:

Groups of 4 students (max)

Students groups will present an artwork, chosen from a list or database presented in class, in the context of one of the essays/course readings. All works will be chosen at the end of the Lesson 2, to ensure that no artist or work is covered twice. Students may choose to work in groups across-semesters.

The focus of these presentations should NOT be the artwork, but rather the course LITERATURE/READINGS and the principles of media art theory. The art work should only serve as an EXAMPLE that illustrates the issues, themes, and concepts articulated in the theory or essay. Presentation may include some biographical material on the author, but this should not be the emphasis of the presentation.

Presentation: 3 slides (max) (video/sound clips limited to 1 minute), 10 minutes total for presentation. Each group must deliver a 1-page hand-out for the class. I will demonstrate what a hand-out and presentation should look like on Lesson 1.

Examination

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

Examination 13

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

Form of examination: c)

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

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

Credits: 5 ECTS

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

TOPIC:

2nd SEMESTER

Explore the media art database at http://www.rhizome.org/ and the artists at http://www.furtherfield.org/ and choose one work of new media art for analysis in the context of the course readings and discussion.

How has the artist used interactivity and the user interface to enhance the viewer's experience? What is this art work about about? What is the subject? How does this art work address/activate the viewer? How does it represent/transform the experience of place, space and/or time? What ideas and concepts from the history of new media art seem to engage this artist? Support your argument with specific reference to the ideas and concepts from course readings and in-class discussions.

http://rhizome.org/art/artbase/

4th SEMESTER

Select a public, interactive artwork that utilises locative media, sensing, or other forms of smart technologies and computing.

http://www.trendingcity.org

http://www.trendingcity.org/north-america/2013/3/11/interactive-installations-and-public-spaces

Students may also select from other examples/databases of interactive public art.

How has the artist used interactivity and the user interface to enhance the viewer's experience? What is this art work about about? What is the subject? How does this art work address/activate the viewer? How does it represent/transform the experience of place, space and/or time? What ideas and concepts from the history of new media art seem to engage this artist? Support your argument with specific reference to the ideas and concepts from course readings and in-class discussions.

Hand-In Format: 10 pages (max, excluding bibliography), 12 point font, 2cm margins. Harvard citation references/work cited. All figures must be labelled.

Requirements: MUST include at least three (3) sources from the course reading, plus one original primary source (not in the course literature). Online sources are acceptable, but they must be from a reputable academic source (no blogs or encyclopedia/wikipedia entries).