Study Guide

Photos: Line Marie Bruun Jespersen. Roskilde Festival 2010

Art & Technology

Spring Semester 2013

0.	**Welcome**

Welcome to your 2nd semester!

This study guide is for the 2nd semester of the bachelor program of Art and Technology.

It is important that you read the study guide before semester. The study guide is a supplement to the study plan, and it elaborates on the content, goals and purposes of the modules and courses in this semester, listed in the study plan. The study guide is meant to be a tool for both students, supervisors and lecturers during the semester.

The theme of 2nd semester at ArT is “Performative Space and Technology”.

We are going to work with spatial structures in public space, and the courses in the semester are supporting your work, both in relation to artistic development of the physical structures, application of technology to your work, and to give you tools to understand and analyse the intricate relationship between art and site in general and art in public, urban space in particular.

I have been looking forward to work with you in this semester!

Line Marie Bruun Jespersen, semester coordinator

1.	*Teachers and secretary*

	Name	E-mail
Coordinator	Line Marie Bruun Jespersen	lmbj@create.aau.dk 99407171
Secretary	Anne Nielsen	amn@hum.aau.dk 9940 9919
Module 5 – Performative Space and Technology	Line Marie Bruun Jespersen	lmbj@create.aau.dk 99407171
	Jakob Borrits Sabra	jbsa@create.aau.dk
	NN	
Courses		
Perception in Theory and Practice II	Betty Li Meldgaard	betty@hum.aau.dk
Artistic and Academic Methodology II	Line Marie Bruun Jespersen	lmbj@create.aau.dk 99407171
	Gitte Marling	marling@create.aau.dk
	Bente Jensen	bej-kultur@aalborg.dk
	Thilo Frank	thilo@thilofrank.net
	Guest B	
Digital Representation I	Hans Bruun Olsen	hbol@create.aau.dk
Basic Electronics	Lars Knudsen	knudsen@create.aau.dk
	Rasmus Krarup Madsen	rkm@create.aau.dk
Module 6 – Physical Interface design II	Lars Knudsen	knudsen@create.aau.dk
Courses		
Programming I	Lance Putnam	lp@create.aau.dk
Sensors and Actuators II	Lars Knudsen	knudsen@create.aau.dk
Module 7 – History of Art and Tecnology 2	Line Marie Bruun Jespersen	lmbj@create.aau.dk 99407171
Courses		
History of Art and Technology 2	Line Marie Bruun Jespersen	lmbj@create.aau.dk 99407171
	Lise Skytte Jacobsen	
	Jakob Sevel	

2.	**Module 5 Performative Space and Technology (13 ECTS)**
Project period (from/to)	
Work form:	Group and project work
Date for submission and critique:	04.06.2013
Secretary:	Anne Nielsen
Responsible Coordinator:	Line Marie Bruun Jespersen
Supervisors:	Line Marie Bruun Jespersen, Jakob Borrits Sabra, NN

Curriculum:

In the main module of the second semester, 5: Performative Space and Technology, project work concentrates on space, basic spatial conditions and the creation of places. Teaching is organised in a number of workshops and related courses supporting project work. In order to support the students in their work in a broader sense, one module is offered teaching basic programming skills 6: Physical Interface Design II; and another module, 7: History of Art and Technology I, focusing on art analysis and art history. (p. 8)

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 spaces, physical spatial structures and experienced environments.

Students work theoretically and experimentally with realizations of spatial installations including the transformation of space into interactive or otherwise performative architectural environments.

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

Objectives:

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
- communicating technical issues to peers and non-peers

competencies in
- describing and analysing 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

The module is completed with:

An internal combined written and oral examination in **Module 5: “Performative Spaces and Technology”.**
The examination will take the form of a conversation between the student, the examiner and an external examiner on the basis of the project report and/or portfolio prepared by the student(s) as well as the product created by the student.
Form of examination: b)

Group examination (according to the new examination regulation of The Faculty of Humanties)

An oral examination, which takes its starting point in the written project, whether this was written individually or together with others. The project report/written project will be considered the joint responsibility of the group. Thus, the project report will be the basis for examination and assessment, and there will be a joint assessment of the project report and the oral performance. At oral group examinations, the individual student must be examined in a way that ensures that an individual assessment can be made, cf. the Examination Order, section 4, subsection 2.

Examination will take the form of a conversation between the student(s), examiner and internal/external examiner based on the project report prepared by the student(s).

Duration of examination is 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.

Number of pages: the written work must not exceed 10 pages per student (15 pages in the case of individual reports).
Evaluation: Grading according to the 7-point scale.
Proportional weighting: An overall equal evaluation is made of the project report, the product, and

the oral performance.
Credits: 20 ECTS

The written report, the product and the oral examination should demonstrate that the student has fulfilled the objectives outlined above.
In the evaluation of the examination performance, the grade 12 will only be awarded to students who demonstrate that they have fulfilled the objectives for the subject exhaustively or with only few insignificant omissions.

Submission Requirements:

The module is concluded with the submission of a group project consisting of an installation and a written report.

The installation must be presented in models, visualisations (drawings, renderings), and prototypes. Prototypes can be a “mock-up” of the installation, a part of the installation and/or of significant details.

The installation and the report must demonstrate that the students have fulfilled the objectives regarding 2nd semester, outlined in the study plan and the study guide for ArT

Submission of 2 printed and 3 digital version of the group project. The size of the report mounts to max 10 pages per student. A page is 2400 keystrokes.

The digital version of the report should be provided on a DC/DVD attached to the printed version of the report.

Written report structure:

The report must contain 2 main parts:

A: Semester Project Report

The semester project report documents the group project made in Module 5 “Performative Space and Technology”. Illustrations and pictures must support the written documentation.

Part A of the report must contain:

Front page: Project title, names of group members, student numbers, Semester, Supervisor(s) name(s)

List of content

Introduction

Problem formulation/vision

Concept and Theory

Key elements:

1. Analysis of reference works of art i.e. other urban installations
2. A refection of the installation´s potential in relation to the ecological perceptual system
3. More elements can be added by the group

Tests, Methodology and Results

Key elements:

1. Analysis of site/context in text, mappings and other types of illustrations.
2. More elements can be added by the group

Design and Implementation

Key elements:

1. Presentation of final design, design process.
2. Drawings showing plan, section, façade/the installation from multiple viewpoints.
3. Visualisation of the final installation in its context; one or more renderings of the installation in situ.
4. Documentation of the technical content of the installation in text and diagrams.
5. Documentation of programming.
6. More elements can be added by the group

Discussion/Reflection

Conclusion and perspective

Bibliography

Appendix

Summary

The content of the report will be elaborated further in correspondence with assigned supervisor throughout the semester.

B: Course documentation

Document, discuss and reflect on your work in the courses: Artistic and Academic Methodology 2, Perception in Theory and Practice 2, Digital Representation 1 and Basic Electronics 2. Illustrations, pictures, diagrams etc. must support the written documentation. The size of this part mounts to 3-5 written normal pages pr. Group. There is no maximum number of illustrated pages.

For the exhibition and the exam the project group must bring:

Presentation model of the urban installation

Context model incl. installation

Presentation poster, A0. The poster must include all names of group members, semester, year, project title, synopsis, illustrations (ArT will keep the posters for future exhibitions)

Exhibition date: 21.-22.5.2013

Deadline:

Project hand in is 04.06.2013

At ArT secretary Anne Nielsen.

Exam dates: 17.-18.-19.06.2013

Installations for Roskilde Festival

In the semester project “Performative Space and Technology” students will be working with installations for Roskilde Festival. The project theme is defined in collaboration with the curators of the “More than Music” program at the festival, the festival architect and Obel guest professor Thilo Frank. The project consists of several aspects, which have to be taken into consideration for an integrated art project, such as sculptural/architectural form, construction, interactive/performative features, the very special context; a specific site at the festival and perception of space. Students must be able to present such an integrated project in 2D and 3D visualizations, models and elaborate prototypes for the exam.

Roskilde Festival as a context for art is rather extreme: a lot of people will be seeing and experiencing the work at all hours. The audience is extremely open minded, playful and adventurous, so heavy use of the art works will take place. The installations have to work aesthetically both day and night -and they have to work in bad weather too.

This is your chance to contribute to the largest instant city in northern Europe, and make your mark on the quality of the festival city!

The concept for the installation will be developed during the courses and workshops. There will be room for individual work by the project groups in parts of the semester, which will play a role in your exam, and we will use some of the workshops and exercises in the courses as an outset for developing one final installation for Roskilde Festival, which we will get to realize in collaboration with the festival and guest professor, artist Thilo Frank. The final installation will be the result of the combined effort of the whole ArT2 semester.

Main phases in the semester:

1. Analysis of site and context. Students will be introduced to different strategies for analysing a site, using the data material and analysis in design suggestions for a specific spatial/urban context. Understanding the interplay between festival context/instant urbanism and festival life as a context for art.
   Students will work with models, drawings and diagrams of the site and develop suggestions for how to place installations at the site.
2. Concept for the installation. Taking departure in an overall concept for the installation. Each project group will develop a sub-project to be part of the Roskilde Festival installation. Students will work with models, drawings and prototypes.

Method and Learning goals:

Context and site:

Each project must take departure in a thorough analysis of the site of the specific project. The context is not only the physical site/space, but also the historic, the cultural or societal context. Relevant questions are: what is this site? what it the meaning of the site? and what does the site tell us? Lectures on public art, site-specificity, mapping in AAM II, and lectures covering the perception of space in Perception II will deal with these topics.

Form and Aesthetics: Any installation is the result of a strong idea of what kind of experience the installation should give to the viewer. In order for an installation to express such an idea, 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 physical form of the installation and research for possible solutions will be trained in AAM II. The students' ability to communicate their ideas in the form of different types of visualisations (both 2D and 3D) will be trained in the course DR I.

Technological aspects of the performative installation will take departure in the module PID II and the course BE II, where programming, sensors and actuators and basic electronics relevant for out-door projects will be central topics in order to support the realisation of the semester project.

2.1	*Courses*

Perception in theory and Practice II	1 ECTS
Secretary:	Anne Nielsen
Responsible Coordinator:	Betty Li Meldgaard
Lecturers:	Betty Li Meldgaard
Purpose and goals:	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. The perception course supports the semester in relation to the individual and shared experience of the cityscape and will challenge student's perceptual awareness through the psychogeographical assignment.
Assessment:	Running evaluation and assessment during and at the end of the course, through the lecture/assignments and at the exam of the project unit 'Space and Technology'.

Title 1:	Space and perception 1

Lecturer:	Betty Li Meldgaard
Content:	The first lecture introduces various concepts of space and scientific theories relating to space
Assignments:	None
Literature:	Siegfried Gideon “Space-time in Architecture” - excerpts James J. Gibson” Ecological approach to visual perception” – excerpts. Guy Debord – “Situationist” Texts will be uploaded to Moodle 2 weeks before lecture as PDF’s.

Title 2:	Space and perception 2
Lecturer:	Betty Li Meldgaard
Content:	Continuation of Space and Perception 1 + Introduction to Psychogeography
Assignments:	Psychogeographical assignment. An experiential tour through Aalborg, where students document the route they are given by creating Psychogeographical maps.
Literature:	None

Title 3:	Psychogeographical assignment – results and presentation
Lecturer:	Betty Li Meldgaard
Content:	The groups present their maps in plenum and receive feedback.
Assignments:	Assignment results presentation
Literature:	http://makingmaps.net/2009/06/22/making-psychogeography-maps/

Title 4:	3D on 2D
Lecturer:	Betty Li Meldgaard
Content:	Practical approach to concepts of space and various techniques for construction and depiction of spatial relations based on different theoretical approaches.

Assignments:	None
Literature:	None

2.2	*Courses*

Artistic and Academic Methodology II (Installation, Architectural Spaces and Urban Design)		3 ECTS
Secretary:	Anne Nielsen	
Responsible Coordinator:	Line Marie Bruun Jespersen	
Lecturers:	Line Marie Bruun Jespersen	
Purpose and goals:	The Purpose of Artistic and Academic Methodology II is to give the students a number of tools for understanding and working with Performative Space and Technology. The course has three main themes: 1. Art in public space 2. Tools for analysing, mapping, representing and approaching a physical site 3. Experiments in form as the outset for development of spatial installations The three main themes are three types of academic and artistic methods and each of them aims at understanding art in public space (1), art in a specific site and physical context (2) and to create spatial works (3). In section 1, the course is based on a traditional lecture format, with small exercises in the form of discussions, exercises in art analysis and the like. In section 2, the course has a stronger emphasis on shorter lectures and larger assignments, taking departure in the content of the lectures. In section 3, the course develops into a workshop format, where short lectures/introductions initiate a series of practical assignments.	
Assessment:		

Title 1:	Project Start Seminar
Lecturer:	Thilo Frank (+ intro by Line Marie Bruun Jespersen)

Content:	Thilo Frank will give an artist talk on art his work with art in public space
Assignments:	Discussions and brainstorming-sessions will be part of the seminar
Literature:	Required reading: Supplement reading:

Title 2:	Project Start Seminar
Lecturer:	
Content:	Invited guests will give talks on art in public space
Assignments:	Discussions and brainstorming-sessions will be part of the seminar
Literature:	Required reading: Supplement reading:

Title 3:	Public Art/Urban Installations
Lecturer:	Line Marie Bruun Jespersen
Content:	The first part of this lecture gives a short introduction to the history of public art, and the traditional types of art in public space: the monument and the memorial. The second part of this lecture focuses on the relationship between art and site. Different definitions of “site-specific” art will be introduced. We will look at public space/the urban landscape as context for modern and contemporary art and we will investigate questions such as: why art in public space? Which types of art finds its way into public space – and why? What are the pitfalls of art in public space – and what are the iconic works within the field today?
Assignments:	Exercises in analysis of art+site in groups
Literature:	Required reading: Claire Doherty (ed.): **Situation. Documents of Contemporary Art**. MIT Press 2009. Pp:12-60 Malcolm Miles: **Art, Space and the City. Public Art and Urban Futures**. Routledge 1997 pp 19-38, 58-103 Miwon Kwon: **One Place after Another. Site-specificity and locational identity**. MIT Press 2004 pp. 11-33, 56-100

	Supplement reading: Rosalyn Krauss: Sculpture in the Expanded Field. Cher Krause Knight: Public Art. Theory, Practice and Populism. Blackwell Publishing. 2008 Nick Kaye: Site-Specific Art. Performances, place and documentation. Routledge.2000 Lucy R. Lippaard: The Lure of the Local. Senses of Place in a Multicentered Society. Yhe New Press. 1997

Title 4:	*Public Art and Urban Transformation*
Lecturer:	Line Marie Bruun Jespersen
Content:	This lecture will focus on art as agent for urban transformation processes, place making and creation of identity. In recent years “temporary architecture” or “instant architecture” have been wide spread phenomena in order to generate identity, user involvement and ideas in strategic city development processes. Much of the temporary architecture is inspired by or share similarities with street art, sub culture movements and activism, so we will investigate the relation between art, architecture and activism. We will discuss the role of art in urban transformation processes as a strategic planning tool and we will look at the phenomenon from a critical viewpoint. The positive potential of art in relation to urban transformation will, of course, also be included in the lecture.
Assignments:	Investigation of examples of urban transformation by Raumlaborberlin
Literature:	Required reading: Malcolm Miles: **Art, Space and the City. Public Art and Urban Futures**. Routledge 1997 pp104-131 Raumlaborberlin: **Acting in Public**. Jovis 2008 pp 3-5, 10-35 Supplement reading: Marc Auge: Non-Places: Introduction to an Anthropology of Supermodernity. Verso. 1995 Edward W. Soja: Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places. 1996

Title 5:	Who has the right to the site?

Lecturer:	Line Marie Bruun Jespersen
Content:	When talking about “public space” and “public art”, we seem to think that the public is for all of us, and that everyone has equal access to public space. This lecture is about how power structures in society become very visible in debates about art in public space, when art provokes the public and raises questions such as: Who has the right to the city? Who are the art audience? Who have the right to decide over art in public space?
Assignments:	Group discussion on example material
Literature:	Required reading: Rosalind Deutsche: **Evictions. Art and Spatial Politics**. MIT Press. 1998 Dorte Skot Hansen: **The City as a Stage – but for who?** Anne Ring Petersen: **The work of art in the age of commercial funscapes** in: Marling and Zerlang (eds.): Fun City. Arkitektens Forlag 2007 pp. 235-258 Tania Carson: **Cultural Ambiguity in an Urban Development Master Plan. Deception or Miscalculation**? Pp 13-27 In: Malcolm Miles and Tim Hall (eds.): Interventions. Advances in Art and Urban Futures vol. 4. Intellect Books. 2005 Claire Doherty (ed.): **Situation. Documents of Contemporary Art**. MIT Press 2009 pp108-146 Supplement reading: Steffen Lehmann (ed.): Back to the city. Strategies for Informal Urban Interventions. Hatje Cantz Thompson and Scholette (eds.): The Inteventionists. Users´Manual for the Creative Disruption of Everyday Life. Mass MoCa Publications/MIT Press 2004 Jane Rendell: Art and Architecture. A Place Between. I.B.Tauris. 2008 Making Public, Seminar 2, part 1, 2, 3 Talks by Jane Rendell and Rosalyn Deutsche at Tate Modern: http://www.tate.org.uk/context-comment/video/making-public-seminar-2-rosalyn-deutsche-jane-rendell-gillian-rose-part-1 http://www.tate.org.uk/context-comment/video/making-public-seminar-2-rosalyn-deutsche-jane-rendell-gillian-rose-part-2 http://www.tate.org.uk/context-comment/video/making-public-seminar-2-rosalyn-deutsche-jane-rendell-gillian-rose-part-3

Title 6:	Mapping Space and Roskilde Festival as Instant City
Lecturer:	Gitte Marling
Content:	This lecture will present different types of mapping a site, as an artistic approach to understand, work with and represent a specific physical site, its spatial configuration and materiality. The lecture will take departure in Gitte Marling and Hans Kiibs research at Roskilde Featival; their approaches to analyzing Roskilde Festival as a city, the city planning, urban spaces and urban life.
Assignments:	Students will do practical exercises based on the cintent presented in the lecture
Literature:	Required reading: Gitte Marling &Hans Kiib: Instant City@Roskilde Festival. Aalborg Universitetsforlag 2011 Supplement reading: Erwing Goffman: Behavior in Public Spaces. Notes on the social Organization of Gatherings. The Free Press. 1963 Gitte Marling: Urban Songlines. Aalborg University Press. Kevin Lynch: The Image of the City Gordon Cullen: The Concise Townscape

Title 7:	Mapping Time
Lecturer:	Bente Jensen, Aalborg Stadsarkiv. Arkivstræde1. 9000 Aalborg
Content:	History – time – memory. The archive as a resource for ArT. Visit and lecture at Aalborg Stadsarkiv (Aalborg City Archive). Lecture by Bente Jensen about the possibilities to use the archive in your research, in your works. Group 1-4 will visit the archive from 13-14, Group 5-8 from 14-15
Assignments:	
Literature:	

Title 8:	Mapping Social Aspects and Maps in art
Lecturer:	Line Marie Bruun Jespersen
Content:	Cultural Mapping, cultural geography, urban sociology. Observation, Urban Songlines
Assignments:	Students make a practical exercises in the methods presented.
Literature:	Required reading: Katharine Harmon: The Map as Art. Contemporary artists explore cartography. Princeton Architectural Press. 2009Gitte Marling: Urban Songlines. Aalborg University Press.

Title 9:	Workshop
Lecturer:	Thilo Frank
Content:	During this workshop students will work with “table-top” models of possible solutions for the Roskilde Festival assignment. Thilo Frank will develop the framework for the workshop, which will include discussions, short talks taking departure in Thilo Franks own work, practical experiments and supervision. We will use the results of the workshop as input for the Roskilde Installations – and we will use the workshop as an outset for group formation.
Assignments:	TBA
Literature:	

Title 10:	Workshop
Lecturer:	Thilo Frank
Content:	During this workshop students will work with “table-top” models of possible solutions for the Roskilde Festival assignment. Thilo Frank will develop the framework for the workshop, which will include discussions, short talks taking departure in Thilo Franks own work, practical experiments and supervision. We will use the results of the workshop as input for the Roskilde Installations – and we will use the workshop as an outset for group formation.

Assignments:	TBA
Literature:	

Title 11:	Workshop
Lecturer:	Thilo Frank
Content:	During this workshop students will work with “table-top” models of possible solutions for the Roskilde Festival assignment. Thilo Frank will develop the framework for the workshop, which will include discussions, short talks taking departure in Thilo Franks own work, practical experiments and supervision. We will use the results of the workshop as input for the Roskilde Installations – and we will use the workshop as an outset for group formation.
Assignments:	TBA
Literature:	

Title 12:	Workshop: sculptural and architectural form 4
Lecturer:	Thilo Frank
Content:	During this workshop students will work with “table-top” models of possible solutions for the Roskilde Festival assignment. Thilo Frank will develop the framework for the workshop, which will include discussions, short talks taking departure in Thilo Franks own work, practical experiments and supervision. We will use the results of the workshop as input for the Roskilde Installations – and we will use the workshop as an outset for group formation. After this two-day workshop, students will keep up their work on the assignments – and Thilo will return later in the semester for more supervision/a pin-up
Assignments:	TBA
Literature:	

2.3	*Courses*

Digital Representation I – 2D and 3D contruction methods		2 ECTS
Secretary:	Anne Nielsen	
Responsible Coordinator:	Hans Bruun	
Lecturers:	Hans Bruun	
Purpose and goals:	The course will develop the student's skills in visual representation of ideas and form by creating two-dimensional digital drawings (in scale) and three-dimensional digital renderings of their projects placed in a context. Through the course students will be trained in computer software and shown qualified examples of drawings in scale and visualizations of architectural and art projects. Software used: 3D Studio MAX, Rhinoceros, Adobe Photoshop and Adobe Illustrator.	
Assessment:		

Title 1:	Presentation Drawing Tour de Force
Lecturer:	Hans Bruun
Content:	Introduction and discussion of traditional representation techniques e.g. diagram, plan, section, elevation, exploded isometric drawing, collage, montage, perspective. Through various examples of visual representation, the lecture will highlight the great richness of possibilities. It will put focus on the advantages and disadvantages of different various types of representation technique.
Assignments:	Analysis and discussion of selected works during the lecture.
Literature:	

Title 2:	Digital Modeling I
Lecturer:	Hans Bruun

Content:	The course will introduce the digital modeling program Rhinoceros and teach basic modeling.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.
Literature:	

Title 3:	Digital Modeling II
Lecturer:	Hans Bruun
Content:	The course will go into more complex modeling in Rhinoceros.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.
Literature:	

Title 4:	Placing a Digital Object in a Photograph I
Lecturer:	Hans Bruun
Content:	The course will introduce need-to-know 3D Studio Max functionalities in order to import Rhinoceros models, apply materials, and place them in a photographed scene, including light control and weather parameters.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.
Literature:	

Title 5:	Placing a Digital Object in a Photograph II
Lecturer:	Hans Bruun
Content:	The course will teach how to use Adobe Photoshop to optimize, alter and perfect rendered 3D images e.g. light and colour adjustments, removing and adding objects, and other makeup.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.

Literature:	

Title 6:	Images for Final Presentation
Lecturer:	Hans Bruun
Content:	The course will teach how to use Adobe Photoshop to optimize, alter and perfect rendered 3D images e.g. light and colour adjustments, removing and adding objects, and other makeup.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.
Literature:	

Title 7:	Making Useful Sections and Plans
Lecturer:	Hans Bruun
Content:	The course will show how to refine plans and sections in Illustrator, which are derived from sections in Rhino 3D models. Furthermore, the lecture will address easy techniques to create isometric projection drawings.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.
Literature:	

Title 8:	Giving Life and Richness to Sections
Lecturer:	Hans Bruun
Content:	The course will provide skills and knowledge to refine rough section drawings in Photoshop so they contain daylight, shadow, texture, objects, measurements, text information etc.
Assignments:	Learning by doing. Students will bring their computer and repeat the functionalities shown in the lecture.
Literature:	

2.4	Courses

Basic electronics II	***1 ECTS***
Secretary:	Anne Nielsen
Responsible Coordinator:	Lars Knudsen Rasmus Krarup Madsen
Lecturers:	Lars Knudsen Rasmus Krarup Madsen
Purpose and goals:	The goal of this course is to advance the students expertise in working with electronics, in relation to interactive artworks. The course covers how to use Arduino to control many things, exceeding the amount of pins available and how to use actuators that exceed the capabilities of the Arduinos outputs. Lastly the course will introduce different techniques for protecting circuits against the elements. The course assumes the student has knowledge of basic electronics, but if the basics concepts cause problems, revisiting the curriculum of Basic Electronics I is recommended. If the student wants to study any specific topic further, then Practical Electronics for Inventors is recommended literature. Literature: Michael Margolis, 2011, Arduino Cookbook, O'Reilly Media (ISBN 978-0-596-80247-9)
Assessment:	See module description

Title 1:	Arduino circuits
Lecturer:	Lars Knudsen Rasmus Krarup Madsen
Content:	The course will begin with a survey of the students' knowledge of basic electronics so far. Further this lecture will address what the main considerations are in relation to circuits designed around Arduinos are, and different ways they can be implemented in projects.
Assignments:	To be arranged
Literature:	http://www.arduino.cc/en/Main/Standalone and http://arduino.cc/en/Tutorial/ArduinoToBreadboard

Title 2:	Controlling many things
Lecturer:	Lars Knudsen Rasmus Krarup Madsen
Content:	How multiplexing, registers and drivers can be used to control more outputs than available on an Arduino. This can be used to control a myriad of motors, LEDs or other outputs.
Assignments:	To be arranged

Literature:	Arduino cookbook 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*

Title 3:	Controlling powerful things
Lecturer:	Lars Knudsen Rasmus Krarup Madsen
Content:	This lecture will cover how relays, transistors, fets and optocouplers can be used in conjunction with Arduinos to enable control of powerful actuators, which can't be run directly from the Arduinos output pins.
Assignments:	To be arranged
Literature:	Arduino cookbook from 8.6 Controlling Solenoids and Relays to 8.8 *Driving a Brushed Motor Using a Transistor* and 10.4 *Controlling a Digital Camera*

Title 4:	Weatherproofing
Lecturer:	Lars Knudsen Rasmus Krarup Madsen
Content:	Problems and suggestions to solutions in relation to exposing hardware to the elements. The course will introduce a selection of methods and classifications of hardware.
Assignments:	To be arranged
Literature:	

4. Module 6, Physical Interface Design II

Work form:	Group and project work
Date for submission and critique:	
Secretary:	Anne Nielsen
Responsible Coordinator:	Lars Knudsen
Supervisors:	Lars Knudsen and Lance Putnam

Description of *Physical interface Design* for ArT2-2013

Purpose and Goals:
This module introduces programming and the fundamental concepts in this regard. Furthermore these concepts will be applied on a microcontroller to create physical interfaces and interactive artefacts. See studyplan for details on learning goals

Content:
The module will be taught as two courses, one focusing on programming concepts and the other on applying these on a microcontroller.

Examination and assessment:
Course can be passed by active participation. Otherwise, a 7-day written exam will be assigned see studyplan for details.

Programming I	**1 ECTS**
Secretary:	Anne Nielsen
Responsible Coordinator:	Lance Putnam
Lecturers	Lance Putnam
Purpose and goals	Programming I is the first in a series of programming courses meant to teach fundamental concepts of imperative and object-oriented programming using the C++ 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. In addition, you will learn basic Unix and usage of the command-line interface. Literature: Loudon, K. (2003). C++ Pocket Reference. O'Reilly Media, Inc., USA. cplusplus.com. (2000). C++ Language Tutorial, http://www.cplusplus.com/doc/tutorial/
Assessment	See module description

Title 1:	Unix, CLI, and Source Code
Lecturer/ supervisor:	Lance Putnam
Content:	Topics include paths, Unix commands, source code and compilation, program structure (the main function), basic input and output to the console, comments, and "Hello World!".
Assignments:	
Literature:	Required readings: Loudon, "Program Structure", pp.3-12. Loudon, "I/O Streams", pp. 122-124. "Structure of a program - C++ Documentation", http://www.cplusplus.com/doc/tutorial/program_structure/. "Basic Input/Output - C++ Documentation", http://www.cplusplus.com/doc/tutorial/basic_io/

Title 2:	Types and Operators
Lecturer/ supervisor:	Lance Putnam
Content:	Topics include boolean, floating-point, integer, and string types, variable declaration, statements, scope, and mathematical operators.
Assignments:	
Literature:	Required readings: Loudon, "Fundamental Types", pp.12-17. Loudon, "Operators", pp.34-37. Loudon, "Expressions", pp.46. Loudon, "Scope", pp.47-49 (skip "Class Scope"). Loudon, "Declaring Variables", pp.51-52 (skip "Pointer variables"). "Variables. Data Types. - C++ Documentation", http://www.cplusplus.com/doc/tutorial/variables/. "Constants - C++ Documentation", http://www.cplusplus.com/doc/tutorial/constants/. "Operators - C++ Documentation", http://www.cplusplus.com/doc/tutorial/operators/. "Boolean Operations - C++ Documentation", http://www.cplusplus.com/doc/boolean/.

Title 3:	Functions
Lecturer/ supervisor:	Lance Putnam
Content:	Topics include "what is a (mathematical) function?", syntax for declaring, defining and calling functions, pass-by-value versus pass-reference, and recursion.
Assignments:	
Literature:	Required readings: Loudon, "Declaring Functions", pp.52-54. "Functions (I) - C++ Documentation", http://www.cplusplus.com/doc/tutorial/functions/. "Functions (II) - C++ Documentation", http://www.cplusplus.com/doc/tutorial/functions2/ (skip 'inline functions'). Suggested reading: "What is a Function" http://www.mathsisfun.com/sets/function.html

Title 4:	Control Flow
Lecturer/ supervisor:	Lance Putnam
Content:	Topics include general program flow, if/else if/else and switch conditionals and iteration with for/do/while loops.
Assignments:	
Literature:	Required readings: Loudon, "Iteration Statements", "Selection Statements", and "Jump Statements", pp.60-65. "Control Structures - C++ Documentation", http://www.cplusplus.com/doc/tutorial/control/ (skip 'The goto statement' and 'The exit function').

Sensors and actuators 2	**1 ECTS**
Secretary:	Anne Nielsen
Responsible Coordinator:	Lars Knudsen
Lecturers	Lars Knudsen
Purpose and goals	Sensors and actuators 2 will work with applying the programming concepts acquired in Programming 1 to produce interactive artefacts using microcontrollers. The course will also require the student to understand basic electronics, which is used to connect microcontroller to sensors and actuators. This course will take departure in the Arduino platform, and will cover using in-

	and outputs to add sensors and actuators to our systems. 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 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 and exercises http://www.jeremyblum.com/category/arduino-tutorials/page/2/ A videoseries with good explanations on topics ranging from very basic to very advanced. Comes with recommendation from previous students.
Assessment	See module description

Title 1:	Introducing the Arduino
Lecturer/ supervisor:	Lars Knudsen
Content:	This lecture introduces the notion of microcontrollers, and why they are interesting. Survey of the Arduino platform, covering the possibilities it offers as well as the limitations it has. Using a digital output and how to use it for an LED.
Assignments:	Download and install arduino IDE. Demonstrate control of a led, by programming a specific sequence of blinks.
Literature:	Arduino Cookbook, Preface and from beginning of chapter 1 to 1.5 *Creating and Saving a Sketch* and from beginning chapter 2 to 2.4 *Working with Groups of Values*

Title 2:	Using digital inputs
Lecturer/ supervisor:	Lars Knudsen
Content:	This lecture covers connecting basic digital inputs to the Arduino, and incorporate them in interactive system. Using serial communication for debugging and using arithmetic operators will also be covered.
Assignments:	Connect a PIR sensor and light up a led for a set amount of time each time the sensor is activated. Count the amount of people passing by the sensor.
Literature:	Arduino Cookbook, from beginning of chapter 3 *Using Mathematical Operators* to 3.7 *Raising a Number to a Power*, from beginning of 4 *Serial Communications* to 4.2 *Sending Formatted Text and Numeric Data from Arduino* , from beginning of 5 *Simple Digital and Analog Input* to 5.4 *Determining How Long a Switch Is pressed*

Title 3:	Using analog inputs
Lecturer/ supervisor:	Lars Knudsen
Content:	This lecture covers using the Analog to Digital Converter (ADC) to connect sensors with variable output voltage to the Arduino. The lecture also covers manipulating this input by e.g. scaling and filtering. A vibration and a light sensor will be used as examples
Assignments:	Read an analog sensor and print the measurement to the serial monitor. Use the output to trigger a LED once it crosses a threshold and turn off the LED if it goes below the threshold again.
Literature:	Arduino Cookbook 5.6 *Reading Analog Values*, 5.7 *Changing the Range of Values*, 5.9 *Displaying Voltages Up to 5V*, 5.10 *Responding to Changes in Voltage*, 5.11 *Measuring Voltages More Than 5v (Voltage Dividers)* and 6.2 *Detecting Light*

Title 4:	"Analog" output
Lecturer/ supervisor:	Lars Knudsen
Content:	This lecture covers the problem of the Arduino's lack of proper analog output voltage, and the use of pulsewidth modulation to generate voltages, which in some cases act much like an analog output.
Assignments:	Create three different relationships between one (or more) analog input and three leds.
Literature:	Arduino cookbook 3.11 *Generating Random Numbers*, 7.1 *Connecting and using LEDs*, 7.2 *Adjusting the Brightness of an LED* and 7.5 *Sequencing Multiple LEDs: Creating a Bar Graph*

4.	**Module 7 – History of Art and Technology 2 (3+2 ECTS)**
Project period (from/to)	
Work form:	Individual work in relation to course activities and group work
Date for submission and critique:	10.04.2013
Secretary:	Anne Nielsen
Responsible Coordinator:	Line Marie Bruun Jespersen

Supervisors:	Line Marie Bruun Jespersen

Curriculum:

Module contents: The module is an introduction of the students to the history of Art & Technology with special emphasis on space, composition and components and to the theories and techniques which have been or are currently prevailing in the areas of experience and aesthetics. Using the methodology of lectures, workshops and seminars, the unit will introduce problems regarding perception, description and analysis, including the science of formalization.

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

- History of Art and Technology II

Objectives:

During this module, students should acquire:

basic **knowledge** about

- the history of art and technology, including selected styles of art and scientific theories within the area of space, composition and components
- central works of selected art periods and genres

skills in

- analyzing works of art within selected art periods and genres
- applying central concepts and analytical methods within the history of art and technology – and acquiring familiarity with their historical context and conditions
- communicating technical issues to peers and non-peers

competencies in

- comparing various works from selected art periods as regards artistic expression, technological contents, and experience effect
- applying central works from the history of Art & Technology as a framework for reflection and inspiration in relation to their own works

The module is completed with:

Examination 7

An internal written examination in **Module 7 "History of Art and Technology II".**

Form of examination: c)

The examination is a 7-day assignment on a set subject. The assignment is evaluated by one examiner and awarded a pass/fail grade.

Number of pages: the written work must not exceed 12 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% presence and submission of all assignments set during the course.

Credits: 5 ECTS.

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

4.1	*Courses*

History of Art and Technology 2	2ECTS
Secretary:	Anne Nielsen
Responsible Coordinator:	Line Marie Bruun Jespersen
Lecturers:	Line Marie Bruun Jespersen, AD:MT, Lise Skytte Jacobsen, mag. Art. PhD. AU Jakob Vengberg Sevel, mag. Art. Curator at Kunsten
Purpose and goals:	Method of working: Individual work in relation to course activities Module contents: The module is an introduction of the students to the history of Art & Technology with special emphasis on space, composition and components and to the theories and techniques which have been or are currently prevailing in the areas of experience and aesthetics. Using the methodology of lectures, workshops and seminars, the unit will introduce problems regarding perception, description and analysis, including the science of formalization. In connection with the module, courses may be offered within the following area: 1. History of Art and Technology II Objectives: During this module, students should acquire: basic **knowledge** about ▪ the history of art and technology, including selected styles of art and scientific theories within the area of space, composition and components ▪ central works of selected art periods and genres **skills** in

	▪ analyzing works of art within selected art periods and genres ▪ applying central concepts and analytical methods within the history of art and technology – and acquiring familiarity with their historical context and conditions ▪ communicating technical issues to peers and non-peers **competencies** in ▪ comparing various works from selected art periods as regards artistic expression, technological contents, and experience effect ▪ applying central works from the history of Art & Technology as a framework for reflection and inspiration in relation to their own works
Assessment:	The module is completed with: **Examination 7** An internal written examination in **Module 7 "History of Art and Technology II".** Form of examination: c) The examination is a 7-day assignment on a set subject. The assignment is evaluated by one examiner and awarded a pass/fail grade. Number of pages: the written work must not exceed 12 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% presence and submission of all assignments set during the course. Credits: 5 ECTS. The examination should demonstrate that the student has fulfilled the objectives outlined Writing week: 06.06.2013-12.06.2013.

Title 1:	Introduction and Composition
Lecturer:	Line Marie Bruun Jespersen
Content:	Introduction to the module Introduction to assignment in art history. Lecture on composition. Static and Dynamic. Mechanic and Organic

Assignments:	Group work about composition. Experiments in various composition principles and analysis of composition in different historic periods. Both painting and sculpture.
Literature:	Required reading: Arnheim, Rudolf (1974). Art and Visual Perception. A Psychology of the Creative Eye. pages 372-443 (Moodle) Rudolf Arnheim (1982) The Power of the center: a study of composition in the visual arts. Introduction pages vii-xii, Chapter 1 What is a Center? Pages 1-9, chapter 2 The Strongest Center and its Rivals pages 10-41 (moodle)

Title 2:	Chronology: Art History
Lecturer:	Line Marie Bruun Jespersen
Content:	Student will study and prepare poster-presentations about the major periods in art history before this lecture. The purpose is to create an “History of Art and Technology” chronological overview.
Assignments:	A list of topics to cover on the poster will be distributed in lecture 1
Literature:	Required reading: Stephen Farthing: Art. The whole Story. Thames and Hudson. 2012 -or similar introduction to the history of art

Title 3:	Kunsten
Lecturer:	*Jakob Vengberg Sevel, mag. Art, curator at Kunsten*
Content:	This lecture will introduce you to Kunsten: -it´s modernist architecture as context for art exhibitions and the museum library. -Kunsten as art institution: obligations and strategies -The collection at Kunsten. Jakob Vengberg Sevel will introduce you to selected works from the collection, relevant for the course theme.
Assignments:	After the lecture you will have time to explore Kunsten and the library further. Detailed assignments will be distributed in lecture 1
Literature:	Required reading:

	www.kunsten.dk Katalog over museets samling fra A-Å. 2012 (English summary) Erik Veistrup samling på KUNSTEN. 2012 (English summary) Kunsten - Historien om Museet. 2012 (English summary)

Title 4:	*Sculpture.*
Lecturer:	Lise Skytte Jacobsen
Content:	*Taking departure in Lise Skytte Jakobsens own research in sculpture, she will lecture on topics such as:* -*What is a sculpture?* And how does looking at sculptures and analyzing them differs from our interaction with others objects in our everyday life? The lecture offers a brief overview of the history of sculpture and how we can analyze them, by addressing different themes, such as 'sculpture and colour', 'the organizing prinziples of sculpture' and 'sculpture and photography'.
Assignments:	The lecture will include an assignment in sculpture analysis. Each student must in advance take a photography of a threedimensional work of art and bring one or more printed versions of the image to the lecture. Find out: who is the artist, what is the title, what is the material, when was it made? Feel free to use an absolutely 'expanded' notion of the concept of sculpture when you make your choice (objects, installation art, monuments, church art, street art ect.)
Literature:	Required reading: Rosalind Krauss: "Sculpture in The Expanded Field", in *The Originality of the Avant-Garde and Other Modernist Myths*, MIT-Press 1986 (1979), pp. 275-290. An absolutely classical text in modern art history. Please, do not pay much attention to her complicated scheme. The important thing is to notice how she argues that "we know very well what sculpture is" and also, how she sees "definite ruptures" in the modern history of sculpture. Additional reading: Alex Potts: *The Sculptural Imagination: Figurative, Modernist, Minimalist*, Yale University Press, 2000, pp. 1-23 ("Introduction: The Sculptural Imagination and the Viewing of Sculpture"). - Gives a good introduction to some of the basic elements in the history of sculpture theory. Might be a bit hard to read, but try to make google image search on the artists he mentions to get an overall idea of the art works he

	examines and notice how the difference between sculpture as a medium and painting a as medium has traditionally been described. Michael Fried: "Art and Objecthood" (1967), in *Art and Objecthood: Essays and Reviews*, Chicago and London, 1998. - Also a seminal text in the history of art (and theater). With his critical view on Minimalist sculpture from the 1960s Michael Fried actually succeds in describing the importance of the beholder (and the movement of the beholder's body, not the least) when analyzing modern art. And this point is relevant for many kinds of aesthetic experience and for art from older periods of time, also. Roxana Marcoci (ed.): *The Original Copy: Photography of Sculpture, 1839 to Today*, The Museum of Modern Art, New York, 2010. - Fine, new exhibition catalogue examining the relation between photography and sculpture. A lot of images and some nice essays. Roberta Panzanelli (ed.): *The Color of Life: Polychromy in Sculpture from Antiquity to the Present*, The J. Paul Getty Museum and The Getty Research Institute, Los Angeles, 2008. - One of several new books/exhibition catalogues on how to understand the color of sculpture. Fine images and good introductions. Jon Wood, David Hulks & Alex Potts (ed.): *Modern Sculpture Reader*, Henry Moore Institute, 2007. - A collection of major texts that have defined sculpture's radically changing status and function since the end of the nineteenth century (including Rosalind Krauss, "Sculpture in The Expanded Field"). All texts with introductions. Alex Potts has written an introduction discussing the relevance of sculpture as a medium in contemporary art.

Title 5:	Color and Contrast
Lecturer:	Line Marie Bruun Jespersen
Content:	The lecture will discuss central theories on colour and light in Western art and science. We will look into the ideas and experiments of W. Goethe (18th century), F. Delacroix (19th century) and Johannes Itten (20th century) in order to grasp the significance and meaning of colour and light. Example from different historic periods and different media will be presented.
Assignments:	Student presentations of color experiments.
Literature:	Required reading:

	Itten, J. (1969): *The Art of Colour*. New York; Van Nostrand Reynold. (The whole book) David Batchelor (ed.): Documents of Contemporary art: Color.MIT Press. Pp: 44-47 (Paul Gaugin), 48-49 (Paul Signac), 120-121 (Yves Klein), 128-130 (Joseph Alber), 178-185 (Umberto Eco), 219-220 (Rem Koolhaas)

Title 6:	Plane and Line. History of Style
Lecturer:	Line Marie Bruun Jespersen
Content:	The German art historian Heinrich Wölfflin discussed extensively the relationship between plane and line, and conceptualized Western art within this dualistic coupling. The lecture will discuss this through historical samples from the Renaissance and the Baroque, and we will discuss through exercises how Wölfflins concepts can be applied to modern and contemporary art. Mid term evaluation
Assignments:	Groupwork: discussion of Wöllflins text in relation to examples of modern and contemporary art.
Literature:	Required reading: Wölfflin, H. (1915/1983): *Principles of Art History. The Problem of the Development of Style in Later Art*. New York; Dover Publications. Pp. 18-72

Title 7:	Student Seminar, sharing knowledge
Lecturer:	Line Marie Bruun Jespersen
Content:	Students present a small paper, which deals with topics from the course
Assignments:	Prepare a 10 minute presentation of an artwork of your own choice. Make a problem formulation for your presentation, which contains central elements from the course content. Each student present and will receive feedback and feed forward from fellow students.
Literature:	All literature from the course + min. 50 pages additional literature that is relevant for your chosen subject.

Title 8:	Space
Lecturer:	Line Marie Bruun Jespersen

Content:	This lecture is about different types of representing and engaging space in western art in different periods and in different media.
Assignments:	Group discussions on example material.
Literature:	Paul Zelansky and Mary Pat Fisher: Shaping Space. Harcourt Brace College Publishers. Pages 78-111 E. H. Gombrich: Art and Illusion. Phaidon 1960 TBA Erwin Panofsky: Perspective as symbolic Form. TBA