AALBORG UNIVERSITET

Template for Semester Descriptions of Study Programmes at Aalborg University

ArT & Technology Semesterguide 3. semester

Semester details

Study board: ArT & Technology

Study regulations: BA Study Program in Art & Technology, The Faculty of Humanities, AAU, September 2019: https://studieordninger.aau.dk/2019/14/1128

Semester framework theme

Making the Intangible Wearable

For this year's edition of Dynamic Art and Technology, the theme is 'Making the Intangible Wearable'. In nature, there are many active phenomena occurring that completely evade our senses. For example, we can only see a very narrow and limited-resolution band, visible light, of the entire electromagnetic spectrum. Overcoming such limitations is a difficult task. While in the past clothes were mostly used as a protection from weather or different surfaces, or to express one's personality, mood, attitude or current feelings, in recent years we see an increasing integration of technology into textiles and clothing. This technology enhances the capabilities of the wearer as well as the capabilities of the clothes. Therefore, in this semester we will try to overcome the limitations of our physical body or the spectators' limitations through wearable artefacts. Projects should take a phenomenon from nature (natural or human-made) that is normally invisible or intangible, for example, bodily signals, energy, waves, sound, or micro/macroscopic processes, radio-signals, etc. and construct a wearable artefact that allows the wearer or spectator to experience those.

Students are meant to design and implement interplay of wearable technology and sensory extension. The technological side must provide a dynamic and reactive aspect that enhance the human senses and makes intangible/invisible phenomena wearable. The final implemented prototype needs to be wearable and mobile, so that it can be worn while walking.

Each group must work in close communication with their supervisor, with the idea to exhibit a poster of the intended design and a prototype version of the performative clothing experience (at Rendsburggade 14, 9000 Aalborg). As part of the yearly ArT exhibition the students have to additionally organize a joined catwalk across all groups. For this each group will have to determine a member responsible for organizing the catwalk together with the other groups.

Semester organisation and time schedule

This semester, students will be divided into groups of four to six students and each group will work on a single project with the goal of creating an interactive wearable art installation and/or performance to be included in the end-of-semester exhibition. For the analysis of their wearable, students are required to apply Triangulation and have to analyse video recordings as well as interviews or questionnaires.

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

ABSTRACT

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

INTRODUCTION

This is where you set the context for your work. What is the big picture? What is the motivation for This semester, students will be divided into groups of four to five students and each group will work on a single project with the goal of creating an interactive wearable art installation and/or performance to be included in

the end-of-semester exhibition.

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

ABSTRACT

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

INTRODUCTION

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

PROBLEM STATEMENT

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

BACKGROUND

This should contain previous work in the area you are investigating. This is of major importance in conducting any type of research, academic or otherwise. You should clearly identify antecedents and point out both the importance and shortcomings of each in relation to your own work. Always reference refutable sources (i.e., peer-reviewed journals, books, etc.) and, when possible, primary sources (i.e., the original author of the work) to avoid misinformation. Google and Wikipedia are okay only as starting points.

DESIGN METHODS

What specific academic and artistic methods are you employing in your study? How will you test your hypotheses, or carry out the research aspects of your project? Identify at least 2 methods (1 artistic, 1 academic) that will form the backbone of your investigation.

IMPLEMENTATION

How was the final work developed and constructed? Include overall system diagrams, floorplans, scenic designs, renderings, illustrations and other supporting evidence of the exhibition. Detail the most important aspects of the implementation and place the rest in the appendix. Ideally, a reader should be able to re-create your artwork/performance based on the information in this section.

ANALYSIS

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

FUTURE WORK

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

CONCLUSION

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

REFERENCES

List of references following the APA referencing style.

APPENDIX

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

All figures, tables, and images in the report must be labelled with a brief description and cited in the main

text. You are also required to make a video documentation of the final artefact and hand it in with the report.

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

Semester coordinator and secretary assistance

Semester coordinator: Markus Löchtefeld

Secretariat assistance: Elsebeth Bækgaard

Module description (description of each module)

Module title, ECTS credits

Dynamic Art and Technology
15 ECTS

Location

3. Semester

Module coordinator

Markus Löchtefeld

Type/Method and language

Group and project work
English

Learning objectives:
The objective of the Module: Dynamic Art and Technology is to introduce students to basic problem areas and solutions regarding the creation of artistic projects, which express various forms of dynamic effects and transitions.
During this module students should acquire:

Basic **knowledge** about

- artistic works supported by technologies expressing dynamic effects and physical aesthetic transition
- the perception and experimental effects of dynamic artefacts
- a variety of mechanical and electronic technologies used in dynamic art contexts
- artistic expression using media technologies for the production of real-time interactivity
- academic and artistic methods and tools to be used when working with design and implementation of artefacts or installations that express or trigger physical movement.

Skills in

- identifying and formulating an art problem within the semester theme
- analyzing an artistic problem and developing alternative concepts for the defined problem
- motivating the application of certain technologies in connection with the design of installations expressing transitions
- identifying, developing and describing the interaction between form, choice of materials and technological solutions with a view to achieving a clear aesthetic expression and performance
- applying academic and artistic methodologies, in regard to interaction between technology, choice of materials, aesthetic expression, and user experience in connection with the development of dynamic artefacts and installations.

Competencies in

- describing and analyzing works and installations which use adaptive technologies
- employing autonomous technologies in design and implementation of artefacts or installations expressing physical movement and transformation
- contextualizing own artistic solutions (to state-of-art, socio-cultural requisites and consequences, art theoretical and aesthetic dimensions, etc.)
- describing the completed design in an academic form and communicating this in a project report, portfolio, etc.

Academic content

The basis of this module is human perception of movements and transitions. Students will work with principles of creation of time-based artefacts, and the experience of artefacts expressing temporal, spatial, and affective transitions. A variety of media technologies and engineered solutions will be tested and applied in the creation of products, artefacts and installations in the project unit, including mechanical and electronic alternatives of creating and controlling movement, position in space and autonomous motion.

During the semester, students work theoretically and experimentally with projects that challenge their creative and technical skills and produce artistic effects focused on different types of interaction between humans and machines.

Scope and expected performance

15 ECTS credits. 1 ECTS credit = 27,5 hours of work. 20 ECTS = 412,5 hours of work consisting of preparation for course sessions, course participation, group work, exercises, counselling and exams.

Module activities

Course: Artistic and Academic Methodology III (Affective Design)
Affective design is about designing strong and specific emotions in user(s). The lecture series will first introduce the wider field as inspired by Human Computer Interaction (HCI) before focusing on the academic methodologies to analyze and evaluate artistic artworks based on Affective Design. These techniques will allow you to actually understand what the audience experiences when engaging with your artwork. Further the lecture series aim to provide the students with a theoretical toolkit that help produce more effective, convincing and impressive works of art. Assessment: through the semester project.

Lesson 1+2: Introduction to Affective Design/Affective Computing
Lecture
Lecturer: Anthony Brooks

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Emotional Design - Don Norman pp. 1-60 https://motamem.org/upload/Emotional-Design-Why-We-Love-or-Hate-Everyday-Things-Donald-Norman.pdf	60		Yes

Lesson 3+4: Three Levels of Design: Visceral, Behavioral, and Reflective/Fun & Games
Lecture
Lecturer: Anthony Brooks

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Emotional Design - Don Norman pp. 61-133 https://motamem.org/upload/Emotional-Design-Why-We-Love-or-Hate-Everyday-Things-Donald-Norman.pdf	72		Yes

Lesson 5+6: People, Places, and Things/Emotional Machines/The Future of Robots/We are all designers
Lecture
Lecturer: Anthony Brooks

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Emotional Design - Don Norman pp. 133-227 https://motamem.org/upload/Emotional-Design-Why-We-Love-or-Hate-Everyday-Things-Donald-Norman.pdf	94		Yes

Course: Digital Representation II (Rapid Prototyping)
This course will introduce the main techniques for 2D and 3D prototyping. In addition, it will introduce techniques for digital creation and cutting of textiles.

Lesson 1: Introduction to prototyping and rapid prototyping based on digital designs
Lecture
Lecturer: Peter Skotte
Make sure your computer is set up with 2D and 3D editing software. The 2D software should be able to handle vectors and the 3d software should be able to output .stl files. For 2D: Adobe Illustrator or Autocad are recommended and for 3D: Sketchup or Maya are recommended but other and free alternatives are possible to use in the course.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 2: 2D/3D representations and Tools
Lecture
Lecturer: Peter Skotte
How to rapidly make physical representations of digital 2D material. What is possible and what are the limits? Demonstration of methods available generally and at AAU.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 3-6: Hands-On
Workshop
Lecturer: Peter Skotte
Work on own designs to gain practical experience with creating physical representations of digital designs. Digital fabrication methods for, 3D printing, designing and cutting textiles, and using a Vacuum Former. Demonstration of new methods available at AAU.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Course: Graphics Programming
Graphics Programming follows Programming I, introducing more advanced programming constructs and real-time multimedia systems. Specifically, students will learn about structures and object-oriented programming, real-time sound and graphics, and basic user interaction.

Lesson 1: Programming Basics Recap
Lecture
Lecturer: Markus Löchtefeld
Review of basic programming constructs: variables, functions, arrays, loops, and control structures. Introduction to structures. For this class I prepared a flipped classroom lecture. A video/presentation that goes over all basic elements again. You are supposed to watch it before class, so that you can identify possible knowledge gaps and we can have an informed discussion about what is unclear so far and you can ask questions and for more details on these topics. We will fill class with questions and quizzes

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 2: Functions
Lecture
Lecturer: Markus Löchtefeld
Review of basic programming constructs: As part of the review and preparation of Object Oriented Programming we will re-visit functions and explore concepts such as overloading.

Literature

	Pri. lit.	Sec. lit.	Dig.

	no of p.	no of p.	upload
Lecture Notes			Yes

Lesson 3 + 4: Object Oriented programming
Lecture
Lecturer: Markus Löchtefeld
Introduction to object-oriented concepts: class versus instance/object, member variables/functions, constructors, public versus private members.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes
Programming Interactivity: A Designer's Guide to Processing, Arduino, and Openframeworks. " O'Reilly Media, Inc.", 2009.		30	No
"Objects" - Daniel Shiffman 2008 https://processing.org/tutorials/objects/			Yes

Lesson 5 + 6: 2D Graphics & Mouse and Keyboard input
Lecture
Lecturer: Markus Löchtefeld
Introductory to 2D graphic concepts and coordinate systems in response to user input. Drawing of primitive graphics, working with shapes and colours, images and simple image manipulation in Processing.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 7: Wearable Technologies
Lecture
Lecturer: Markus Löchtefeld
Introduction into prototyping and programming wearable technologies. Topics will include the extension of the Arduino platform for wearables (Lillypad), suited Sensors and Actuators and Algorithms for detection of human physiological states. Prototyping skills for the creation of interactive clothing will be tackled as well.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes
Olsson, T., Gaetano, D., Odhner, J., & Wiklund, S. (2008). Open Softwear: Fashionable prototyping and wearable computing using the		104	Yes

Arduino.			

Lesson 8: Introduction to Sound
Lecture
Lecturer: Markus Löchtefeld
Introduction to simple methods of creating Sound using Processing's Audio Libraries and how to integrate it into more complex programming structures.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Examination

Oral exam based on a project
Form of examination: b)
Hand in: Individually or in groups.

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

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.

The assessment is made of the individual student based on the learning objective. The assessment must also be based on an overall evaluation of the project report, the presentation, the joint discussion and the individually oriented questions. In order for the examinee to pass the exam, all these aspects must be satisfactory. The project report is thus part of the overall basis for the assessment, and is not given an independent grade.

Credits: 15 ECTS

Grading according to the 7-point scale.

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

Module description (description of each module)

Module title, ECTS credits

Physical Computing III
5 ECTS

Location

3. Semester

Module coordinator

Markus Löchtefeld

Type/Method and language

Individual or small groups
English

Learning objectives:
During this module students should acquire:

Basic **knowledge** about

- object-oriented programming
- real-time input/output streams used in programming interactive systems
- serial communication protocols used for inter-application communication, internet-based communications, etc.
- data mapping strategies used in building interactive systems.

Skills in

- applying technical knowledge to develop and demonstrate the use of an interactive system
- analyzing use of the artefact
- synthesizing knowledge in written documentation

Competencies in

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

Academic content

In this module, students learn about basic principles of software and how different digital systems can be designed to create alternative forms of interactions between humans and machine. Students will learn principles of object-oriented programming and how algorithms can be developed in order to design new forms of human-computer interaction

Scope and expected performance

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

Module activities

Lesson 1: Communication Protocols
Lecture

Lecturer: Markus Löchtefeld

Basic concepts in digital communication: what is a protocol, packets (header + data), addresses and ports, generating/parsing serial byte streams.

Literature

	Pri. lit.	Sec. lit.	Dig.

	no of p.	no of p.	upload
Lecture Notes			Yes
Reas, C., & Fry, B. (2014). *Processing: a programming handbook for visual designers and artists* Second Edition. Mit Press. pp.588-600		22	No

Lesson 2 + 3 + 4: Serial Communication: Physical + Digital Communication

Lecture

Lecturer: Markus Löchtefeld

Workshop on sending data serially from a computer to an Arduino to control something physical as well as sending data serially from an Arduino to a computer. Using a sensor to control a graphical object.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	10		Yes
Reas, C., & Fry, B. (2014). *Processing: a programming handbook for visual designers and artists* Second Edition. Mit Press. pp.633-673		40	No

Lesson 5 + 6 + 7: Shape Generation + Timing

Lecture

Lecturer: Markus Löchtefeld

Shape generation techniques for (artistic) graphics and visualization. Introduction to advanced programming concepts such as recursion and how to exploit these for artistic visualizations.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	10		Yes
Greenfield, G. (2012). Generative art: a practical guide using Processing, by Matt Pearson.		50	No

Lesson 8: Basic User Interface Design

Lecture

Lecturer: Markus Löchtefeld

In this lecture we will explore the basics of user interface design including simply perceptual and memory

principles, simple, design laws, Hick's Law and Fits's Law. Furthermore we will explore how to implement these in Processing using ControlP5.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	2		Yes
MacKenzie, I. Scott. *Human-computer interaction: An empirical research perspective*. Newnes, 2012.		50	Yes

Lesson 9: Video + Camera
Lecture
Lecturer: Markus Löchtefeld
Usage of Video and Webcam imagery in Processing.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	10		Yes

Lesson 10: Creating an Audiovisual Instrument
Workshop
Lecturer: Markus Löchtefeld
Combining the presented topics in graphics, sound, and user input to create a real-time audiovisual instrument.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	5		Yes

Examination

Oral exam based on a project
Combined written and oral examination
The examination is a 7-day assignment on a set subject.

Hand in: Individually or in groups.

Form of examination: b)

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

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

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

The assessment is made of the individual student based on the learning objective. The assessment must also be based on an overall evaluation of the project report, the presentation, the joint discussion and the individually oriented questions. In order for the examinee to pass the exam, all these aspects must be satisfactory. The project report is thus part of the overall basis for the assessment, and is not given an independent grade

Credits: 5 ECTS

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

Module description (description of each module)

Module title, ECTS credits

Art and Technology Concept Design
5 ECTS

Location

3. Semester

Module coordinator

Anca-Simona Horvath

Type/Method and language

Individual work in relation to course activities
English

Learning objectives:
During this module, students should acquire:

Basic **knowledge** about

- various approaches to ideation, creative methods and design theories and methods of artistic and experimental practices
- various qualitative methods in relation to the analysis and understanding of users, places and their usages, etc.
- quantitative methods in relation to the analysis and understanding of users, places and their usages, etc.

Skills in

- conceptualizing various forms of interactive or relational experience
- employing and combining various methods of concept development
- presenting artistic concepts to various target groups.

Competencies in

- designing and conceptualizing interactive installation and/or place-based events
- handling complexity related to concept design processes
- identifying own learning needs and to structure own learning related to concept design.

Academic content

The module focuses on concept design processes relevant to the development of art and technology projects. The module focuses on artistic methods such as artistic experimental creativity, as well as methods from i.e. interaction design, design thinking or similar, as measures in concept development processes. Furthermore, the module introduces presentation techniques for communicating art and technology concept designs to peers and collaboration partners.

Scope and expected performance

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

Module activities

The course introduces both theoretical and practical elements leading to the creation of a concept. Lectures and a workshop will be combined throughout the course.

f.eks (a nomadic exhibition platform for contemporary art events that generate critical dialogues between audiences, practitioners, and multiple publics) is involved in the course, through Copenhagen based artist group Piscine.

Teaching activities:

Lesson 1 - Introduction, Conceptual Art and Beyond
Lecture
Lecturer: Anca Horvath

Introduction to the course and its contents as well as an introduction to conceptual art, where we discuss and analyze works from the history of art and representative texts. We also touch on what the words "concept" and "method" can mean in art and science.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes https://prezi.com/view/w1edlkSgZKaBxKn8ut3S/	10		Yes
Sol LeWitt: *Paragraphs on Conceptual Art*, Sentences on Conceptual Art, 1969.	5		Yes
Alexander Alberro: *Reconsidering Conceptual Art, foreword to Conceptual Art : a critical anthology*, MIT Press, 1999	20		Yes

Lecture slides:

Lesson 2 - Designing and Developing Concepts: Creative Strategies
Lecture
Lecturer: Anca Horvath

Presentation of creativity tools and methods, theories on creativity and discussion of texts. Different creativity tools are tested during class exercises.
A homework assignment is given where different ideation methods are applied in relation to the semester project. Students work in the same groups as they do in their semester project.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes https://prezi.com/view/24Cv9Z9885hloofvJzG9/	10		Yes
Palle Dahlstedt: *Between Material and Ideas: A Process-Based Spatial Model of Artistic Creativity*, (2012) in J. McCormack, Computers and Creativity	30		Yes
Margaret A. Boden: *Computer Models of Creativity*, 2009.	12		Yes

Lesson 3 - Qualitative, Quantitative Research and Data Visualization tools
Lecture 3
Lecturer: Anca Horvath

We start with 10 minute group presentations on creativity methods applied in relation to the concept of the semester project.
Following this, we will discuss qualitative and quantitative research methods, what kinds of methods are used in science, and why and when are they used? Can similar methods be used in art? Are the purpose of methods in art and science the same? How does data representation change the stories we tell?

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	10		Yes
C. Gray & J. Malins: *Visualizing Research: A Guide to the Research Process in Art and Design: Chapter 1: Planning the journey: introduction to research in Art and Design*	25		Yes
C. Gray & J. Malins: *Visualizing Research: A Guide to the Research Process in Art and Design: Chapter 4: Crossing the terrain: establishing appropriate research methodologies*	36		Yes

Lesson 4 - f.eks
Lecture
Lecturer: Scott Raby
Introduction to the f.eks. platform by Scott Raby. [confirmation needed]

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes	5		Yes
https://f-x.dk/ - f.eks.	5		Yes
https://piscine.dk/ - Piscine art group	10		Yes

Lesson 5+6 - Piscine and workshop introduction
Lecture, Workshop:
Lecturers: Piscine - Mark Tholander, Jens Settergren, Anna Ørberg

Lecture 5 introduces artist group Piscine who will direct a workshop. We start with an artist talk from Piscine about their artistic practice and relevant former projects.
After this, a workshop introduction that also incorporates discussions on academic texts and art historical references to other artists who have worked with (real and imaginary) machines/ technology.

During the workshop students (working in groups of 4-6) are given specific tasks to make machine concepts. Piscine will present their own workflows - from context (placement in the history of art) to philosophical texts, to tools and towards production and dissemination. Looking at examples from art history, students will be introspective on placing their artwork in a larger context.

Groups will use various creativity tools and methods for structured development of ideas to develop **concepts** which derive from 'close reading' of philosophical texts presented in lectures. Ideally – through feedback from and access to the workflow of an established art practice (Piscine) students gain knowledge on how to better integrate philosophical ideas, technological tools and given 'assignments / themes' in a coherent and rich artwork.

The end product of the workshop is a poster (A1) for each group, presenting the developed concept in a visually compelling and unique way. The poster should present and disseminate the developed idea behind the forthcoming possible project.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload

Lecture Notes	5		Yes
Deleuze-Guattari - *Anti-Oedipus – Capitalism and Schizophrenia, The Desiring Machines,* 1972, pp.1-49	50		Yes
Heidegger - *The Question Concerning Technology*	20		Yes
Steven Connor. *Dream Machines*, 2017, pp. 7-66	60	120	Yes

Lesson 7
Workshop
Lecturer: Anca Horvath
Students work in groups on their assignment.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 8
Workshop
Lecturers: Mark Tholander, Jens Settergren, Anna Ørberg, Anca Horvath
Mid-workshop presentation of ideas so far with reviews from Piscine, Scott Raby (to be confirmed) and Anca

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 9
Workshop
Lecturer: Anca Horvath
Students work in groups on their assignment.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

Lesson 10

Workshop
Lecturers: Mark Tholander, Jens Settergren, Anna Ørberg, Scott Raby [to be confirmed], Anca Horvath
Final presentation. Student groups present their concepts to their peers, Piscine, Scott and Anca

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Lecture Notes			Yes

At the end of the course students will write an individual 3 page (500 word / page) reflective essay on their work, their creative process, and their place in the team. The essay should present an analysis of the progress of their ideation and decision making, based on the theories and discussions in the texts by Boden and Dahlstedt, the other given readings from the course, and other theoretical works students might themselves introduce, with proper references.

Submitting the poster and the essay fulfil the active participation requirement.

If active participation is not met, a written exam will take place. Students have to submit an essay: 5 page text (500 words / page) and one A3 poster, containing text and images - mindmaps, diagrams, data visualizations where they present and reflect on their own creative process in relation to a project they have worked or are working on.

Examination

Active participation/continuous evaluation
Active participation in the module's series of lectures and other course related activities is required. Active participation is defined as reading of set literature, 80 % attendance of the module's series of lectures and other course related activities, contribution to the module's discussion sessions through presentations and active participation in discussions as well as hand in of all assignments.

Re-exam:

Written exam: For the examination students have to submit a written presentation of an artistic concept within the subject field of art and technology. The written part must not exceed 10 pages.

Form of examination: c)

Hand in: Individually or in groups.

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

In case of a Fail grade, an additional examiner will also evaluate the assignment.

Credit: 5 ECTS

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

Module description (description of each module)

Module title, ECTS credits

History of Art and Technology I
5 ECTS

Location

3. Semester

Module coordinator

Morten Søndergaard

Type/Method and language

Individual work in relation to course activities
English

Learning objectives:
During this module, students should acquire:

Basic **knowledge** about

- central themes and historic developments relevant to the field of art and technology
- central works of art from art history, relevant to the field of art and technology
- the historic contexts and conditions of the field of art and technology

Skills in

- producing systematic descriptions of works of art
- applying central concepts and analytical methods within the field of history of art and technology
- identifying and extracting important concepts, trends and themes from art history

Competencies in

- comparing art works from selected art periods as regards artistic expression, technological contents, and experience effect
- Make active connections between historical examples and the student´s own practice.

Academic content

The module is an introduction of the students to the history of art and technology with special emphasis on the theories and techniques, which have been or are currently prevailing in the areas of art experience and aesthetics.
Together with History of Art and Technology II the module introduces students to examples of artists, artworks and historic events that are significant to the history of art and technology. Using the teaching forms of lectures, workshops and seminars, the module will introduce problems regarding description and analysis of artworks.

Scope and expected performance

5 ECTS credits. 1 ECTS credit = 27,5 hours of work. 15 ECTS = 137,5 hours of work consisting of preparation for course sessions, course participation, group work, exercises, counselling and exams.

Module activities (course sessions etc.)

The course will investigate a selection of experimental practices and platforms (labs, exhibitions, events, festival, institutions, machines, networks, hybrid artefacts) which, in each their different ways, reconfigured the relation of art and technology. As it will appear, these experiments and platforms transformed the ways art is produced, experienced and received by an audience. Real-time communication, Interactivity and performativity become issues of attention and critique. In the process, new notions of aesthetics and the role of the artists (and curators) emerged, most of which are still active in the cultural conceptions of art and technology today. Moreover, the collective experimental practices performed on those platforms transformed technology itself and pushed ideas and questions about human and non-human agency towards new sensibilities and critical horizons.

The course presents a non-linear history of the most radical transformations of the cultural ideas and dispositions of art and technology and traces its practices from today's distributed and networked situation to origins of the computational framing of knowledge and its legitimation.

Pass/fail conditions:

To pass the course with active participation: One individual presentation + attendance in minimum 8 out of 10 items.

If you do not do your individual presentation you will not pass even if attendance is 10 out of 10.

Lecture 1. Introduction: A history of…?

Lecture
Lecturer: Morten Søndergaard
… the explorations of human and non-human relations.

… the crisis of the (concept of) the object and objectivity

… the crisis of representation

… the (anthropo-philosophical) foundations of art and technology: Network (algorithm, database, distribution), Communication (mediality, medialization, language-game) and Geometry (form, grid, surface, light, representation). (Serres, Latour)

… the aesthetic foundations of the 'hybrid artefact' of art & technology: Interaction, interactivity, interactive, responsive, reactive, cybernetic, (media art). Reception, experience, embodiment and contemplation.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Kwastek, K., Daniels, Dieter, & Warde, Niamh. (2013). Aesthetics of interaction in digital art (Elektronisk udgave ed.). Cambridge, MA: MIT Press - Introduction	Introduction		Yes
Candy, L., Edmonds, Ernest, Poltronieri, Fabrizio, & SpringerLink. (2018). Explorations in Art and Technology (Elektronisk udgave. -2nd ed. 2018 ed., Springer Series on Cultural Computing). London: Springer London	XX		Yes

Lecture 2: Interaction and action – (a history of) the participation paradigm.

Lecture
Lecturer: Morten Søndergaard

Cases: Enter_action, Aros 2009; Total Action, MFSK 2008. And other.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Kwastek, K., Daniels, Dieter, & Warde, Niamh. (2013). Aesthetics of interaction in digital art (Elektronisk udgave ed.). Cambridge, MA: MIT Press – Chapter 1	Chapter 1		Yes
Candy, L., Edmonds, Ernest, Poltronieri, Fabrizio, & SpringerLink. (2018). Explorations in Art and Technology (Elektronisk udgave. -2nd ed. 2018 ed., Springer Series on Cultural Computing). London: Springer London	3-29		Yes

Lecture 3: Time-based and real-time – (a history of) the processual and performative conditions for art as experience

Lecture
Lecturer: Morten Søndergaard

Cases: Biotopia, Utzon Center 2010; Magnet - Thorbjørn Lausten, ZKM 2007 and Get Real!, Kiasma 2004

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Kwastek, K., Daniels, Dieter, & Warde, Niamh. (2013). Aesthetics of interaction in digital art (Elektronisk udgave ed.). Cambridge, MA: MIT Press – Chapter 2	Chapter 2		Yes
Candy, L., Edmonds, Ernest, Poltronieri, Fabrizio, & SpringerLink. (2018). Explorations in Art and Technology (Elektronisk udgave. -2nd ed. 2018 ed., Springer Series on Cultural Computing). London: Springer London	51-57 & 59-69		Yes

Workshop 4: Student individual presentations

Workshop
Lecturer: Morten Søndergaard

Analyze the histories of the concept and context of one art & tech 'hybrid artefact' of your own choice

Lecture 5: Reactive and responsive: (A history of) Intermedia and systems art.

Lecture
Lecturer: Morten Søndergaard

Cases: Dick Higgins, Nam June Paik Tv performances and Jack Burnham, 'Software' 1968.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Kwastek, K., Daniels, Dieter, & Warde, Niamh. (2013). Aesthetics of interaction in digital art (Elektronisk udgave ed.). Cambridge, MA: MIT Press – Chapter 2	Chapter 3		Yes
Candy, L., Edmonds, Ernest, Poltronieri, Fabrizio, & SpringerLink. (2018). Explorations in Art and Technology (Elektronisk udgave. -2nd ed. 2018 ed., Springer Series on Cultural Computing). London: Springer London	31 - 50		Yes

Lecture 6: Media art and the avant-garde: (A history of) conceptual art and reception

Lecture
Lecturer: Morten Søndergaard

Cases: Marcel Duchamp in Las Vegas, Tingueley & Happenings,

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Kwastek, K., Daniels, Dieter, & Warde, Niamh. (2013). Aesthetics of interaction in digital art (Elektronisk udgave ed.). Cambridge, MA: MIT Press – Chapter 2	Chapter 4		Yes
A Game of Chess with Marcel Duchamp. Film https://www.youtube.com/watch?v=z9jRMxP0EVI	-		Yes
Tomkins, C (1980). The Bride & the Bachelors: Five Masters of the Avant Garde. London: Penguin.	XX		Yes

Workshop 7: Student individual presentations

Workshop
Lecturer: Morten Søndergaard

Analyze the histories of the concept and context of one art & tech 'hybrid artefact' of your own choice

Lecture 8: The Computer and Art – (A history of) Cybernetic Serendipity and other visions

Lecture
Lecturer: Morten Søndergaard

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Ascott, R., & Shanken, Edward A. (2003). Telematic embrace : Visionary theories of art, technology, and consciousness (Elektronisk udgave ed.). Palo Alto, Calif: Ebrary.	XX		Yes
Fernández, M. (2008). Gordon Pask: Cybernetic Polymath. Leonardo	162-168		Yes
Fritz, Darko. "Vladimir Bonačić: Computer-Generated Works Made within Zagreb's New Tendencies Network (1961-1973)." Leonardo 41, no. 2 (2008)	175-183		Yes
Ascott, R. (2004). Planetary Technoetics: Art, Technology and Consciousness. Leonardo, 37(2)	111-116		Yes

Lecture 9: Beyond interaction – Kultur-tekniken and the archeology of machines (as materiality)

Lecture
Lecturer: Morten Søndergaard

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Kittler, F. (2007), The Finiteness of Algorithms, Berlin: Transmediale Journal.	X		Yes
Manovich, L. (1999): Language of New Media, Goodman: Language of art	X		Yes
Michel Serres, Statuer – Third book of the foundations		X	No
Bruno Latour interview with Michel Serres		X	No
Heidegger, M. (1934): The Questions Concerning Technology		X	No
Zizek, S. (2010), The Event		X	No

Workshop 10: Student individual presentations

Workshop
Lecturer: Morten Søndergaard

Analyze the histories of the concept and context of one art & tech 'hybrid artefact' of your own choice

Examination

Active participation/continuous evaluation

Active participation in the module's series of lectures and other course related activities is required. Active participation is defined as reading of set literature, 80 % attendance of the module's series of lectures and other course related activities, contribution to the module's discussion sessions through presentations and active participation in discussions as well as hand in of all assignments.
Form of examination: c)

Re-exam:

An internal written examination.
Hand in: Individual.

The examination is a 7-day assignment on a set subject. One examiner evaluates the assignment.

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

In case of a Fail grade, an additional examiner will also evaluate the assignment.

Credits: 5 ECTS.