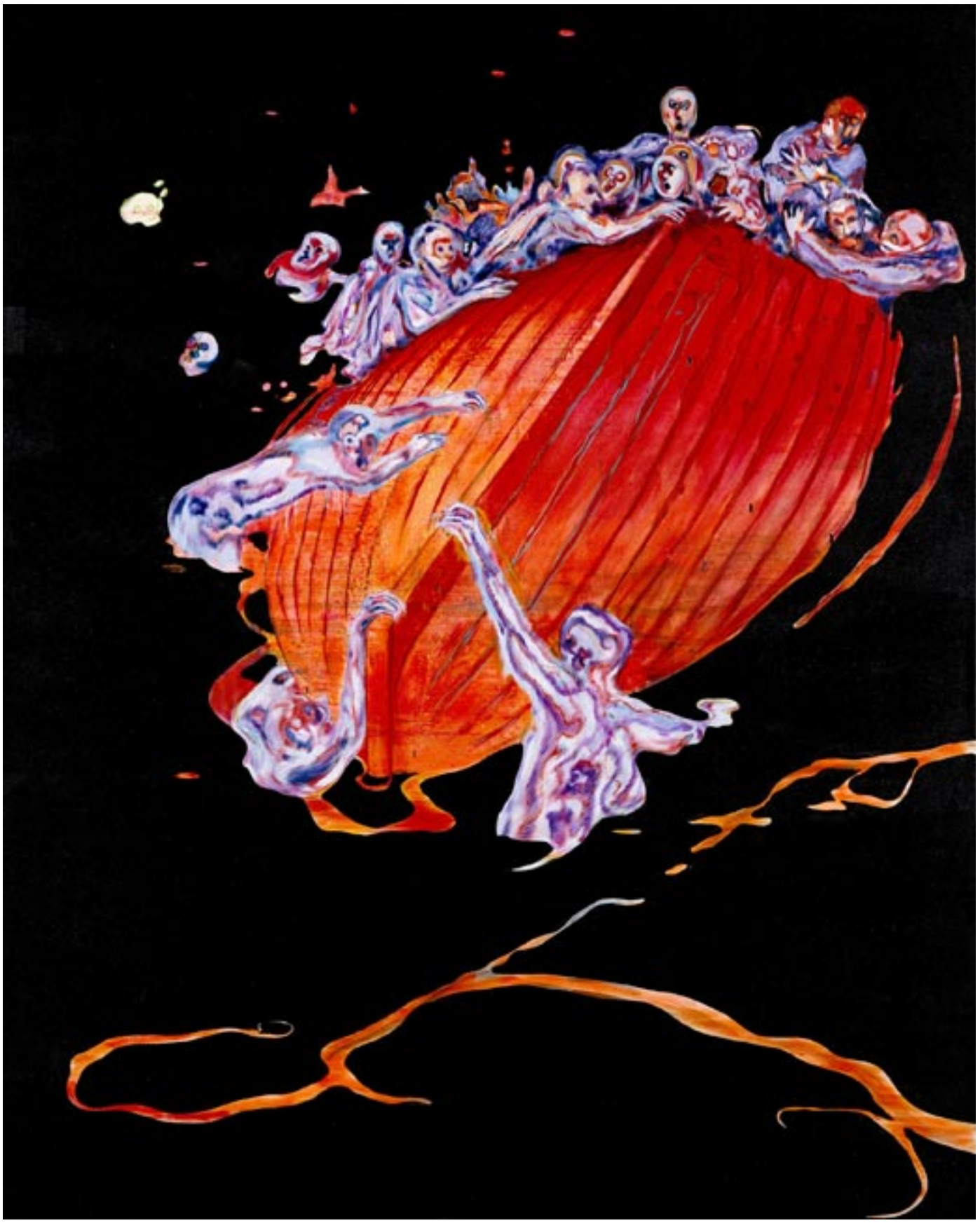
5. SEMESTER - GENEREL INFORMATION (ART_BA)

Announcements

Narratives and Interaction



Flash (2002) Daniel Richter

Semester details

School

School of Music, Music Therapy, Psychology, Communication, ArT and Technology (MPACT)

Study board ArT & Technology

Study regulation BA Study Program in Art & Technology, The Faculty of Humanities, AAU, September 2015:

http://www.fak.hum.aau.dk/digitalAssets/109/109056_ba_art_2015_hum_aau.dk.pdf

The semester introduces the production and creation of narrative artefacts and universes with special emphasis on the integration of interactive narratives and physical stages. Understanding the logic that shapes the narrative aspects of culture production and artefacts is essential for designing compelling and interactive user experiences. The modules are informed by theoretical and practical courses and seminars concerning concept development for new media including interactive cinema, video editing, scripting, screenings, workshops and discussion. The semester projects provide opportunities to establish collaborative processes and projects with external partners and the city of Aalborg.

During the semester, students will learn theories, histories and practices of interactivity, narrativity, performance and new media. Students will be introduced to different technologies and artistic methods, including prototyping performance technologies, projection mapping, and basic principles of stage design including lighting, sound, scenic design, and projection. Students will learn to analyze, discuss and apply aesthetic theories and methodologies such as intermediality, performance technology and postdramatic theatre in relation to live performance.

Overview of the modules

The semester consists of 4 modules:

Module 15: *Narratives and Interaction*, (15 ECTS). The module comprises the semester-project and the following courses supporting the semester-project (10 ECTS):

1. *Artistic and Academic Methodology V* (Participatory Methods). Course Coordinator: Elizabeth Jochum. Lecturer: Sandro Masai (1 ECTS). Lectures and workshops. (Integration of the courses on Artistic and Academic Methodology and Manuscript).

2. *Narrativity, Dramaturgy and Media 1*: Narrative theories from literature, film, performance and new media. Course coordinator: Elizabeth Jochum. Lecturers: Elizabeth Jochum and Falk Heinrich (2 ECTS). Lectures, workshops and in-course assignments.

3. *Manuscript I*: Storyboards, playwrighting and authoring performance scores. Course Coordinator: Elizabeth Jochum (1 ECTS).

4. *Video Editing*: Video Camera, Projection and Live Performance. Course coordinator: Elizabeth Jochum. Lecturer: Thomas Busk. (1 ECTS)

Module 16: *Mixed Reality Technologies* (5 ECTS). Focuses on the technology needed to do your semester-projects. The module comprises the following courses:

1. Performance Technology. Course coordinator: Palle Dahlstedt. Lecturers: Palle Dahlstedt. (2 ECTS).

Module 17: *Art-Based Research* (5 ECTS) is about concept development strategies and practice-based research. The module comprises the following courses:

1. Art-Based Research: Theory and Practice. Course coordinator: Falk Heinrich.

Lecturers: Falk Heinrich. (2 ECTS).

Module 18 (Elective): *Multimedia Programming* (5 ECTS).

The module comprises the following courses:

1. Multimedia Programming in Robotic Art. Course coordinator: Markus Löchtefeld.

Lecturers: Markus Löchtefeld, Elizabeth Jochum. (2 ECTS).

OR

You can attend course(s) offered by other study programs. Both you will need to sign up for (contact the study counselors or Anne Nielsen for further information).

INTERMEDIA PERFORMANCE

This semester will focus on narratives and interaction through intermedia performance. Students will design an interactive performance based on William Shakespeare's *The Tempest* (1611). The semester project lies at the intersection of theatre, dramaturgy, digital media, scenography and performance.All students will participate in the creative and practical development of a live, intermedia performance.

The performance will be open to the public and is scheduled for

November 30, December 1st and 2nd 2017

in MINDSTE SCENE (Aalborg Theatre).

Working in groups, students will combine playwriting/dramaturgy and interactive technologies to design responsive/interactive narrative universes and physical spaces for live performance. Teaching is organized in relevant workshops and related courses aimed at supporting project work. Students will work together in groups (5 groups total) and be responsible for one act of the play. In addition to group work, students will ALSO be assigned a role in the Production Team according to their interest in a specific aspect of production: dramaturgy, directing, set design, lighting design, costume design, sound design, and publicity/PR, etc. Students will peform in the production, and will be responsible for developing a cohesive, intermedia performance. Participation in the live event (including the production and technical rehearsals prior to the performance) is required for successful completion of the semester.

MODULE 15 - NARRATIVES AND INTERACTION (M15, P) (ART_BA)

Announcements

Edit

Edit

Add an activity or resource

TEMPESTS

Edit

William Shakespeare's *The Tempest* was written in 1611, in response to western colonialism (the British colonization of the Americas), and the enlarged geographical and mental horizons created by European exploration of distant places. The play stages the troubling effects of surprise, estrangement, and disillusionment provoked by global exploration, trade, and travel. Set on an island between North Africa and Italy, the play takes place amidst the shipping and trade routes that crisscrossed the Mediterranean, through which exotic goods from Asia and the Middle East poured into Europe, and European traders encountered people from other nations and felt the disturbance involved in crossing cultural divides. The play has inspired many adaptations and interpretations, including Aime Cesaire's postcolonial play *A Tempest* (1969) that examine the ill effects of imperialism and capitalism, Peter Greenaway's avant-garde film *Prospero's Books* (1991), and the science fiction novel *Olympos* by Dan Simmons (2005).

In 2017, we are living amidst one of the largest migrations and humanitarian crises in modern history created by the outbreak of civil war in Syria. Since 2011, 11 million Syrians have left their homes. According to the United Nations High Commissioner for Refugees (UNHCR), 4.8 million refugees have fled to Turkey, Lebanon, Jordan, Egypt and Iraq, and 6.6 million are internally displaced within Syria. One million people have requested asylum to Europe. Since 2013, Syria has made up the largest number of asylum seekers in Denmark. The journey of these asylum seekers to Europe is treacherous and deadly: refugees cross the same dangerous Mediterranean waters depicted in Shakespeare's play, and many of them do not survive the journey. The migration has sparked a crisis as countries struggle to cope with the influx of people, creating division in the EU about how to deal with resettling people.

This semester, we will develop an intermedia performance based on *The Tempest* to develop an artistic response that explores the global migrant crisis and other relevant themes. Working with the Semester theme of *Narratives and Interaction*, we will collaborate in an intermedia performance to be staged at Aalborg Theatre in December. We will be working in the Mindste Scene, on a custom set that is ideal for interactive projection mapping, LED lighting effects, and sound. Details of the production will be discussed at the early semester meeting in August.

Sources:

http://syrianrefugees.eu

http://refugees.dk

https://www.bl.uk/shakespeare/articles/the-tempest-and-the-literature-of-wonder

Add an activity or resource

NARRATIVITY, DRAMATURGY AND MEDIA I (M15, C) (ART_BA)

Announcements Edit Edit

News forum Edit

Director Presentations Edit

Add an activity or resource

Lesson 1: NDMI-1 Narrative Theory: Poetics of Performance Edit

Lecture and in-class exercises

This course introduces students to the theory and study of narrative and narrative structure. Special focus will be given to literary theory and how these concepts influence dramaturgies across different fields and media, including theatre and performance.

Lecturer(s): Elizabeth Jochum

Required Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
The Tempest by William Shakespeare	75		no
The Narrative Imagination (Martha C. Nussbaum) Introduction (pdf)	20		yes
Poetics (Aristotle) (pdf)	40		yes

Add an activity or resource

Lesson 2: Workshop: Adaptation and Devised Performance Edit

Workshop

Students will learn methods in creative techniques for conceptualizing and staging devised work for the stage and intermedia performance. Special focus will be given to understanding how directors work with playwrights, designers, and actors to adapt literary works for the stage.

Lecturer(s): Elizabeth Jochum

Literature

yes

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

Cambridge Intro to Theatre Studies (Ch 12 Theatre & Media) (C. Balme) (pdf)	40		yes
A Tempest by Aimé Césaire	72		no
Julius Cesar at Public Theatre (pdf)	0		

Add an activity or resource

Lesson 3: NDMI 3: Performance and New Media

Edit

Lecturer(s): Elizabeth Jochum

In-Class Presentations (7-10 minutes)

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
The Essential Theatre. Ch 1: The Nature of Theatre (Oskar Brokett, Robert Ball) pp 1-34 (pdf)	34		yes
Surrogate Stages: Theatre, Performance and the Challenge of New Media (Balme) (pdf)	13		yes
Performance and New Media (David Saltz) (pdf)	40		yes

In-class Presentations

Edit

Add an activity or resource

Lesson 4: NDMI- 4 Workshop: Dramaturgy and Intermedia Performance

Edit

Workshop

Students will learn methods in research, playwriting, and creative dramaturgy for conceptualizing and staging devised works for the stage and intermedia performance. Special focus will be given to understanding how adaptation/staging of narratives.

Lecturer(s): Elizabeth Jochum

Required Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Digital Performance (Ch 4 MultiMedia Theatre) (Steve Dixon) (AUB Online)	20		yes
Routledge Companion to Dramaturgy (Introduction) (pdf)	25		yes
The Essential Theatre: "The Playscript" (Oskar Brokett, Robert Ball) pp 35-53 (pdf)	18		yes

Add an activity or resource

Lesson 5: NDMI-5: The Stage as Machine

Edit

Lecture

This course considers approaches to narrative in film. We examine how filmmakers used the new medium to create alternative narrative structures through experimentation and exploration. What do these structures reveal about the nature of perception, and how does the filmic medium shape the production and interpretation of meaning in other areas of visual culture? In-class student presentations on relevant artists (10 minutes, including slides, video, audio, one-page written summary).

Lecturer(s): Elizabeth Jochum

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Theatre, Performance & Technology (CH 3, 5, 7) (Christopher Baugh) (pdf)	60		yes
Cambridge Introduction to Theatre Studies (Ch 3: Spaces and Places) (Christopher Balme)	20		yes
The Essential Theatre. Ch 15: Scene Design p. 361-381 (pdf)	20		yes

In-Class Presentations

Edit

Add an activity or resource

Lesson 6: NDMI 6: Virtual Performance from Bayreuth to Cyberspace

Edit

In-Class Presentations

Workshop

On the basis of the student groups' specific story world ideas, the groups will produce, present and discuss pitch documents, manuscripts and storyboards.

Exercise: The student groups have to prepare a pitch documents prior to the workshop and present it at the workshop. During the workshop, the students will work with manuscript and storyboarding techniques relevant to their projects.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Live and Technologically Mediated Performance (Philip Auslander) (pdf)	14		yes
Live art in art history: a paradox? (Amalia Jones) (pdf)	17		yes
*Virtually Yours: Presence, Liveness, Lessness (*Herbert Blau) (pdf)	16		yes

In-Class Presentations Edit

Add an activity or resource

Lesson 7: NDMI-7: Interactivity and Dramaturgy Edit

Lecture

The lecture introduces, firstly, relevant notions of interaction and interactivity, secondly, various dramaturgical models of interactive narratives and, thirdly, work methods such as pitch, manuscript and storyboarding relevant for interactive narratives.

Lecturer(s): Falk Heinrich

Assignment:

Each group has to prepare and present at the following lecture (no 6) a pitch document that conveys the group's idea of an interactive narrative of your choosing.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Ryan, Marie-Laure, 2001. *Narrative as Virtual Reality.* Baltimore: John Hopkins University Press (chapter 3, 7, 8) (available as e-book via Auboline)			via library
Manovich, Lev, 2001. *Language of New Media.* Cambridge MA: MIT Press (p 226ff)			
Ryan, Marie-Laure, 2008. "Interactive Narratives, Plot Types and Interpersonal Relations", ICIDS '08 Proceedings of the 1st Joint International Conference on Interactive Digital Storytelling: Interactive Storytelling pdf			

Edit

ryan_ interactive narrative

slides NDM1_7 Edit

Add an activity or resource

Lesson 8: NDMI 8: Interactive narratives Edit

Lecture

Interactive narratives: a) productive interactivity and b) pitch, manuscript and storyboarding

The lecture introduces the concept of productive interactivity as a second artistic and academic perspective on interactive narratives. It discusses the theoretical assumptions and practical challenges. The second half is a student presentation of their pitch document. On the basis of the specific story world ideas, the groups will produce, present and discuss pitch documents, manuscripts and storyboards.

Lecturer(s): Falk Heinrich

Exercise: The student groups have to prepare a pitch documents prior to the workshop and present it at the workshop. During the workshop, the students will work with manuscript and storyboarding relevant for their project.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Crawford, Chris, 2005 *On interactive storytelling.* Berkeley: New Reader Games (chapter 3)			e-book via library
Katz, S. 1991. *Shot by Shot.* Studio City, CA: Michael Wiese Productions		whole book	
Begleiter, Marcie. 2001. From word to image. Studio City, CA: Michael Wiese Productions		whole book	
Bruce Block, 2001. *The visual story*. Focal Press		whole book	

Add an activity or resource

ARTISTIC AND ACADEMIC METHODOLOGY V (PARTICIPATORY METHODS) (M15, C) (ART_BA)

Announcements

News forum

Artistic and Academic Methodologies

Topic 1

Performing Perception Practice - Part 1

Lecturer: Sandro Masai

- Thinking the body as the medium in performer-audience interaction.
- Introduction of techniques for improvisation in modern dance and physical theatre: presence, movements and rhythm.
- Practical exercises with presentations and group discussions.

Literature:

Dalsgaard, P. and Hansen, L. K. 2008. Performing Perception – staging aesthetics of interaction. ACM Trans. Comput.-Hum. Interact., 15, 3, Article 13 (November 2008), 33 pages.

Topic 2

Performing Perception Practice - Part 2

Lecturer: Sandro Masai

- Thinking the body as the medium in performer-audience interaction.
- Introduction of techniques for improvisation in modern dance and physical theatre: presence, movements and rhythm.
- Practical exercises with presentations and group discussions.

Literature:

Dalsgaard, P. and Hansen, L. K. 2008. Performing Perception – staging aesthetics of interaction. ACM Trans. Comput.-Hum. Interact., 15, 3, Article 13 (November 2008), 33 pages.

Topic 3

Performance Design: planning and performing - Part 1

Lecturer: Sandro Masai

- Design Methods applied to Performance Art.
- Site-specific performance
- Participatory Performance

Literature (books):

- Designing Interactive Systems – David Benyon.
- Performance, Technology and Science – Johannes Birringer
- The Transformative Power of Performance – Erika Fischer-Lichte
- Performance Art – RoseLee Goldberg

Topic 4

Performance Design: planning and performing - Part 2

Lecturer: Sandro Masai

- Design Methods applied to Performance Art.
- Site-specific performance
- Participatory Performance
- Performance as research
- Presentations and discussions.

Literature (books):

- Designing Interactive Systems – David Benyon.
- Performance, Technology and Science – Johannes Birringer
- The Transformative Power of Performance – Erika Fischer-Lichte (pdf)
- Performance Art – RoseLee Goldberg (pdf)

MANUSCRIPT I (M15, C) (ART_BA)

Announcements Edit Edit

News forum Edit

Add an activity or resource

Topic 1 Edit

Lesson 1: Basics of Dramatic Writing

This lecture and workshop provides and in-depth discussion the tenets of dramatic writing and epic poetry. We begin by exploring how the core of narrative theory is applied in classical playwrighting. Exercise will include dialogue, short plays, and performance sketches. We will also discuss the different approaches to manuscript, performance score, and playwriting in different traditions where there is no traditional of literary analysis for texts. How do artists record and devise works in the absence of a literary text? What does a manuscript for a performance look like?

LOCATION:

Lecturer(s): Elizabeth Jochum

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Playwriting (Smiley, S and Bent, N) (pdf)	25		yes
Poetics (Aristotle) (pdf)	40		yes
Natysastra (Bharata) (pdf)	14		yes

Add an activity or resource

Topic 2 Edit

Lesson 2: Experiments in Dialogue and Structure

This lesson builds on the first lesson and introduces more abstract and complex approaches to dramatic writing. Working with the text *The Tempest*, we will devise scenes based on passages from the text, and experiment with dialogue and dramatic structure. Emphasis will be placed on experimental approaches to playwriting and manuscipt development.

Lecturer(s): Elizabeth Jochum

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
The Art of Dramatic Writing (Egri, Lgos) (pdf)	30		yes
A Tempest by Aimé Césaire	70		

Add an activity or resource

Topic 3

Edit

Lesson 3: Devised Theatre

This workshop focuses on developing and devising through improvisation and performance practice. Students will devise methods for visualizing and scoring performance narratives and devising intermedia performance.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Devised Theatre (pdf)	3		yes
Routledge Companion to Dramaturgy (pdf)	27		yes
Devised Theatre: Ten Tips (pdf)			

Add an activity or resource

Topic 4

Edit

Lesson 4: Scoring for Intermedia Performance

This workshop builds upon Lesson 3 towards devising manuscripts through improvisation and peformance. Specifically, we will work to integrate the groups towards a cohesive manuscripts for our adaptation of *The Tempest*. Students are expected to work across

groups to develop a manuscript - or blueprint - for the final performance.

Lecturer(s): Elizabeth Jochum

Add an activity or resource

VIDEO EDITING (M15, C) (ART_BA)

Announcements Edit

News forum Edit

Add an activity or resource

Topic 1 Edit

Introduction to the Camera

This course introduces students to the basic of the digital camera, and covers topics such as settings, camera set-up, exposure, etc.

Students will work in groups to document their art projects, from design to completion, and produce a 3 minute video. It is strongly recommended that students use the projects in the Multimedia Programming Elective: Robotic Art for their Video Editing project.

Add an activity or resource

Topic 2 Edit

Film Lighting

This hands-on workshop teaches the fundamentals of film lighting. Students will apply these principles in work on their video documentation projects.

Add an activity or resource

Topic 3 Edit

Fundamentals of Editing

This hands-on workshop provides students with an overview of editing principles and features of Adobe Premiere, the timeline-based video editing application. The course also introduces important concepts in film editing, such as editing patterns, coherence, continuity, transitions, montage, and music.

Add an activity or resource

Topic 4 Edit

Fundamentals of Editing - Part 2

Continuation of previous Topic 3.

Video Project Edit

Add an activity or resource

Topic 5 Edit

Add an activity or resource

Topic 6 Edit

Add an activity or resource

Topic 7 Edit

Add an activity or resource

Topic 8 Edit

Add an activity or resource

Topic 9 Edit

Add an activity or resource

Topic 10 Edit

Add an activity or resource

MODULE 16 - MIXED REALITY TECHNOLOGIES (M16, P) (ART_BA)

Announcements

Edit

Edit

Add an activity or resource

Topic 1

Edit

MODULE 16: MIXED REALITY TECHNOLOGIES (MIXED REALITY TEKNOLOGI)

(5ECTS)

HSA550028F

Location:

ArT5

Study Board:

ArT & Technology

Module coordinator:

Palle Dahlstedt, KOM

dahlstedt@hum.aau.dk

Method of work and language:

Individual or small groups.

English

Module contents:

The module is comprised of theoretical and practical courses and seminars within technologies for construction of performative environments or installations

Objectives

The objective of Module 16 “Technologies for performative environments and installations” is to introduce the students to theories and methods of technologies in relation to the creation of interactive or re-active narratives and performances that merge virtual and material spaces.

Courses:

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

- Performance Technology I
- Programming Multimedia Systems

Learning objectives:

During this module, students should acquire:

Basic **knowledge** about

- basic theories and methods for fiducial recognition and tracking
- basic theories and methods for natural object recognition and tracking
- basic theories and methods for development of augmented and virtual reality systems
- basic theories and methods for human motion capture and tracking
- mapping between real and virtual world environments
- methods for measurement of experiences and presence in different environments

Skills in

- applying methods for development of augmented, mixed and virtual environment
- applying methods for tracking of fiducial and natural objects
- applying methods for automated analysis and recognition of human motion
- analysis of mapping between real, augmented, mixed or virtual reality environments
- analysis of user experiences and presence in augmented, mixed or virtual reality environments

Competencies in

- analysing and constructing augmented, mixed and virtual environment
- analysing and constructing human motion capture systems
- analysing and constructing systems that map information between real, augmented, mixed or virtual reality environments

The module is completed with:

Examination 16

An internal written examination in **Module 16: "Mixed Reality Technologies"**

Form of examination: c)

The assignment is evaluated by one examiner and awarded a pass/fail grade.

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

Evaluation: pass/fail. In case of a Fail grade, also a second examiner will evaluate the assignment.

Substitution: the examination may be substituted by satisfactory and active participation in courses, i.e. 80% presence and submission of all assignments set during the course.

Credits: 5 ECTS

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

Exam dates:	In-class assignments and active participation (see above).
Exhibition dates:	
Deadline:	
Hand-in date:	
To:	

Scope and expectations:

The project for this module is expected to comprise a small report and an artistic product. This product may be part of the semester's main product. Both the report and the product are to be made in a group. In the event that the main semester project is used as case for this module, then this group should be identical to the main semester project group.

The project should address all relevant aspects taught in this module, i.e. the technologies used, how it fits within the different definitions of mixed reality, how it is implemented, and how it will be evaluated.

Participants:

Prerequisites for participation:

Course: Performance Technology I

(2 ECTS)

PERFORMANCE TECHNOLOGY I (M16, C) (ART_BA)

Course: Performance Technology I

Edit

This series of lectures and workshops will teach how to use mixed media technologies in an interactive performance situation, tightly integrated with the semester project. The course is based around two free graphical programming environments, vvvv (https://vvvv.org/) and Pure Data (often called PD, https://puredata.info/), which are commonly used in interactive art, music and performance applications. Both PD and vvvv can be used for audio and visuals, but we will concentrate on their stongest areas, which are interactive visuals in vvvv and audio in PD.

The course will be taught hands-on, so you are expected to bring a laptop to every lecture and use it in the classroom.

Before the course, you must install vvvv and PD from the above websites. PD is multi-platform, while vvvv is for Windows only. If you have a Mac, you can still run it under Windows on it. Read here for instructions: https://vvvv.org/documentation/best-practices-when-using-bootcamp

Announcements

Edit

Add an activity or resource

Lesson 1: Introduction to Performance Technology and Dataflow Programming

Edit

Lecture/workshop with active participation

Models of interaction in performance. Introduction to tools and techniques. Discussion of examples.

Date and time: Sept 26, 14.30-16.15

Literature

https://en.wikipedia.org/wiki/Pure_Datahttps://en.wikipedia.org/wiki/Pure_Data

Excerpt from “Designing Sound” by Andy Farnell – a good introductory book on PD http://dm.ncl.ac.uk/courseblog/files/2011/02/pd_intro.pdfhttp://dm.ncl.ac.uk/courseblog/files/2011/02/p

(also posted below)

The PD manual and the tutorials that come pre-installed with PD (see Help-Help Browser-Pure Data inside the PD window).

Scott deLahunta - Virtual Reality and Performance

Scott deLahunta - Virtual Reality and Performance File

Edit

Andrew Farnell: Deisigning Sound (Pure Data intro)

Edit

Add an activity or resource

Lesson 2+3: Introduction to vvvv programming

Edit

Lecture/workshop with active participation

Basic concepts. Interactive visuals, 2D and 3D. Motion sensing. Integration of video and audio.

An exercise using the acquired skills will be given, to be carried out in the semester project groups. It should be presented in a five-minute presentation at lecture 4.

Date and time: Sept 27, 9.15-13.15

Lecturer: Palle Dahlstedt

Literature

The official documentation for the vvvv programming environment at https://vvvv.org/documentation/documentation

Illustrated guide to VVVV https://vvvv.org/contribution/illustrated-guide-to-vvvv-for-newbies-in-computer-arts

Add an activity or resource

Lesson 4: Presentation and discussion of interactive visuals assignments

Edit

Lecture/workshop with active participation

Presentation of assignments from lecture 3. Virtual Reality, Augmented Reality and Mixed Reality – theory, history and examples.

Date and time: Oct 10, 15.30-17.15

Lecturer: Palle Dahlstedt

Literature

Benford & Giannachi - Performing Mixed Reality (introduction)

Boden & Edmonds: Generative Art

Benford & Giannachi - Performing Mixed Reality Edit

Boden & Edmonds: Generative Art Edit

Add an activity or resource

Lesson 5 + 6: OSC and Interactive sound in Pure Data programming

Edit

Lecture/workshop with active participation

OSC as a standard data interface between applications. Pure Data concepts. Audio tracking. Interaction with synthesis and recorded sound.

An excercise will be given, to be carried out in the semester project groups. It will be presented in a five-minute presentation at lecture 7.

Date and time: Oct 11, 9.15-13.00

Lecturer: Palle Dahlstedt

Literature

Introduction to and specification of OSC http://opensoundcontrol.org/introduction-osc

Add an activity or resource

Lesson 7: Mixed Reality and Further tracking techniques

Edit

Lecture/workshop with active participation

Virtual Reality, Augmented Reality and Mixed Reality: Tracking technologies, sensors, motion detection, blob detection, skeleton detection.

Date and time: Oct 19, 15.30-17.15

Lecturer: Palle Dahlstedt

Literature

Krevelen & Poelman (2010) A Survey of Augmented Reality Technologies, Applications and Limitations

Krevelen & Poelman (2010) A Survey of Augmented Reality Technologies, Applications and Limitations

Edit

Add an activity or resource

Lesson 8: Discussion of project ideas and prototypes

Edit

Lecture/workshop with demonstrations

We discuss the feasibility of your semester project ideas and prototypes from a performance technology perspective.

Evaluation methods for Mixed Realities.

Date and time: Oct 21, 9.15-11

Lecturer: Palle Dahlstedt

Literature

Grasset: Survey of Evaluation Techniques of Augmented Reality

Grasset: Survey of Evaluation Techniques of Augmented Reality

Edit

Add an activity or resource

MODULE 17 - ART-BASED RESEARCH (M17, P) (ART_BA)

Announcements Edit Edit

Add an activity or resource

Art-Based Research, 5 ECTS, ArT5 Edit

Objectives

The course will provide the students with a basic knowledge of and competences in dealing with agendas of art-based research and how to create an artistic research design. The module also aims at developing an academic discourse, both oral and written, around artistic investigations.

The scope is to develop an art based research project that, firstly, is based on the academic formulation of an artistic problem and that, secondly, must entail a conceptualization, development, implementation and evaluation of an art-based research design within the field of the art and technology.

As a constrain and for the purpose of coherence with the overall semester frame, the art-based research design will have to apply and make productive performative expressions and methods (for example, theatrical, performance or interactive/participatory forms) as means and/or subject matter of research.

The artistic investigation and its academic conceptualization (including description, methods and results) will be the subject of the oral examination.

Academic content and conjunction with other modules/semesters

Art-Based Research (ABR) is about doing research through the practice of art. ABR is also one core of the academic legitimacy of ArT: the use of an ArT-practice for investigating selected topics and gaining knowledge. Every academic discipline has its particular research strategies, for example, ethnographic methods, hermeneutical methods, or the so-called scientific method. ABR is about research methods used in and inspired by the arts.

The module will introduce the foundations and objectives of art-based research and it will invite to discussing the various derivatives of art as academic (or part of academic) methods, their affordance and interplay with other academic methods.

Scope and expected performance

The module/course contains four lectures given by the module responsible and four workshop sessions, where the students will present and discuss their design, progress, evaluation methods, and academic outcome.
The students must come prepared, which means have read the mandatory texts, created, described, executed and evaluated their design depending on the assignments given for each session.

Workload: 5 ETCS = 5 x 27.5 t = 137 t

The module will be assessed through an external oral examination on the basis of an art-based research project and an academic report/paper (no more than 10 pages). The project must be designed and realized in groups of no less than 4 persons.

The module contains a concrete assignment that will be the foundation of the examination. The assignment consists of an arts-based research design that must:

1. Thematically investigate the notion of nature in the anthropocene and its derived challenges such as ecology, pollution, sustainability, access, etc. Concretely, we will hear about urban ecosystem services, their content, purposes, aims, and their ideological bearings in regard to nature. The overall question of the project will be, whether nature can be reduced to be services and be part of utilitarian world view? Possible questions to be asked could be: What other conceptualizations of nature are there? What do people refer to when they are talking about nature. What other notions of nature could we develop? How are urban citizens part of ecosystem services? Etc.

2. Conceive and apply a performative, interactive and/or narrative artefact as a method of investigation in order to collect or produce by you specified empirical data. Evaluate and interpret the data. Formulate your findings.

3. The written part of the examination must entail your problem formulation, a description of your investigatory artifacts (method) and your findings.

"Examination 17

An external oral examination in **Module 17 "Art-Based Research"** (Kunstnerisk forskning).

Form of examination: a)

For the examination students are required to produce an artistic research design and an academic report/paper, which must not exceed 10 pages.

Evaluation: Pass/Fail.

Credits: 5 ECTS"

ART-BASED RESEARCH - THEORY AND PRACTICE (M17, C) (ART_BA)

Announcements

Lecture 1: What is arts-based research?

The lecture will present and discuss various theoretical approaches to arts-based research.

Date and Time:

Lecturer(s): Falk Heinrich

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
McNiff, Shawn (2008) "Art-Based Research" In Knowles, J.G. & Cole, A.L., *Handbook of the arts in qualitative research: perspectives, methodologies,examples, and issues*. London: Sage. P. 29-40	x		yes
Borgsdorff, H. 2010. "The Production of Knowledge in Artistic Research" in Biggs, M. and Karlsson, H. (ed) *The Routledge Companion to Research in the Arts*. London, New York: Routledge.	x		yes

Workshop 1: The framework of the module assignment

Presentation of the module's project assignment, its scope and requirements. The assignment is the basis for the oral examination.

The module contains a concrete assignment that will be the foundation of the examination. The assignment consists of an arts-based research design that must:

1. Thematically investigate the notion of nature in the anthropocene and its derived challenges such as ecology, pollution, sustainability, access, etc. Concretely, we will hear about urban ecosystem services, their content, purposes, aims, and their ideological bearings in regard to nature. The overall question of the project will be, whether nature can be reduced to be services and be part of utilitarian world view?

Possible questions to be asked could be: What other conceptualizations of nature are there? What do people refer to when they are talking about nature. What other notions of nature could we develop? How are urban citizens part of ecosystem services? Etc.

2. Conceive and apply a performative, interactive and/or narrative artefact as a method of investigation in order to collect or produce by you specified empirical data. Evaluate and interpret the data. Formulate your findings.

3. The written part of the examination must entail your problem formulation, a description of your investigatory artefacts (method) and your findings.

Date and Time:

Lecturer(s): Falk Heinrich,

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
NN			
Candy, L. and Edmonds, E., 2010. "The Role of the Artefact and Framework for Practice-Based Research" in Biggs, M. and Karlsson, H. (ed) *The Routledge Companion to Research in the Arts*. London, New York: Routledge.	x		yes

Lecture 2: Why arts-based research?

The lecture will present and discuss the epistemological and institutional contexts for arts-based research.

Date and Time: Lecturer(s): Falk Heinrich,

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Sullivan, Graeme (2010). *Art Practice as Research - Inquiry in Visual Arts*. Pennsylvania State University, USA.	x		

Chap. 2 + 4			
Pennsylvania State University, USA. Downloadable from http://uk.sagepub.com/sites/default/files/upm-binaries/31775_Chapter4.pdf	x		yes

Lecture 3: How to conduct arts-based research?

The lecture will present a selection of cases and methods of arts-based research with an emphasis on performative and narrative strategies.

Date and Time: Lecturer(s): Falk Heinrich,

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Leavy, P., 2009. *Methods meets Art*. New York, London: The Guilford Press. Chap 2.	x		yes
Leavy, P., 2009. *Methods meets Art*. New York, London: The Guilford Press. Chap 5.	x		

Workshop 2: Initial research design and its problem (formulations)

The workshop consists of presentations and discussions of the student groups' initial research design and its artistic and academic foundations.

Date and Time:

Lecturer(s): Falk Heinrich

Literature

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

Handbook of the Arts in Qualitative Research: Perspectives, Methodologies, Examples, and Issues, Edited by: J. Gary Knowles & Ardra L. Cole http://methods.sagepub.com/book/handbook-of-the-arts-in-qualitative-research	x

Workshop 3: Arts-Based Research in Progress

Student presentations of the process of their arts-based research and their first findings in form of observations, data collections, etc.

Date and Time:

Lecturer(s): Falk Heinrich

Lecture 4: Evaluating and reflecting arts-based research

The lecture will present and discuss types and modi of arts-based research findings and its notion(s) of knowledge.

Date and Time:

Lecturer(s): Falk Heinrich

Literature

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

Springgay, S.; Irwin, R. L. & Kind, S. (2012) "A/R/Tographers and Living Inquiry"
In: J. Gary Knowles & Ardra L. Cole (eds) H*andbook of the Arts in Qualitative Research: Perspectives, Methodologies, Examples, and*
Issues. Thousand Oaks: Sage

Workshop 4: Final presentation of the arts-based research projects

Presentation of the student projects' findings in terms of artistic and academic knowledge its formats and dissemination possibilities.

Presentation and clarification of the assessment and its requirements.

Date and Time:

Lecturer(s): Falk Heinrich

Topic 9

MODULE 18 - MULTIMEDIA PROGRAMMING (M18, P) (ART_BA)

General

Edit

The goal of this course is to strengthen a student's capacity to participate in multimedia application and software development. This puts the student in a position to take advantage of a significant amount of prior work by integrating a variety of software libraries on a variety of platforms.

* This module may be offered by the board of study depending on e.g. the amount of students enrolled or other relevant circumstances.

Courses:

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

· Multimedia Programming

Learning objectives:

During this module, students should acquire:

Basic **knowledge** about

· advanced topics of software development relevant to the design and implementation of multimedia software applications, e.g., software design patterns, programming mobile devices and other embedded systems, network programming and VR and AR programming.

Skills in

· applying a variety of intermediate and advanced software technologies, techniques and methods in the construction of effective and efficient multimedia software applications

Competencies in

· analyzing multimedia software engineering problems and select, apply and evaluate appropriate technologies in developing successful solutions

· applyíng advanced concepts in multimedia programming and software engineering

The module is completed with:

Examination 18

An internal written examination in **Module 18: "Multimedia Programming" (Elective).**

Form of examination: c) The examination is a 7-day assignment on a set subject.

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

Evaluation: pass/fail. One examiner evaluates the assignment. In case of a Fail grade, an additional examiner will also evaluate the assignment.

Substitution: the examination may be substituted by satisfactory and active participation in courses, i.e. 80% attendance and submission of all assignments set during the course.

Credits: 5 ECTS 34

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

Exam dates:	n/a
Exhibition dates:	In class
Deadline:	
Hand-in date:	5 October 2017 12:30h
To:	Through Digital Exam

Scope and expectations:

The aim of this course is to introduce students to the theoretical and practical aspects of robotic art. The course places equal emphasis on both aesthetic and technical concerns so students can develop competencies in the creation of an aesthetically engaging autonomous art work. Students will learn how to design, program and execute a computer-controlled work of art using models such as random walks, flocking, and Markov chains. Students will also confront issues in planning, coordination, and control that arise when transitioning from computer simulation to the physical world. There are two assignments: (1) a midterm sketch/study and one-page summary and (2) the completion of a group-based mini-project incorporating computer-controlled robotics. Students will be provided with robots to experiment with (the Arduino robot and Sphero mobile robot), but are invited to develop their own design or robotic prototypes. Prior experience in imperative and object-oriented programming (e.g., C++ or Java) is required.There are two assignments: (1) a midterm sketch/study and one-page written summary and (2) the completion of a group-based mini-project incorporating computer-controlled robotics. The mini-project must be accompanied by a written report and oral presentation summarizing the project, method, approach, and conclusions (10 pages maximum).

Students will be provided with robots to experiment with (the Arduino robot and Sphero mobile robot), but are invited to develop their own design or robotic prototypes.

Prerequisites for participation:

Prior experience in imperative and object-oriented programming (e.g., C++ or Java) is required.

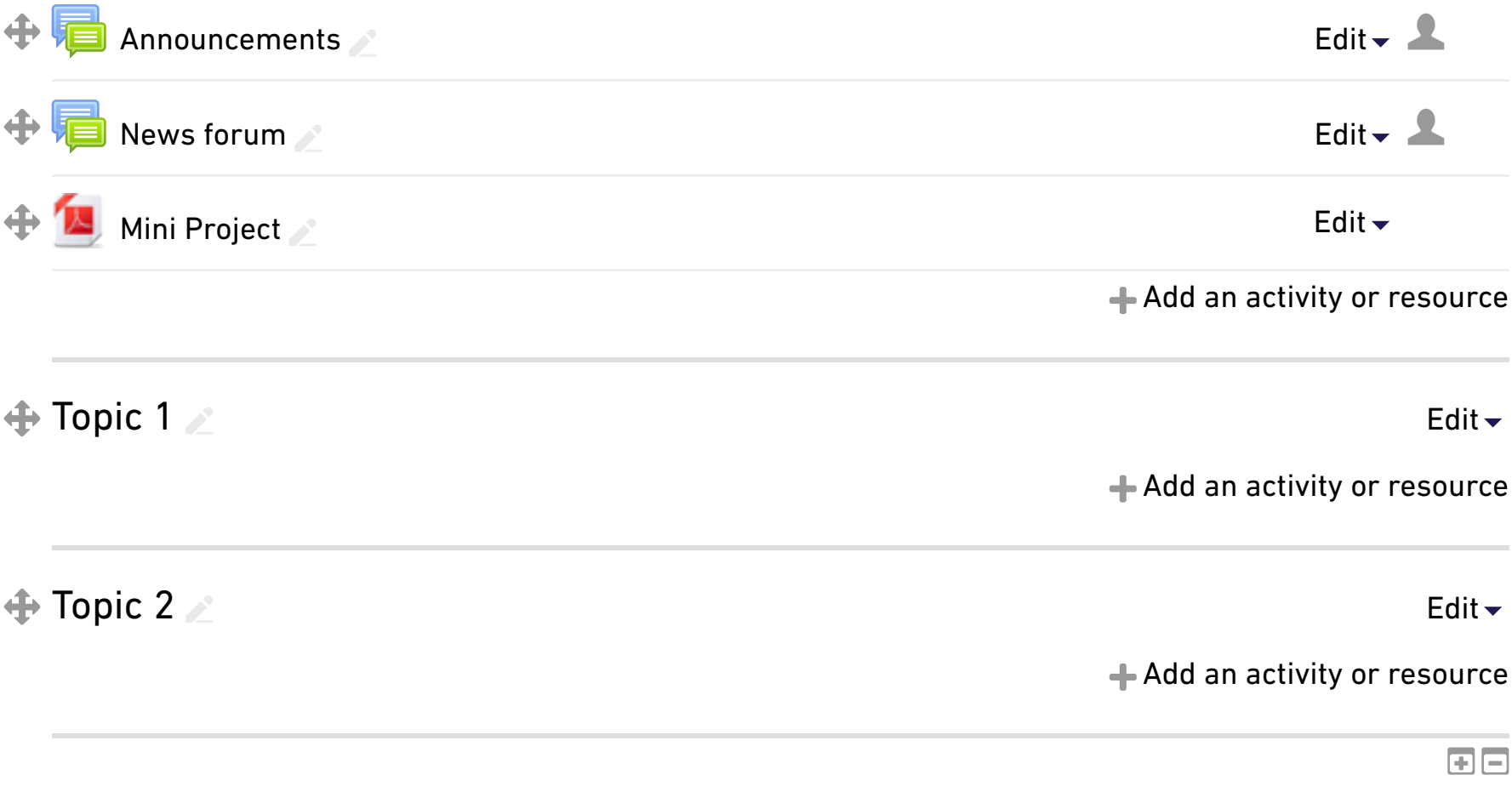
Prerequisites for participation:

Prior experience in imperative and object-oriented programming (e.g., C++ or Java) is required.

Module coordinator:

Markus Löchtefeld, MT

mloc@create.aau.dk



MULTIMEDIA PROGRAMMING (M18, C) (ART_BA)

General

Edit

Instructors:
Markus Löchtefeld and Elizabeth Jochum

Purpose and goals:
The aim of this course is to introduce students to the theoretical and practical aspects of robotic art. The course places equal emphasis on both aesthetic and technical concerns so students can develop competencies in the creation of an aesthetically engaging autonomous art work. Students will learn how to design, program and execute a computer-controlled work of art using models such as random walks, flocking, and Markov chains. Students will also confront issues in planning, coordination, and control that arise when transitioning from computer simulation to the physical world. Students will be provided with robots to experiment with (Lego robots, the Arduino robot and Sphero mobile robot), but are invited to develop their own design or robotic prototypes. Prior experience in imperative and object-oriented programming (e.g., C++ or Java) is required.

Evaluation:
The course grade is determined by the completion of an individual or group-based mini-project incorporating computer-controlled robotics. The mini-project must be accompanied by a written report and oral presentation summarizing the project, method, approach, and conclusions (10 pages maximum).

Hand-in deadline: 5 October 2017, 12:30

(In-Class Presentations of Mini-projects + Written Hand-In)

Robot checkout:
To check out a robot, please make a request to Thomas Kristensen in the ArT lab. You will need to state which robots you would like to check out, the length of time for the loan, and provide evidence that they can stored in a locked container while not being used. Note that you will be held responsible for any lost or damaged items.

Announcements — Edit

News forum — Edit

Mini-Project — Edit

Add an activity or resource

Lecture 1: Robotic Art and Basic Robot Communications

Edit

Lecture with subsequent exercises

Origins and development of robotic art from 20th century-present.

This course provides an overview of robotic art from kinetic sculpture to contemporary robotic art.

Lecturer: Elizabeth Jochum

Sending and receiving messages to and from the Lego robots.
Lecturer(s): Markus Löchtefeld

Exercises:

1) Make the Robot move in a straight line for 1 second and then stop (smoothly).
2) Make the Robot move in a square.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
“History of Robotic Art” (Eduardo Kac) (pdf)	11		
Robotics and Art, Computationalism and Embodiment (Penny) (pdf)	20		

Video:

(6 minutes)

Add an activity or resource

Lecture 2: Language of Motion I

Edit

Lecture with subsequent exercises.

Introduction to the concepts of turtles and random walks as a means for executing basic motions.

TBA

Lecturer: Elizabeth Jochum & Markus Löchtefeld

Assignments: Programming exercises based on session.

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
Random walk - Wikipedia, https://en.wikipedia.org/wiki/Random_walk	1		
Abelson, H. and diSessa, A. A. (1980). Turtle Geometry: The Computer as a Medium for Exploring Mathematics. MIT Press.		3	yes
Braitenberg, V. (1984). Vehicles: Experiments in Synthetic Psychology. MIT Press.		3	yes
Pearson, K. (1905). The problem of the random walk. Nature, 72:294, 318, 342. (Mostly for historical interest)		3	yes

Exercises:

1) Make the Lego Robot move according to a random walk. What other types of random walks can you come up with?
2) Make the Lego Robot move in a circle at 180 degrees/second.
3) Make the Lego Robot move using some combination of a circular motion and random walk.

Code: Sphero circular motion Edit

Code: Sphero random walk Edit

Code: MotionVector.hpp Edit

Code: Sphero ellipse motion Edit

Add an activity or resource

Lecture 3: Language of Motion II Edit

Kinesics, flocking/swarming: What do these behaviors and motions indicate about narrative? What narrative, interactive, or dramaturgical potential can we tap into using these external physical behaviors? This lecture considers the use of flocking and swarming algorithms in robotic art installations.

In-Class Assignment Due: Groups will present their project ideas in class for feedback. 3 minute presentations, 1 slide. Please upload slides here.

Lecturer: Elizabeth Jochum

Required Readings:

A New Kind of Art (Artsbot) (Moura and Pereira) (pdf)
“So You Think You Can Dance” (Schoellig et al.) (pdf)
“Generating Music from Flocking Dynamics” (Hueppe et al.) (pdf)

Reynolds, C. W. (1987). Flocks, herds, and schools: A distributed behavioral model. Computer Graphics, 21(4):25-34. (pdf)

Lecture Notes (pdf)

Videos:
Swarm Wall
Endo/Exo http://vimeo.com/67034781

Further readings:

Heider, F. and Simmel, M. (1944). An experimental study of apparent behavior. The American Journal of Psychology, 57(2):243–259. (pdf)
“endo/exo - Making Art and Music with Distributed Computing” (Correll and Theodore) (pdf)

Code: Flocking example Edit

Code: Flocking example (incomplete done in class) Edit

In-Class Project Pitches (slides) Edit

Add an activity or resource

Lecture 4+5: Markov Chains and DIY Robot Workshop Edit

Composing simple motions with state transition networks (Markov chains). Non-functional animations and simulated interactions.

Additionally we will help you extend your robots for your projects

Lecturers: Markus Löchtefeld and Elizabeth Jochum

Required Readings:

Powell, V. (2014). Markov chains. Accessed from http://setosa.io/blog/2014/07/26/markov-chains/index.html.

"Designing Robots with Motion in Mind" (Hoffman and Ju) (pdf)

"Ontology of Robot Theatre" (Lu) (pdf)

Required Video:

Robots with Soul

"Unlocking the expressivity of point lights" - Chris Harrison et al. CHI 2012

Assignment:

1) Implement a Markov Chain with at least three different states that controls the Sphero's movement.

Code: Markov chain coded in class Edit

Code: Markov chain structure Edit

Markov Chain Edit

Add an activity or resource

Lecture 6. Mid-Term Project Pitch Edit

Lecturers: Markus Löchtefeld and Elizabeth Jochum

Literature

	Pri. lit. no of p.	Sec. lit. no of p.	Dig. upload
"Designing Robots with Motion in Mind" (Hoffman and Ju) (pdf)	32		yes
"The Machine as Autonomous Performer" (Bown et al.) (pdf)	16		yes
Way of the Jitterbug (Norm White) (pdf)	15		yes

Workshop "slides" ;-) Edit

Add an activity or resource

Lecture 7: Art Based Research with Robots Edit

Lecture: In this Lecture we will introduce methods to conduct Art-based Research with robots and how to evaluate your project. We will assist you in designing experimental setups for your projects.

Lecturers: Elizabeth Jochum

Add an activity or resource

Lesson 8. In-class final presentations

Edit

Lecturers: Markus Löchtefeld and Elizabeth Jochum

PROJECT-REPORT (Hand-In) Edit

Add an activity or resource

2. Robot Communications

Edit

Workshop on sending and receiving messages to and from the Lego robots.

Lecturer(s): Markus Löchtefeld

Exercises:

1) Make the Robot move in a straight line for 1 second and then stop (smoothly).
2) Make the Robot move in a square.

Code: Bluetooth library Edit

Sphero developer resources Edit

Sphero Names Edit

Sphero and Bluetooth Notes Edit

Code: Sphero.hpp (v. 0.63) Edit

Code: Sphero color change Edit

Code: Sphero move in line Edit

Code: Sphero data stream Edit

Edit

Code: Sphero calibration GUI

Programming / Processing Introduction Edit

Processing Sphero Example for RaspberryPI Edit

Add an activity or resource