

Curriculum for the Master of Science Programme in Medialogy

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Preface:

Pursuant to Act 367 of May 22, 2013 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's programme in Medialogy is stipulated. The programme also follows the Framework Provisions and the Examination Policies and Procedures for the Faculties of Engineering and Science.



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Chapter 1: Legal Basis of the Curriculum, etc.

1.1 Basis in ministerial orders

The Master's programme in Medialogy is organised in accordance with the Ministry of Science, Innovation and Higher Education's Order no. 1520 of December 16, 2013 on Bachelor's and Master's Programs at Universities (the Ministerial Order of the Study Programs) and Ministerial Order no. 1518 of December 16, 2013 on University Examinations (the Examination Order) with subsequent changes. Further reference is made to Ministerial Order no. 1488 of December 16, 2013 (the Admission Order) and Ministerial Order no. 250 of March 15, 2007 (the Grading Scale Order) with subsequent changes.

1.2 Faculty affiliation

The Master's programme falls under the Faculties of Engineering and Science, Aalborg University.

1.3 Board of Studies affiliation

The Master's programme falls under the Board of Studies for Media Technology.

Chapter 2: Admission, Degree Designation, Programme Duration and Competence Profile

2.1 Admission

Admission to the Master's programme in Medialogy requires a Bachelor's degree in Medialogy or equivalent.

Students with another Bachelor's degree, upon application to the Board of Studies, will be admitted after a specific academic assessment, if the applicant is deemed to have comparable educational prerequisites. The University can stipulate requirements concerning conducting additional exams prior to the start of study.

After the first semester, the programme consists of the general Medialogy line and three specialisations. The student must choose his/her specialization before starting the 2nd semester.

2.2 Degree designation in Danish and English

The Master's programme entitles the graduate to one of the following designations:

- Games specialisation: Cand.scient. i medialogi med specialisering i spil. The English designation is: Master of Science (MSc) in Medialogy with specialisation in Games.
- Interaction specialisation: Cand.scient. i medialogi med specialisering i interaktion. The English designation is: Master of Science (MSc) in Medialogy with specialisation in Interaction.
- Computer graphics: Cand.scient. i medialogi med specialisering i computergrafik. The English designation is: Master of Science (MSc) in Medialogy with specialisation in Computer Graphics.
- Medialogy: Cand.scient. i medialogi. The English designation is: Master of Science (MSc) in Medialogy.

2.3 The programme's specification in ECTS credits

The Master's programme is a 2-year, research-based, full-time study programme. The programme is set to 120 ECTS credits.

2.4 Competence profile on the diploma

The following competence profile will appear on the diploma:

A graduate of the Master's programme has competencies acquired through an educational programme that has taken place in a research environment.

The graduate of the Master's programme can perform highly qualified functions on the labour market on the basis of the educational programme. Moreover, the graduate has prerequisites for research (a Ph.D. programme). Compared to the Bachelor's degree, the graduate of the Master's programme has developed her/his academic knowledge and independence, so that the graduate can independently apply scientific theory and method in both an academic and occupational/professional context.

2.5 Competence profile of the programme

The graduate of the Master's programme:

- Knowledge
- has in-depth **knowledge** and understanding of issues within one of the following areas: medialogy, games, computer graphics, interaction
 - can **understand** and, on a scientific basis, reflect on the technical, organizational and market drivers in the convergence of media technology as well as the interplay between technology, market and user issues
 - can **analyse** the specialization area's knowledge, theory, methodologies and practice, and identify scientific issues
 - can **understand** the importance of innovation, creativity and entrepreneurship for media technology solutions and services
- Skills
- ability to **synthesize** scientific methods, tools and general skills within the field of media technologies
 - ability to **evaluate** and select among relevant scientific theories, methods, tools and general skills and, on a scientific basis, advance new analyses and solutions within the subject areas
 - ability to **synthesize** research-based knowledge and discuss professional and scientific problems with both peers and non-specialists
 - ability to **synthesize** knowledge in scientific writing: articles, reports, documentation, etc.
 - ability to **analyse** and select among relevant theories, technologies and methods for development of media technology solutions and services
 - can **analyse** different technologies for optimal selection
 - can **analyse** the research potential or the market, ethical and regulatory framework for application of the technologies
- Competencies
- ability to **apply** acquired knowledge in research, innovation and entrepreneurship that can be used to explore and exploit the great potential of new media technologies with an engineering approach
 - ability to **synthesize** acquired knowledge creatively and innovatively to identify and propose new opportunities and develop services/solutions, which can empower the users and assist them in solving their current and future tasks on a daily basis
 - ability to **synthesize** project work and problem based learning in a global/multicultural environment
 - ability to **apply** knowledge to independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility
 - ability to **synthesize** knowledge and independently take responsibility for own professional development and specialization
 - **apply** acquired knowledge in mediating collaborations and exchange between development- and business-related functions in organizations

In addition, students should be able to acquire the following specialisation related competencies:

Games

- Must be able to **analyse** previous research related to game technology and/or design
- Must be able to measure, **analyse**, and evaluate the user experience in games or play
- Must be able to **synthesize** acquired knowledge in the design and implementation of a game

Interaction

- Must be able to **analyse** previous research related to interaction technology and/or design
- Must be able to **evaluate** and select relevant theories, methods, and tools related to interaction technologies and design, with the specific aim of working towards creating new products, commercially viable products, or new knowledge

Computer Graphics

- Must be able to **analyse** previous research related to computer graphics
- Must be able to **evaluate** and select relevant computer graphics theories, methods, and tools, and synthesize them to produce new knowledge and solutions

Medialogy

- Must be able to **analyse** previous research related to media technology
- Must be able to **evaluate** and select relevant media technology theories, methods, and tools, and synthesize them to produce new knowledge and solutions

Chapter 3: Content and Organisation of the Programme

In addition to the general Medialogy line, the programme consists of three specialisations:

- Games
- Computer Graphics
- Interaction

To each specialisation belongs a specific project module on each of the four semesters. The choice of project module on the 1st semester, however, has no binding effects on the students' choice of specialisation. Students are required to finalize their choice of specialisation before the beginning of the 2nd semester of the education.

The programme is structured in modules and organised as a problem-based study. A module is a programme element or a group of programme elements, which aims to give students a set of professional skills within a fixed time frame specified in ECTS credits, and concluding with one or more examinations within specific exam periods. Examinations are defined in the curriculum. Each semester has an overall theme, which is reflected in the scope of the (mandatory) course modules and semester projects.

Upon approval by the Study Board for Media Technology a group of students working on a semester project may consist of students from different specialisations within the Master's programme in Medialogy.

The programme is based on a combination of academic, problem-oriented and interdisciplinary approaches and organized based on the following work and evaluation methods that combine skills and reflection:

- lectures
- classroom instruction
- project work
- workshops
- exercises (individually and in groups)
- teacher feedback
- reflection
- portfolio work

3.1 Overview of the programme:

All modules are assessed through individual grading according to the 7-point scale or Pass/Fail. All modules are assessed by external examination (external grading) or internal examination (internal grading) or by assessment by the supervisor or course-responsible only.

An overview of the ECTS credit breakdown for the various semesters by modules is shown in the table form below.

In general, students may choose different options for the 1st, 2nd, 3rd and 4th semester. The thesis project must have a size of at least 30 ECTS, but it is possible to make larger thesis projects of 35, 40, 45, 50, 55 or 60 ECTS, if the thesis project is initiated in the 3rd semester. Depending on the choice, there will be room for 2-3 elective courses on the 3rd semester. The following options may be chosen:

Option 1:

- 3rd semester: 20 ECTS semester project, supplemented by courses
- 4th semester: 30 ECTS thesis project

Option 2:

- 3rd semester: internship in Denmark or abroad, or exchange in Denmark or abroad (in this case the mandatory courses on the 3rd semester may be waived)
- 4th semester: 30 ECTS thesis project

Option 3 (long thesis project):

- A thesis project of 35, 40, 45, 50, 55 or 60 ECTS, extending over 2 semesters, if necessary supplemented by courses on the 3rd semester in order to achieve the required number of ECTS.

3.2 Courses

Semester	Module	ECTS	Assessment	Exam
1st	Sensing Media – Games (elective)	15	7-point scale	Internal
	Sensing Media – Computer Graphics (elective)	15	7-point scale	Internal
	Sensing Media – Interaction (elective)	15	7-point scale	Internal
	Sensing Media (elective)	15	7-point scale	Internal
	Multivariate Statistics and Pattern Recognition	5	7-point scale	Internal
	Multimodal Perception and Cognition	5	7-point scale	Internal
	Choose 1 from the following:			
	Advanced A/V Production	5	Pass/Fail	Internal
	User Experience Design for Multi-modal Interaction	5	Pass/Fail	Internal
	Prototyping and Fabrication Techniques	5	Pass/Fail	Internal

Specialisation in Games:

2 nd	Mediating Reality - Games	15	7-point scale	External
	Foundations in Medialogy	5	7-point scale	Internal
	Choose 2 from the following:			
	Multimedia Programming	5	Pass/Fail	Internal
	Modelling Physical Systems	5	Pass/Fail	Internal
	Embodied Interaction	5	Pass/Fail	Internal
	Narratives in Digital Culture	5	7-point scale	Internal
3 rd	Media Innovation - Games	20	7-point scale	Internal
	Choose 2 from the following:			
	Creative Innovation and Entrepreneurship	5	7-point scale	Internal
	Research in Medialogy	5	7-point scale	Internal
	Elective course	5		
4 th	Master's Thesis	30	7-point scale	External

· Elective courses may include courses offered by the Study Board for Media Technology or by other study boards at Aalborg University. The list of approved elective courses is maintained by the Study Board for Media Technology. Students who wish to follow courses not included in the list of approved elective courses, must apply in writing for approval to the Study Board for Media Technology.

Specialisation in Computer Graphics

2 nd	Mediating Reality – Computer Graphics	15	7-point scale	External
	Foundations in Medialogy	5	7-point scale	Internal
	Choose 2 from the following:			
	Multimedia Programming	5	Pass/Fail	Internal
	Modelling Physical Systems	5	Pass/Fail	Internal
	Embodied Interaction	5	Pass/Fail	Internal
	Narratives in Digital Culture	5	7-point scale	Internal
3 rd	Media Innovation – Computer Graphics	20	7-point scale	Internal
	Choose 2 from the following:			
	Creative Innovation and Entrepreneurship	5	7-point scale	Internal
	Research in Medialogy	5	7-point scale	Internal
	Elective course	5		
4 th	Master's Thesis	30	7-point scale	External

Specialisation in Interaction

2 nd	Mediating Reality - Interaction	15	7-point scale	External
	Foundations in Medialogy	5	7-point scale	Internal
	Choose 2 from the following:			
	Multimedia Programming	5	Pass/Fail	Internal
	Modelling Physical Systems	5	Pass/Fail	Internal
	Embodied Interaction	5	Pass/Fail	Internal
	Narratives in Digital Culture	5	7-point scale	Internal
3 rd	Media Innovation - Interaction	20	7-point scale	Internal
	Choose 2 from the following:			
	Creative Innovation and Entrepreneurship	5	7-point scale	Internal
	Research in Medialogy	5	7-point scale	Internal
	Elective course	5		
4 th	Master's Thesis	30	7-point scale	External

· Elective courses may include courses offered by the Study Board for Media Technology or by other study boards at Aalborg University. The list of approved elective courses is maintained by the Study Board for Media Technology. Students who wish to follow courses not included in the list of approved elective courses, must apply in writing for approval to the Study Board for Media Technology.

Medialogy without specialisation

2 nd	Mediating Reality	15	7-point scale	External
	Foundations in Medialogy	5	7-point scale	Internal
	Choose 2 from the following:			
	Multimedia Programming	5	Pass/Fail	Internal
	Modelling Physical Systems	5	Pass/Fail	Internal
	Embodied Interaction	5	Pass/Fail	Internal
	Narratives in Digital Culture	5	7-point scale	Internal
3 rd	Media Innovation	20	7-point scale	Internal
	Choose 2 from the following:			
	Creative Innovation and Entrepreneurship	5	7-point scale	Internal
	Research in Medialogy	5	7-point scale	Internal
	Elective course	5		
4 th	Master's Thesis	30	7-point scale	External

· Elective courses may include courses offered by the Study Board for Media Technology or by other study boards at Aalborg University. The list of approved elective courses is maintained by the Study Board for Media Technology. Students who wish to follow courses not included in the list of approved elective courses, must apply in writing for approval to the Study Board for Media Technology.

Semester project
Sensing Media - Games
(Sansning af medier - spil)

Workload: 15 ECTS, consisting of project work
Semester: 1st semester

Prerequisites: BSc in Medialogy or equivalent

Objectives:

Investigate the chosen specialization from a formal perspective, with a focus on one or more of the following: 1) exploiting the possibilities and/or limitations offered by the perceptual system, 2) exploring the functioning of a particular cognitive process, 3) constructing an application or a part of an application in the chosen specialization, or 4) analyzing and evaluating the developed application demonstrating how it supports, relies on, or exploits specific modalities or features of the perceptual system.

Additionally, students are required to work according to a scientific method and to report results in scientific forms, such as papers and posters.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** game design principles
- Must be able to **understand** central issues related to the human perceptual system (including sensation, perception and cognition)

Skills:

- Must be able to measure, **analyse**, and evaluate the user experience in games or play

Competencies:

- Must be able to **apply** an understanding of the possibilities and limitations of the human perceptual system to the evaluation of a game or playware
- Must be able to communicate, discuss, and **evaluate** research-based knowledge in the area of games and playware in the formats of a scientific paper and a poster, and in the format of a 15 minute conference presentation

Type of instruction:

Academically supervised student-governed problem oriented project work

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral exam with an internal censor based on a scientific paper written in English and a media-technological product, an AVproduction illustrating and summarizing the project, a poster in English, and edited worksheets/portfolio documenting project details.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project
Sensing Media - Computer Graphics
(Sansning af medier - computergrafik)

Workload: 15 ECTS, consisting of project work
Semester: 1st semester

Prerequisites: BSc in Medialogy or equivalent

Objectives:

Investigate the chosen specialization from a formal perspective, with a focus on one or more of the following: 1) exploiting the possibilities and/or limitations offered by the perceptual system, 2) exploring the functioning of a particular cognitive process, 3) constructing an application or a part of an application in the chosen specialization, or 4) analyzing and evaluating the developed application demonstrating how it supports, relies on, or exploits specific modalities or features of the perceptual system.

Additionally, students are required to work according to a scientific method and to report results in scientific forms, such as papers and posters.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** the core elements in computer graphics in terms of 3D geometry modelling and representation, surface material properties, and illumination conditions and relevant models for these
- Must be able to **understand** the principles in real-time (accelerated) and/or non-real-time (ray traced) computer graphics
- Must be able to **understand** central issues relating to the human visual system (sensation, perception and cognition)

Skills:

- Must be able to **apply** a graphics API such as OpenGL, a rendering package, or a game engine to design and implement a system which uses computer graphics as output modality

Competencies:

- Must be able to **apply** an understanding of the affordances and the limitations in the human visual system in the design of a computer graphics based solution, or in the evaluation of such a system
- Must be able to **synthesize** relevant computer graphics theory, techniques and tools to produce new knowledge and/or solutions
- Must be able to communicate, discuss and **evaluate** research-based knowledge in the area of 3D computer graphics in the formats of a scientific paper and a poster, and in the format of a 15 minute conference presentation

Type of instruction:

Academically supervised student-governed problem oriented project work

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral exam with an internal censor based on a scientific paper written in English and a media-technological product, an AVproduction illustrating and summarizing the project, a poster in English, and edited worksheets/portfolio documenting project details.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project
Sensing Media - Interaction
(Sansning af medier - interaktion)

Workload: 15 ECTS, consisting of project work
Semester: 1st semester

Prerequisites: BSc in Medialogy or equivalent

Objectives:

Investigate the chosen specialisation from a formal perspective, with a focus on one or more of the following: 1) exploiting the possibilities and/or limitations offered by the perceptual system, 2) exploring the functioning of a particular cognitive process, 3) constructing an application or a part of an application in the chosen specialisation, or 4) analyzing and evaluating the developed application demonstrating how it supports, relies on, or exploits specific modalities or features of the perceptual system.

Additionally, students are required to work according to a scientific method and to report results in scientific forms, such as papers and posters.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** the core elements in human centred interaction, such as design methodologies, multimodal input recognition and interpretation, multimodal output generation and synchronisation, etc.
- Must be able to **understand** and distinguish participatory and ethnographic design approaches
- Must be able to **understand** and distinguish between methods for assessing the quality of a design solution
- Must be able to **analyse** central issues relating to human perception and cognition and their relevance for interaction design

Skills:

- Must be able to **analyse** and compare the state of the art in human centred interaction design
- Must be able to **apply** participatory or ethnographic design approaches
- Must be able to **apply** scientific methods for assessing the quality of their design solution
- Must be able to **synthesize** an interactive system based on a design solution
- Must be able to **analyse** the feasibility of the proposed solution in terms of cost/benefit and social impact

Competencies:

- Must be able to **analyse** a real world problem, design a solution and translate it into a human centred interactive system
- Must be able to compare and **analyse** the potential of different technologies, methods, and approaches in order to make the proper design choices for optimal functionality
- Must be able to **analyse** the ethical perspective of human centred systems

Must be able to **analyse** research-based knowledge in the area of interaction design in the formats of a scientific paper and a poster as well as a 15 minute conference presentation

Type of instruction:

Academically supervised student-governed problem oriented project work

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral exam with an internal censor based on a scientific paper written in English and a media-technological product, an AVproduction illustrating and summarizing the project, a poster in English, and edited worksheets/portfolio documenting project details.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project
Sensing Media
(Sansning af medier)

Workload: 15 ECTS, consisting of project work
Semester: 1st semester

Prerequisites: BSc in Medialogy or equivalent

Objectives:

Investigate the chosen specialisation from a formal perspective, with a focus on one or more of the following: 1) exploiting the possibilities and/or limitations offered by the perceptual system, 2) exploring the functioning of a particular cognitive process, 3) constructing an application or a part of an application in the chosen specialisation, or 4) analyzing and evaluating the developed application demonstrating how it supports, relies on, or exploits specific modalities or features of the perceptual system.

Additionally, students are required to work according to a scientific method and to report results in scientific forms, such as papers and posters.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** the core elements in technology integration and media convergence in interactive multimodal systems in terms of hardware, software, electronics, networking, wired and wireless possibilities
- Must be able to **apply** the principles for creating, coding, manipulating and/or combining digital contents in different modalities
- Must be able to **understand** methods for assessing the different means by which a user might interact with content to create novel and engaging experiences
- Must be able to **apply** central issues relating to human perception and cognition in the interaction with content in multimodal systems

Skills:

- Must be able to **synthesize** different technological components into a unified working multimodal system that accomplishes a specific function
- Must be able to design, create and **synthesize** content in multimodal systems
- Must be able to **apply** scientific methods for assessing experience and human response to content in a particular multimodal interactive system

Competencies:

- Must be able to methodically identify and **analyse** state of the art technology and trends
- Must be able to **synthesize** emerging technologies into innovative systems
- Must be able to plan, design and **synthesize** content with a clearly defined objective and with a specific or coherent function
- Must be able to **analyse** the social and cultural implications of the integrated system and the content mediated

- Must be able to communicate and **analyse** research-based knowledge in the area of digital content and technology convergence, in the formats of a scientific paper and a poster, and in the format of a 15 minute conference presentation

Type of instruction:

Academically supervised student-governed problem oriented project work

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral exam with an internal censor based on a scientific paper written in English and a media-technological product, an AVproduction illustrating and summarizing the project, a poster in English, and edited worksheets/portfolio documenting project details.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Title:**Multivariate Statistics and Pattern Recognition**

(Multivariat statistik og mønstergenkendelse)

Size: 5 ECTS**Prerequisites:** BSc in Medialogy or equivalent**Objectives:**

When designing and developing interactive media systems and technology, one is often faced with looking for interesting patterns and trends in data of several dimensions, what is called 'multivariate data.' This course presents theoretical concepts and practical tools for analyzing multivariate data and designing pattern recognition methods for multimedia applications. Many of these methods are used in, e.g., automatic speech recognition, face detection, web page ranking, etc. The course includes the following topics: multivariate probability density functions, Bayesian estimation and detection, Gaussian model, parameter estimation, assessment of classifiers and estimators, data fitting, supervised and unsupervised learning, parametric and non-parametric learning, feature selection and reduction, and clustering.

Students who complete the course module will obtain the following qualifications:

Knowledge:

- **Understand** multivariate statistics and describe how to model multivariate data, e.g., using probabilistic and parametric descriptions
- **Understand** Bayesian classification
- **Understand** supervised and non-supervised learning methods, e.g., k-means clustering, principal component analysis, nearest neighbor
- **Understand** features and the process of feature extraction from data

Skills:

- Choose, implement and **apply** pattern recognition tools to solve classification problems, e.g., footstep detection from accelerometers, recognition of single spoken digits
- **Apply** knowledge to compare classification methods in terms of performance and complexity
- **Apply** theory of multivariate statistics and **analyse** multimedia data, e.g., speech and music, images of faces, etc.

Competencies:

- **Analyse** a problem in your field in the context of multivariate statistics and pattern recognition, and reflect on a variety of possibilities to recommend a solution
- **Analyse** features for this problem
Implement and **evaluate** a classifier for this problem, and discuss and generalize the results

Type of instruction:

Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral or written examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Title:
Multimodal Perception and Cognition
(Multimodal perception og kognition)

Size: 5 ECTS

Prerequisites: BSc in Medialogy or equivalent

Objectives:

In interactive-immersive systems that rely on digital technology, human interactivity and responsiveness are directly linked to the processes of human perception and cognition.

This course introduces current research trends and emerging paradigms on the relation between digital technologies and multi-modal perception and cognition. Particular emphasis is put on multi-modal perception processes that are usually involved in interactive digital media (e.g., visual, auditory, haptic, proprioception) and higher cognitive processes related to interactivity (e.g. multimodal integration, enaction, intelligibility, cognitive closure, affective states and emotions, spatial cognition and navigation).

The course draws relevant knowledge from a variety of disciplines and fields such as cognitive neuroscience, ecological psychology, biology, cognitive ergonomics and cognitive technologies. Different bio-behavioral and biofeedback methods for interaction design and assessment are also introduced (e.g. EEG, EMG, ECG, galvanic skin response, ocular measures) and new trends in integration of interactive digital technologies with cognitive processes are addressed (e.g. multi-modal interfaces and set-ups, brain-computer-interfaces, enactive interfaces). Finally, the course provides the opportunity for targeting the knowledge provided towards the specialization profile chosen by the student (Computer graphics, Interaction, Games).

A student who completes the course module will obtain the following qualifications:

Knowledge:

- **Understanding** of the main paradigms, concepts and disciplines that contribute to multimodal perception research and cognition studies and which have relevance for the interaction of human subjects with immersive-interactive systems
- **Knowledge** about the potentialities and limits that the human “perceptual apparatus” and the cognitive system present for the technology designer
- **Understanding** of the relations between multimodal perception, higher cognitive functions, affective states and action

Skills:

- Ability to **apply** knowledge on human multimodal perception and cognition in the design of interactive digital systems
- Ability to **apply** knowledge to the design perception and cognition tests related to the cross-modal action of two or more senses
- Be able to **apply** biofeedback and bio-behavioral measurements in experimental designs

Competencies:

- Ability to **synthesize** knowledge and theoretical frameworks from a variety of relevant sources and disciplines, which contribute to the study of technology-cognition interaction
- Be able to **synthesize** such knowledge in the design of multimodal interactive systems
- Ability to **analyze** and interpret experimental work and literature in the field

Type of instruction:

Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral or written examination with internal censor. The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Title:

Advanced A/V Production
(Avanceret A/V-produktion)

Size: 5 ECTS

Prerequisites: BSc in Medialogy or equivalent

Objectives:

Students who complete the course module will obtain the following qualifications:

Knowledge:

- **Understanding** of concept- and iterative format development
- **Understanding** the dramatic premise as the basis of the three-act paradigm
- **Understanding** of the elements of propulsion within fiction: conflicts, obstacles, complications, expectations, foretellings, tests, timelimits, suspense, surprise, and changes
- **Understanding** of the elements of propulsion within entertainment formats: competition, assignment, challenge, randomizer, the vote and the unexpected visitor
- **Understanding** of AV-production management concepts and tools – and the application of such
- **Understanding** and application of various advanced lighting setups including greenscreen lighting
- **Understanding** the effects of combining multicam and singlecam within fictional and factual programming

Skills:

- Ability to **analyse** and methodically produce and analyse productions that feature more than one shot shown simultaneously
- Ability to **analyse** and choose the means of expression that manage the audience's perception in multishot productions
- Ability to **analyse** and edit factual material and combine it with fictioncodes
- Ability to discuss and **analyse** three different editing methods: the formalists' five methods of montage, the valuebased Rule of Six and the Kuleshov effect
- Ability to **analyse** advanced lighting set-ups combining hard light, soft light and eye light
- Ability to **analyse** and methodically produce using POV and POA
- Ability to **analyse** methodical uses of long takes
- Ability to **analyse** and methodically produce greenscreen shots on pre-produced material

Competencies:

- Must be able to **apply** the general framework of advanced A/V-production in new contexts. This includes choosing the relevant methods and the ability to evaluate the output
- Must be able to **synthesize** the different means of expression and understand the resulting effect they have on the audio-visual entity

Type of instruction:

Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are

decided and given by the Study Board for Media Technology.

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

To be eligible to take the exam the student must have fulfilled:

- handing in of written assignments or the like
- completion of certain – or all – study activities

Note that if admittance to the exam or parts of the assessment is to be based on written work or exercises, a deadline is stipulated for when the work must be handed in. If the student hands in a paper/exercises after the deadline, the student has used an examination attempt.

The exam: Oral or written examination with internal censor. The assessment is performed with the Pass/Non-Pass grade.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

<p>Title: User Experience Design for Multi-modal Interaction Design af brugeroplevelsen for multi modal interaktion</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: BSc in Medialogy or equivalent</p>
<p>Objectives: This course trains students to research, analyse, prototype and conceptualise design considering all system aspects including the social and cultural contexts of use. The course gives a comprehensive knowledge about user involvement in the design process going beyond traditional methods such as usability lab testing. The course introduces students to the application of multi modal methods and interaction design within contemporary fields such as, for example, surface computing, pervasive computing, social and mobile computing, and/or mundane computing. The objectives are realised by presenting methods and tools in a case based framework and through the students' active participation in workshops and assignments.</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Must have knowledge about system design methods including the social and cultural contexts of use • Must have knowledge of ethnographic study methods for user behaviour research • Must have knowledge about qualitative research methods involving end users in the field, such as interview techniques, analysis and experience sampling • Must have knowledge about scenario-based design methods • Must have knowledge about principles for multi modal interaction design <p>Skills:</p> <ul style="list-style-type: none"> • Must be able to apply the taught methods to solve concrete design problems. • Must be able to evaluate and compare and apply the methods for a specific design problem • Must be able to apply knowledge to facilitate the design process involving users in real-life contexts <p>Competencies:</p> <ul style="list-style-type: none"> • Students will acquire the competencies to decide how to choose the appropriate method to suit different dimensions of a design problem at different stages in the process and the pitfalls of each approach • Must have competencies in understanding the strengths and weaknesses of the methods • Must have the competencies to facilitate the design process involving users in context
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Oral or written examination with internal censor. The assessment is performed with the Pass/Non-</p>

Pass grade.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Title:**Prototyping and Fabrication Techniques**

(Prototyping og fremstillingsteknikker)

Size: 5 ECTS**Prerequisites:** BSc in Medialogy or equivalent**Objectives:**

In order to be part of a leading design team, it is essential to be able to develop and communicate new interaction design concepts for the implementation and production of future electronic devices. The course rationale is that students need to have an understanding of physical interaction design processes, where ideas are formed, developed and tested in proof-of-concept models that can be demonstrated to others via video, poster presentations, and working prototypes. The focus is on understanding and applying design and development strategies needed to move from concept to working prototype, with the most recent tools and techniques for producing new forms, input/output from computers and embedded systems, and interactive systems and devices. The course incorporates advanced fabrication techniques; students should be able to build a prototype for any concept they can imagine. By incorporating computer-assisted industrial and electronic design techniques, knowledge about specific design tools and procedures is gained. In order to be able to apply this knowledge, a thorough understanding of the many underlying concepts is required.

Students who complete the module must acquire the following knowledge, skills and competences:

Knowledge:

- The student must have **knowledge** about various approaches to Concept Design methodologies
- The student must have **knowledge** about standard methods and techniques for prototyping of new devices and systems
- The student must be able to **understand** the relationship between concept development and implementation/fabrication, specifically regarding research-based prototyping techniques

Skills:

- The student must be able to **apply** concept design methods and prototyping techniques to real world scenarios involving fabrication of objects or systems with intended functionalities (e.g. responsive environments, interactive games, robots, musical interfaces, public installations, etc.) Specific skills to be gained by the student may include many of the following:
 - **Knowledge** of concept development techniques
 - **Knowledge** of modelling and design tools
 - **Knowledge** of rapid prototyping techniques
 - **Understanding** advanced microcontroller programming
 - **Understanding** sensors, actuators, and displays
 - **Understanding** wired and wireless communication protocols
 - **Understanding** 3D input devices and haptics
 - **Understanding** iterative development (redesign/polish of product)
 - **Understanding** circuit design (schematic to printed circuit board)
 - **Understanding** Field Programmable Gate Arrays

Competencies:

- The student must be able to **analyse** a problem, design a solution and translate it into an

rapid prototyping design

- The student must be able to **analyse** his/her solutions in order to compare and assess the potential of different concept design methods and prototyping techniques, iteratively making the proper design choices
- The student must be able to **synthesize** results and concepts in a professional way equivalent to practices in both academic and industrial contexts

Type of instruction:

The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral or written examination with internal censor. The assessment is performed with the Pass/Non-Pass grade.

Evaluation criteria: Are stated in the Framework Provisions.

Semester project:

Mediating Reality - Games

(Mediering af virkeligheden - spil)

Workload: 15 ECTS, consisting of project work

Semester: 2nd semester

Prerequisites:

1st semester or similar

Objectives:

Explore the chosen specialisation from a formal perspective with a focus on exploring the relationships between real and artificially generated stimuli. Develop and evaluate an application in the chosen specialisation investigating this issue in terms of either: 1) emulating reality, 2) enhancing reality or virtuality, or 3) transforming reality into novel forms of expression and aesthetics.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge

- Must be able to **understand** game development and the evaluation of user experience in games
- Must be able to **understand** and compare game design theories, principles and methods

Skills

- Must be able to **analyse** games, gameplay, and game mechanics according to game design theories
- Must be able to **apply** game design theories, principles and methods to design new games and interactive entertainment

Competencies

- Must be able to **analyse** and plan new game-related development projects by applying knowledge about game design and game development

Type of instruction:

Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral examination with external censor based on a written project report and a media-technological product plus an A/V production that illustrates and summarizes the project.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:

Mediating Reality - Computer Graphics
(Mediering af virkeligheden - computergrafik)

Workload: 15 ECTS, consisting of project work

Semester: 2nd semester

Prerequisites:

1st semester or similar

Objectives:

Explore the chosen specialisation from a formal perspective with a focus on exploring the relationships between real and artificially generated stimuli. Develop and evaluate an application in the chosen specialisation investigating this issue in terms of either: 1) emulating reality, 2) enhancing reality or virtuality, or 3) transforming reality into novel forms of expression and aesthetics.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge

- Must be able to **understand** core elements in computer graphics in terms of fundamental radiometric/photometric concepts, and advanced modelling and animation techniques
- Must be able to **understand** principles of modelling and animation of 3D computer graphics content
- Must be able to **understand** how some of the models applied in computer graphics relate to the real physical world

Skills

- Must be able to **apply** computer graphics related concepts, tools, and technologies to create products with a conscious and purposive relation to applicable concepts and phenomena of the real world

Competencies

- Must be able to **evaluate** and select relevant computer graphics theories, methods, and tools, and synthesize them to produce new knowledge and solutions

Type of instruction:

Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral examination with external censor based on a written project report and a media-technological product plus an A/V production that illustrates and summarizes the project.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:

Mediating Reality - Interaction

(Mediering af virkeligheden - interaktion)

Workload: 15 ECTS, consisting of project work

Semester: 2nd semester

Prerequisites:

1st semester or similar

Objectives:

Explore the chosen specialisation from a formal perspective with a focus on exploring the relationships between real and artificially generated stimuli. Develop and evaluate an application in the chosen specialisation investigating this issue in terms of either: 1) emulating reality, 2) enhancing reality or virtuality, or 3) transforming reality into novel forms of expression and aesthetics.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge

- Must be able to **understand**, describe and distinguish between core elements in sensor technology and mapping of information
- Must be able to **understand** parameters for technology mediated interaction and interactions in public social environments
- Must be able to **understand** fundamentals of embodied interaction and physical interface design

Skills

- Must be able to **analyse** and compare the state of the art in tangible and embodied interaction
- Must be able to **apply** scientific methods for assessing the quality of their solution
- Must be able to **apply** knowledge to the design and implement spatial interactive installations and embodied and/or interactive artifacts
- Must be able to **synthesize** state of the art sensor technologies
- Must be able to **evaluate** the feasibility of their solution in terms of cost/benefit and social impact

Competencies

- Must be able to compare, select and **analyse** relevant sensor technologies
- Must be able to evaluate and **apply** signal processing methods
- Must be able to **synthesize** knowledge in various forms of scientific documentation
- Must be able to **evaluate** ethical consideration of applying advanced sensor technologies

Type of instruction:

Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral examination with external censor based on a written project report and a media-technological product plus an A/V production that illustrates and summarizes the project.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:

Mediating Reality

(Mediering af virkeligheden)

Workload: 15 ECTS, consisting of project work

Semester: 2nd semester

Prerequisites:

1st semester or similar

Objectives:

Explore the chosen specialisation from a formal perspective with a focus on exploring the relationships between real and artificially generated stimuli. Develop and evaluate an application in the chosen specialisation investigating this issue in terms of either: 1) emulating reality, 2) enhancing reality or virtuality, or 3) transforming reality into novel forms of expression and aesthetics.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge

- Must be able to **understand** core elements in current and emerging immersive-interactive technology systems (e.g., mobile devices and platforms, augmented reality, game consoles, affective computing, multimodal systems, virtual reality, ambient intelligence, etc.)
- Must be able to **analyse** the principles and challenges behind the design and integration of such systems
- Must be able to **understand** how to produce and/or implement digital content and assets in such systems
- Must be able to **understand** on the concepts behind virtuality (i.e.: mixed, augmented, virtual, simulated and fictional worlds) in the process of delivering content in such systems and platforms

Skills

- Must be able to **synthesize** emerging paradigms, concepts, theories, tools, and technologies to create products with a conscious and purposive relation to applicable concepts and phenomena of the real world

Competencies

- Must be able to **evaluate** and select relevant strategies, methods and theories for integrating immersive-interactive systems and synthesize them to produce new knowledge and solutions
- Must be able to **synthesize** considerations of sustainability, social responsibility and ethical dimensions in the design of such systems

Type of instruction:

Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral examination with external censor based on a written project report and a media-technological product plus an A/V production that illustrates and summarizes the project.

The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

<p>Title: Foundations in Medialogy (Foundations in Medialogy)</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: 1st semester or equivalent</p>
<p>Objectives: The goal of this course is to provide the foundations necessary to perform advanced work in the student-selected specialization in the 9th and 10th semesters. Students explore state of the art theories and techniques in a formalized manner by analyzing a selection of research texts fundamental to the specialization through, e.g., critical annotations, paper presentations, reproduction of experiments, etc.</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Must be able to understand theories and principles related to the chosen specialization. <p>Skills:</p> <ul style="list-style-type: none"> • Must be able to analyse research topics in the chosen specialization • Must be able to analyse research papers related to the chosen specialization • Must be able to apply concepts, tools, theories and technologies of the chosen specialization to address a specific research problem <p>Competencies:</p> <ul style="list-style-type: none"> • Must be able to critically evaluate the developed application, and explain its relevance in science and society
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Oral or written examination with internal censor. The assessment is performed in accordance with the 7-point scale.</p>
<p>Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.</p>

<p>Title: Multimedia Programming (Multimedieprogrammering)</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: 1st semester or equivalent</p>
<p>Objectives: The goal of this course is to strengthen a student's capacity to participate in 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.</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Understand advanced topics of software development relevant to the design and implementation of multimedia software applications, e.g., software design patterns, multi-threaded programming, real-time programming, advanced UML, GPU programming, programming mobile devices and other embedded systems, network programming, graphics, VR and AR programming <p>Skills:</p> <ul style="list-style-type: none"> • ability to apply a variety of intermediate and advanced software technologies, techniques and methods in the construction of effective and efficient multimedia software applications <p>Competencies:</p> <ul style="list-style-type: none"> • ability to analyse multimedia software engineering problems and select, apply and evaluate appropriate technologies in developing successful solutions • ability to synthesize advanced concepts in multimedia programming and software engineering
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Oral or written examination with internal censor. The assessment is performed with the Pass/Non-Pass grade.</p>
<p>Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.</p>

<p>Title: Modelling Physical Systems Modellering af fysiske systemer</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: BSc in Medialogy or equivalent</p>
<p>Objectives: The module gives an in-depth introduction to modelling of physical systems and the analogies between dynamics systems such as mechanical, hydraulic, electronic, and acoustic systems. Constructing and modelling physical systems requires an understanding of basic kinematics and kinetics. In turn, models of dynamic systems have analogies that can be described by the same underlying mathematics. Students who complete this module will understand the basics of mechatronic systems and the analogy between various dynamic systems.</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Must have knowledge about the kinematics of particles • Must have knowledge about the kinetics of particles • Must be able to understand the analogy between various dynamic systems, i.e. electronic, mechanical and hydraulic systems • Must be able to understand how to model the kinematics and kinetics of simple mechanical systems <p>Skills</p> <ul style="list-style-type: none"> • Must be able to apply knowledge to the creation of free body diagrams of dynamic systems • Must be able to understand how to calculate and model forces of dynamic systems • Must be able to select and apply methods for modelling the analogy between various dynamic systems i.e. electronic, mechanical and hydraulic systems <p>Competencies</p> <ul style="list-style-type: none"> • Must be able to understand how to collaborate within teams designing, building and modelling physical artefacts • Must be able to synthesize methods for modelling of physical systems and analogies between various dynamic systems such as electronic and hydraulic systems
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Oral or written examination with internal censor. The assessment is performed with the Pass/Non-Pass grade.</p>
<p>Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.</p>

<p>Title: Embodied Interaction (Embodied interaction)</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: BSc in Medialogy or equivalent</p>
<p>Objectives: The module focuses on intelligent systems with a strong focus on embodied interaction and current research trends in intelligent agent technology. Thus, the lectures consists of two parts: (i) Introduction to AI methodology and techniques, (ii) application in embodied interaction. The AI part will introduce standards for knowledge representation, search algorithms, decision making and learning as well as fundamentals of intelligent agents. In the second part these methods and techniques are applied in the area of embodied interaction focusing on affective computing, behaviour modelling, social interaction, interactive storytelling as well as cooperation and collaboration.</p> <p>Students who complete the module must acquire the following knowledge, skills and competences:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Must have knowledge about standard methods and techniques in AI • Must have knowledge about modelling intelligent behaviour in embodied interactions • Must be able to understand the relationship between AI techniques and the design and implementation of intelligent embodied interactions <p>Skills:</p> <ul style="list-style-type: none"> • Must be able to apply methods and techniques to real world scenarios (e.g., games, robots, public installations, etc.) <p>Competencies:</p> <ul style="list-style-type: none"> • Must be able to analyse a problem, design a solution and translate it into an intelligent embodied system • Must be able to analyse, compare and assess the potential of different methods and techniques in order to make the proper design choices • Must be able to synthesize results and concepts in a professional way equivalent to practices in AI and Embodied Interaction
<p>Type of instruction: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:</p> <p>To be eligible to take the exam the student must have fulfilled:</p> <ul style="list-style-type: none"> • handing in of written assignments or the like • completion of certain – or all – study activities <p>Note that if admittance to the exam or parts of the assessment is to be based on written work or exercises, a deadline is stipulated for when the work must be handed in. If the student hands in papers/exercises after the deadline, the student has used an examination attempt.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination</p>

from the Study Board for Media Technology:

Oral or written examination with internal censor. The assessment is performed with the Pass/Non-Pass grade.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Title:**Narratives in Digital Culture**

(Narrativer i digital kultur)

Size: 5 ECTS**Prerequisites:** BSc in Medialogy or equivalent**Objectives:**

The digital revolution is having a great impact on cultural processes and society. Innovation runs at a high speed and there is a constant emergence of new paradigms and futuristic ideas for new developments and applications.

In this course students will have the opportunity to place their own work in the historical perspective of these developments, so they can effectively monitor and interpret current and future trends. Analytical tools are provided from a variety of disciplines in order to be on top of such rapid evolution in the field. Working with examples from, for instance, games, edutainment, performing arts, interactive storytelling, virtual reality, social media, and art installations, and by establishing comparisons with a wide range of media and art forms, students also learn how to work with, evaluate and design narrative structures as a key element for reconciling the interplay between immersion, engagement and interactivity in different creative applications.

Furthermore, the students also acquire knowledge on how to combine elements of persuasive communication and aesthetics in order to optimize the relation between content and convergent media technology. A final important objective of the course is to explore the dimensions of sustainability and social responsibility in interactive media technology.

A student who completes the course module will obtain the following qualifications:

Knowledge:

- **Understanding** of the advent of digital culture in contemporary society
- **Knowledge** about new emerging and innovative technological paradigms
- **Understanding** about the social implications and the cultural context of interactive media technology and familiarity with the main academic disciplines that study digital culture
- **Understanding** of the importance and design implications of narrative structures in different applications of immersive and interactive media
- **Knowledge** about new methodologies for non-linear interactive narrative and immersive story-telling.
- Broad understanding of the concepts behind virtuality (i.e. virtual, simulated and fictional worlds)
- **Knowledge** about a sustainability and ethical perspective of digital culture
- **Knowledge** about the cultural and creative industries

Skills:

- Be able to **synthesize** knowledge from a variety of academic disciplines such as anthropology, cultural studies, cybernetics, semiotics and economics to comprehend the cultural and social processes that originate with the development and expansion of new interactive, immersive and representational digital media
- Ability to **analyse** technologies in order to predict new trends of technological convergence and engage in innovative design
- Be able to **analyse** the trade-offs between immersion and interactivity in new digital

systems as compared to other media and artistic forms

- Be able to **analyse** the specificities of cultural products and services based on digital media
- Be able to **synthesize** a rhetoric strategy and the aesthetic choices in the design of user experience in immersive and interactive applications

Competencies:

- Be able to **synthesize** new fields of application for interactive, immersive and/or representational digital media
- Be able to **synthesize** case studies on particular current, emerging or future trends in the field.
- Be able to **synthesize** different theoretical perspectives and frameworks to contemplate user experience in narrative-based immersive and interactive applications
- Be able to **analyse** and characterize such emerging and future trends in terms of its contextual aspects and socio-cultural implications

Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral or written examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:

Media Innovation - Games

(Medie-innovation - spil)

Workload: 20 ECTS

Semester: 3rd semester

Prerequisites:

2nd semester or equivalent

Objectives:

Develop and evaluate a novel system that uses concepts and technologies in the chosen specialisation with a focus on exploring 1) its commercial aspects, and/or 2) its socio-cultural implications, and/or 3) its use in generating scientific knowledge.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** game design theories, principles, and methods that have been applied in the project
- Must be able to **synthesize** relevant concepts in media commercialization and innovation

Skills:

- Must be able to **apply** market and trend analysis methods to a media product or production with game elements
- Must be able to **apply** game-related tools and technologies to create products that are viable from a commercial, socio-cultural, and/or scientific perspective

Competencies:

- Must be able to **evaluate** and select relevant game design theories, methods, and tools, with the specific aim of working towards creating new products, commercially viable products, or new knowledge

Type of instruction: Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral examination with internal censor based on a written project report and a media-technological product plus an A/V-production that illustrates and summarizes the project. The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:

Media Innovation - Computer Graphics

(Medie-innovation - computergrafik)

Workload: 20 ECTS

Semester: 3rd semester

Prerequisites:

2nd semester or equivalent

Objectives:

Develop and evaluate a novel system that uses concepts and technologies in the chosen specialisation with a focus on exploring 1) its commercial aspects, and/or 2) its socio-cultural implications, and/or 3) its use in generating scientific knowledge.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** core state-of-the-art concepts, theories, techniques and methodologies relating to the sub-area of computer graphics that has been applied in the project
- Must be able to **synthesize** relevant concepts in media commercialization and innovation

Skills:

- Must be able to **apply** market and trend analysis methods to a media product or production with computer generated imagery content
- Must be able to **apply** computer graphics related tools and technologies to create products that are viable from a commercial, socio-cultural, and/or scientific perspective

Competencies:

- Must be able to **evaluate** and select relevant computer graphics theories, methods, and tools, with the specific aim of working towards creating new products, commercially viable products, or new knowledge

Type of instruction: Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Oral examination with internal censor based on a written project report and a media-technological product plus an A/V-production that illustrates and summarizes the project. The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:

Media Innovation - Interaction
(Medie-innovation - interaktion)

Workload: 20 ECTS

Semester: 3rd semester

Prerequisites:

2nd semester or equivalent

Objectives:

Develop and evaluate a novel system that uses concepts and technologies in the chosen specialisation with a focus on exploring 1) its commercial aspects, and/or 2) its socio-cultural implications, and/or 3) its use in generating scientific knowledge.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** core state-of-the-art concepts, theories, techniques and methodologies relating to the sub-area of interaction design that has been applied in the project
- Must be able to **synthesize** relevant concepts in media commercialization and innovation

Skills:

- Must be able to **apply** market and trend analysis methods to a media product or production involving advanced interaction design
- Must be able to **apply** interaction design methods and technologies to create products that are viable from a commercial, socio-cultural, and/or scientific perspective

Competencies:

- Must be able to **evaluate** and select relevant theories, methods, and tools, with the specific aim of working towards creating new products, commercially viable products, or new knowledge

Type of instruction: Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Medi Technology:

Oral examination with internal censor based on a written project report and a media-technological product plus an A/V-production that illustrates and summarizes the project. The assessment is performed in with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

Semester project:
Media Innovation - Medialogy
(Medie-innovation)

Workload: 20 ECTS
Semester: 3rd semester

Prerequisites:
2nd semester or equivalent

Objectives:
Develop and evaluate a novel system that uses concepts and technologies in the chosen specialisation with a focus on exploring 1) its commercial aspects, and/or 2) its socio-cultural implications, and/or 3) its use in generating scientific knowledge.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must be able to **understand** core state-of-the-art concepts, theories, techniques and methodologies relating to the particular technologies integrated in the system and the overall strategy and rationale for their integration
- Must be able to **synthesize** relevant concepts in media commercialization and innovation, as well as relevant considerations of the socio-cultural implications of new media systems

Skills:

- Must be able to **apply** market and trend analysis methods to a convergent media integrated product or production which includes multimodal digital content
- Must be able to **apply** tools and technologies to create products, processes and systems that are viable and of interest from a commercial, socio-cultural, and/or scientific perspective

Competencies:

- Must be able to **evaluate** and integrate different technological components, theories and tools into a unified system or product that can lead to commercial applications or to the generation of knowledge
- Must be able to **analyse** and incorporate considerations of sustainability, social responsibility and ethical dimensions in the design of such systems

Type of instruction: Academically supervised student-governed problem oriented project work.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:
Oral examination with internal censor based on a written project report and a media-technological product plus an A/V-production that illustrates and summarizes the project. The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.

<p>Title: Research in Medialogy (Forskning i medialogi)</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: 2nd semester</p>
<p>Objectives: The goal of this course is to perform advanced work in the student-selected specialisation, building upon the foundation gained in the 8th semester. Students explore state of the art theories and techniques in a formalized manner by analyzing a selection of new research texts to the specialisation through, e.g., critical annotations, paper presentations, reproduction of experiments, etc.</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Must be able to understand theories and principles related to a specific area of the chosen specialization <p>Skills:</p> <ul style="list-style-type: none"> • Must be able to analyse a research topic in the chosen specialisation • Must be able to analyse research papers related to a specific area of the chosen specialisation • Must be able to apply concepts, tools, theories and technologies of the chosen specialisation to address a specific research problem <p>Competencies:</p> <ul style="list-style-type: none"> • Must be able to synthesize a specific topic in the chosen specialization
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Oral or written examination with internal censor. The assessment is performed in accordance with the 7-point grading scale.</p>
<p>Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.</p>

<p>Title: Creative Innovation and Entrepreneurship (Kreativ innovation og entrepreneurskab)</p>
<p>Size: 5 ECTS</p>
<p>Prerequisites: BSc in Medialogy or equivalent</p>
<p>Objectives: This course will give an in-depth introduction of the various factors that are in play when starting a business in the media and entertainment industry. It will provide the necessary background for startup of business both in context of a team working inside an existing organisation (Intrepreneurship) and startup of new businesses (Entrepreneurship).</p> <p>Students who complete the module will gain knowledge, skills and competences as follows:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Must have knowledge about methods and concepts for startup of businesses • Must be able to understand market potentials for new media products or productions • Must be able to understand different business forms in relation to specific products or productions <p>Skills:</p> <ul style="list-style-type: none"> • Must be able to analyse a business case • Must be able to synthesize a business plan • Must be able to understand property rights and patents • Must be able to understand, design and conduct media culture analysis <p>Competencies:</p> <ul style="list-style-type: none"> • Must be able to understand how to collaborate within teams developing and implementing new business plans within existing companies or for startup companies • Be able to analyse, compare and discuss different business strategies • Be able analyse and evaluate the potential market for new media products or productions
<p>Type of instruction: Refer to the overview of instruction types listed in the start of chapter 3. The types of instruction for this course are decided in accordance with the current Framework Provisions and directions are decided and given by the Study Board for Media Technology.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Oral or written examination with internal censor. The assessment is performed in accordance with the 7-point grading scale.</p>
<p>Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions.</p>

Master's Thesis
(Kandidatspeciale)

Workload: 30 ECTS
Semester: 4th semester

Prerequisites:

All previous semesters (projects and course-modules) must have been passed (1st to 3rd semester)

Objectives:

To document that the student, independently or in a small group, is capable of planning and completing a major research project in the chosen specialization. The final thesis must document the student's ability to apply scientific theories and methods, critically analyse existing work, and synthesize new knowledge.

Students who complete the module will gain knowledge, skills and competences as follows:

Knowledge:

- Must have knowledge and **understanding** in one or more subject areas that are representative of the state of the art in the research community of the chosen specialization
- Can understand and, on a scientific basis, **apply** an area of the chosen specialization and identify scientific problems

Skills:

- **Synthesize** scientific methods and tools and general skills related to the chosen specialization
- Can **evaluate** and select among scientific theories, methods, tools and general skills and, on a scientific basis, advance new analyses and solutions in the chosen specialization
- Can **synthesize** research-based knowledge and discuss professional and scientific problems with both peers and non-specialists

Competencies:

- Can **synthesize** work and development situations that are complex, unpredictable and require new solutions
- Can **apply** acquired knowledge to independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility
- Can independently **synthesize** and take responsibility for own professional development and specialisation

Type of instruction: Academically supervised student-governed problem oriented project work. The project is carried out individually or in small groups of a maximum of three students. At least one internal supervisor is assigned, who deals with the primary area of the project in his or her research.

Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:

Individual oral examination with external censor based on a written project report and a media-technological product plus an A/V-production illustrating and summarizing the project. The assessment is performed in accordance with the 7-point grading scale.

Evaluation criteria: The criteria for the evaluation are specified in the Framework Provisions

Chapter 4: Entry into Force, Interim Provisions and Revision

The curriculum is approved by the Dean of the Faculties of Engineering and Science and enters into force as of September 2012.

In accordance with the Framework Provisions for the Faculties of Engineering and Science at Aalborg University, the curriculum must be revised no later than 5 years after its entry into force.

Chapter 5: Other Provisions

5.1 Rules concerning written work, including the Master's thesis

In the assessment of all written work, regardless of the language it is written in, weight is also given to the student's spelling and formulation ability, in addition to the academic content. Orthographic and grammatical correctness as well as stylistic proficiency are taken as a basis for the evaluation of language performance. Language performance must always be included as an independent dimension of the total evaluation. However, no examination can be assessed as 'Pass' on the basis of good language performance alone; similarly, an examination normally cannot be assessed as 'Fail' on the basis of poor language performance alone.

The Board of Studies can grant exemption from this in special cases (e.g., dyslexia).

The Master's thesis must include a Danish summary.¹ The summary must be at least 1 page and not more than 2 pages. The summary is included in the evaluation of the project as a whole.

5.2 Rules concerning credit transfer (*merit*), including the possibility for choice of modules that are part of another program at a university in Denmark or abroad

In the individual case, the Board of Studies can approve successfully completed (passed) program elements from other Master's programs in lieu of program elements in this program (credit transfer). The Board of Studies can also approve successfully completed (passed) program elements from another Danish program or a program outside of Denmark at the same level in lieu of program elements within this curriculum. Decisions on credit transfer are made by the Board of Studies based on an academic assessment. See the Framework Provisions for the rules on credit transfer.

5.3 Rules for examinations

The rules for examinations are stated in the Examination Policies and Procedures published by the Faculties of Engineering, Science and Medicine on their website.

In accordance with the current Framework Provisions and upon direction on examination from the Study Board for Media Technology, the following exam-format may be applied:

To be eligible to take the exam the student must have fulfilled:

- handing in of written assignments or the like
- completion of certain – or all – study activities

Note that if admittance to the exam or parts of the assessment is to be based on written work or exercises, a deadline is stipulated for when the work must be handed in. If the student hands in a paper/exercises after the deadline, the student has used an examination attempt.

¹ The Board of Studies can grant exemption from this.

5.4 Exemption

In exceptional circumstances, the Board of Studies can grant exemption from those parts of the curriculum that are not stipulated by law or ministerial order. Exemption regarding an examination applies to the immediate examination.

5.5 Additional information

The current version of the curriculum is published on the Board of Studies' website, including more detailed information about the program, including exams.

Completion of the Master's program

The Master's program must be completed no later than four years after it was begun.

Rules and requirements concerning the reading of texts in foreign languages and a statement of the foreign language knowledge

It is assumed that the student can read academic texts in modern English and use reference works and similar.

Chapter 6: Changes in the Curriculum

The Curriculum has been changed March 2011. The 3rd semester project has been changed from 15 ECTS to 20 ECTS for all specialisations.

The Curriculum has been changed August 2012. The specialisation Light Design has been added.

The Curriculum has been changed May 2014. The specializations Light Design and Sound and Music have been removed.