

Curriculum for the Master's Programme in

Service Systems Design

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PREFACE:

Pursuant to Act 695 of June 22, 2011 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's programme in Service Systems Design is stipulated. The programme also follows the Framework Provisions and the Examination Policies and Procedures for the Faculty of Engineering and Science and The Faculty of Medicine.

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Chapter 1: Legal Basis of the Curriculum, etc.

1.1 Basis in ministerial orders

The Master's programme in Service Systems Design is organised in accordance with the Ministry of Science, Technology and Innovation's Ministerial Order no. 814 of June 29, 2010 on Bachelor's and Master's Programmes at Universities (the Ministerial Order of the Study Programmes) and Ministerial Order no. 857 of July 1, 2010 on University Examinations (the Examination Order) with subsequent changes. Further reference is made to Ministerial Order no. 213 of March 6, 2012 (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 Faculty 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 Service Systems Design requires a Bachelor's degree in Industrial Design, Media Technology, Interaction Design, Art and Technology, IT Communication and New Media or similar.

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.

2.2 Degree designation in Danish and English

The Master's programme entitles the graduate to the designation cand.scient. (candidatus/candidata scientiarum) i service system design. The English designation is: Master of Science (MSc) in Service Systems Design.

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. The teaching language is English.

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 **knowledge** about the fundamental elements of programming, how and when those are relevant and should be used in the development of services.
- **Understands** user-oriented methods and the way this knowledge can be used to approach, segment and profile users in order to define value and business proposition in a design project.
- **Understands** issues related to interaction in relation to given products, context of use and characteristic of users.
- **Understands** the characteristics of services and the way they are organised, developed and represented.
- **Can understand**, reflect upon, and explain the properties of complex distributed systems and the concepts of modularisation and product/service architectures.
- Has **knowledge** about methodological approaches to the analysis and interpretation of users, as well as about methods and tools to support users' participation.
- Has **knowledge** about multimodal methods to represent non-functional and non-material characteristics of services in order to support users' involvement and participation in services.
- **Can understand** and reflect upon the main theoretical issues related to the construction of a service organisation.
- **Understands** and is able to critically reflect upon theories on innovation and business models.
- Has **knowledge** about relevant issues in research or practice of service design.

Skills

- Can design users' interface to services, with focus on technological, human and context related aspects (**synthesis**).
- Is able to **apply** user and market research and segmentation methods to establish specifications and success criteria.
- Is expert in conceptualising and sketching a product or service, emphasising the values and including principles of aesthetics, experience, use, technology and organisation (**synthesis**).
- Has high capability to **analyse** and address relevant conditions for the interaction between users and the service, taking into account technologies, users and context of use.

- Excels in the **application** of design tools and representation techniques to the development of new services and the organisation of the interactions in a service.
- Masters user centred service development and can identify modular elements in service system (**synthesis**).
- Has high capabilities to engage with users and support their participation and involvement in service systems (**synthesis**).
- **Understands** and **applies** experience-related aspects of services that can support users' participation and co-creation of a service.
- Masters and **applies** appropriate methods and tools to support innovation and change in organisations.
- Must be able to **interpret, understand** and properly address (**synthesis**) the need and the opportunities for design driven change within organisation.

Competencies

- **Understands** the development and organization of aspects related to programming, interaction, design and user participation and co-creation in a service.
- **Understands** and **applies** appropriate methods for organising functional as well as experiential aspects of design.
- Masters the organisation of complex service architectures, defining roles, rules, organisation and user-related aspects (**synthesis**).
- **Understands** strategic issues related to change and innovation in organisations, and is able to **evaluate** the opportunities offered by a design-driven approach.
- **Understands** strategic, organisation and business related aspects of service design and is able to **evaluate** their relevance in complex organisations.
- Can manage work and development situations that are complex, unpredictable and require new solutions (**synthesis**).
- Can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility (**synthesis**).
- Can independently take responsibility for own professional development and specialisation (**synthesis**).

Chapter 3: Content and Organisation of the Programme

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.

The programme is based on a combination of academic, problem-oriented and interdisciplinary approaches and organised 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

Overview of the programme:

The Master's program is based on a progression in which the complexity of the themes is progressively increasing:

- In the first semester, the concept of service is introduced, described and represented. This semester focuses on aspects related to interaction (user/service, human/machine, machine/machine, etc.).
- The second semester focuses on the construction of service systems on the basis of modular platform. This semester also focuses on the role of the user in the co-creation of value in a service.
- The third semester focuses on strategic aspects related to organisation of services according to industrial logic and business principles.

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 only).

Semester	Module	ECTS	Assessment	Exam
1 st	The System Around the Product	15	7-point scale	Internal
	User Experience Design for Multi-modal Interaction	5	Pass/Fail	Internal
	Designing Product Service Systems	5	7-point scale	Internal
	Choose 1 of the following	5	7-point scale	Internal
	a. Procedural Programming			
b. Designing the Value				
2 nd	Design of a Distributed Product Service System	15	7-point scale	External
	Distributed Systems	5	Pass/Fail	Internal
	User Participation and Social Innovation	5	Pass/Fail	Internal
	Designing the Experience	5	7-point scale	Internal
3 rd	Choose 1 of the following	20	7-point scale	Internal
	a. Main Project in Collaboration with a Company (possibly internship)			
	b. Theoretical Elaboration of a Topic or a Case			
	Choose 2 of the following	5	7-point scale	Internal
	System Organization and Industrialization of Services			
	Strategies and Business in Services			
	Elective course (replaces one of the two 5 ECTS modules) ¹			
4 th	Master's Thesis	30	7-point scale	External
Total		120		

¹ Elective courses may include courses offered by the Study Board for Media Technology, by other study boards at Aalborg University, or by other Danish or foreign universities. 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.

Descriptions of modules

1st Semester

Semester project

The System Around the Product

(Systemet omkring produktet)

Workload: 15 ECTS, consisting of project work

Semester: 1st semester

Prerequisites:

Bachelor's degree in Industrial Design, Media Technology, Interaction Design, Art and Technology, IT Communication and New Media or similar.

Objective:

The objective of this project module is to develop students' ability to analyse and propose syntheses of products and services with high service/technology content, focusing on the interaction aspects between users and the service, human and technologies, and machine to machine.

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

Knowledge

- Must be able to **understand** time and interaction related issues in specific service cases
- Must be able to **apply** appropriate methods and tools to organise sequences of events and interactions in a service.
- Must be able to **Understand** technological, material, social and cultural aspects relating to the design of services and interaction.

Skills

- Must be able to **analyse** the products' interplay with users and take into consideration and account for the contextual circumstances that necessitate a particularly active behaviour and analysis.
- Must be able to carry out an **analysis** of problem areas relating to the design of the interaction between products and their users.
- Must be able to **synthesise** technical, time and interaction related, social and cultural aspects into a design proposal.

Competences

- Must be able to design products and services integrating technical and user aspects through proposal-making (**synthesis**) and assess their integration.
- Must be able to adequate competences to present the project and the process in a professionally appropriate way by **applying** relevant media and techniques.

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

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

Individual oral (based on a presentation and discussion of a project) or written (in the form of a project/process report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions

<p>Title: User Experience Design for Multi-modal Interaction (Design af burgeroplevelse for multi-modal interaktion)</p>
<p>Prerequisites: Any basic course on interaction design at the bachelor level.</p>
<p>Size: 5 ECTS</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 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 course module will obtain the following qualifications:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Knowledge about system design methods including the social and cultural contexts of use. • Knowledge of ethnographic study methods for user behaviour research. • Knowledge about qualitative research methods involving end users in the field, such as interview techniques, analysis and experience sampling. • Knowledge about scenario-based design methods. • Knowledge about principles for multi-modal interaction design. <p>Skills:</p> <ul style="list-style-type: none"> • Apply the taught methods to solve concrete design problems. • Able to evaluate and compare and apply the methods for a specific design problem. • Understand user analysis and organise data from and interaction in a way that can be used in the design process (synthesis). • Apply knowledge to facilitate the design process involving users in real-life contexts. <p>Competencies:</p> <ul style="list-style-type: none"> • Ability 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 (synthesis). • Understanding the strengths and weaknesses of the methods.

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

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

Individual oral (based on presentation and discussion) or written (based on a report) examination with internal censor. Assessment: Pass/Fail.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: Designing Product Service Systems (Design af produkt-servicesystemer)</p>
<p>Prerequisites: Bachelor's degree in Industrial Design, Media Technology, Interaction Design, Art and Technology, IT Communication and New Media or similar.</p>
<p>Size: 5 ECTS</p>
<p>Objective: This module will introduce service design and provide knowledge and methodological tools to analyse existing services and to develop new services. The course will provide an overview of analytical methods to understand and integrate users needs, design methods to control and organise time and interaction-based elements of a services and representation techniques, that can be used to communicate with the various actors involved in a service system.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand the nature and characteristics of services. • Understand and be able to explain differences and analogies between products and services in relation to the design process. • Understand the structure of a service in relation to its time, experience and interaction factors. • Understand the nature and characteristics of the interaction between service providers, technologies and users in a service encounter. <p>Skills</p> <ul style="list-style-type: none"> • Apply adequate analytical and interpretation tools to integrate users' need and possibly participation in the design process. • Able to design a service, its structure, components and actors (synthesis). • Able to organise sets of operations, sequence of events, interactions and material evidences in a service (synthesis). • Apply adequate representation techniques to communicate the structure of the service to people with different knowledge and technical/cultural background. <p>Competences</p> <ul style="list-style-type: none"> • Ability to select and apply an appropriate approach to the analysis and the design of a service.
<p>Type of instruction: See general description of the types of instruction described in the introduction to Chapter 3.</p>

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:
Individual oral (based on presentation and discussion) or written (based on a report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: Procedural Programming (Proceduremæssig programmering)</p>
<p>Prerequisites: Bachelor's degree in Industrial Design, Media Technology, Interaction Design, Art and Technology, IT Communication and New Media or similar.</p>
<p>Size: 5 ECTS</p>
<p>Objective: The objective of this module is to integrate existing knowledge about programming to an advanced level that is required to understand the basics and, to a certain extent, to work with the most used applications in interaction design and digital devices that can be used for service platforms.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand integrated development environments. • Understand differences between run-time and compile-time computer programming languages. • Understand recursive functions. • Understand instances of inheritance, composition and encapsulation, and explain their utility. • Understand pointers and references. • Understand types, declarations, expressions and statements. • Understand libraries and the concept of linking. • Understand the complexity of a program. • Understand different methods for debugging code. <p>Skills</p> <ul style="list-style-type: none"> • Design an event-driven interactive interface, e.g., a simple game and integrate external libraries (application). • Interpret and analyse a basic object oriented program. • Interpret compiling error messages (understanding). • Design and implement algorithms for data structure manipulation using references and addresses where necessary (application). • Work out the complexity of a program (understanding). • Explain how to use algorithms, functions and data for solving problems (understanding). <p>Competences</p> <ul style="list-style-type: none"> • Evaluate (analysis) existing code, judge its design and recommend changes.

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:

Individual oral (based on presentation and discussion) or written (based on a report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: Designing the Value (Design af værdien)</p>
<p>Prerequisites: Bachelor's degree in Industrial Design, Media Technology, Interaction Design, Art and Technology, IT Communication and New Media or similar.</p>
<p>Size: 5 ECTS</p>
<p>Objective: The aim is to familiarise students working professionally with the theories, tools and methods required for the pre-product development phase in which the focus is on what to design and why in terms of specifying both product/service and target group.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand design-oriented problem solving approach and compare it with mathematical/analytical methods, • Apply appropriate analytical and synthetic tools in order to adequately frame wicked problems. • Understand, and be able to describe and explain a range of user-oriented methods, which are applied to establish the basis of projects and to verify and test assumptions made during the design process. • Understand and be able to explain ways of segmenting and profiling users from both user-centred design and marketing perspectives. • Analyse, understand and compare the type of knowledge created by using various user- and market-oriented research methods. • Extensive knowledge of the design process and be able to explain the various approaches and phases of the design process. • Knowledge of how to define the value base and business proposition of a given design concept. <p>Skills</p> <ul style="list-style-type: none"> • Apply user and market research and segmentation methods to establish specifications and success criteria. • Understand and describe the specification for a product or service, practical and theoretical market positioning and presentation as part of the branding and communication of the product. • Able to rapidly conceptualise and roughly sketch a product or service on the basis of a set of defined values (synthesis), including the principles which lie behind its aesthetic expression, use and construction. <p>Competences</p> <ul style="list-style-type: none"> • Ability to select and apply appropriate user-centred design and market research methods depending on the type of knowledge required for the

design of a product or service.

- Able to define a clear value basis and business case for a product/service to be developed and to position and present it accordingly (**synthesis**).

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:
Individual oral (based on presentation and discussion) or written (based on a report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

2nd semester

<p>Semester project Design of a Distributed Product Service System (Systemet omkring produktet)</p> <p>Workload: 15 ECTS, consisting of project work Semester: 2nd semester</p>
<p>Prerequisites 1st semester or similar</p>
<p>Objective: The objective of this project module is to give hands-on experience on the design of a complex service on the basis of a modular platform, in which actors and competences are clearly identified, organizational and interaction aspects are planned and user participation is planned and supported.</p> <p>Students who complete the project module will obtain the following qualifications:</p> <p>Knowledge:</p> <ul style="list-style-type: none">• Must be able to understand the nature and structure of distributed system.• Must be able to organise, explain and discuss the role, capabilities and relevance of different components/actors in a product service system (synthesis). <p>Skills</p> <ul style="list-style-type: none">• Must be able to plan and describe competences of different components/actors in a modular service architecture and to organise them appropriately (synthesis).• Must be able to apply techniques that support the participation of actors with different backgrounds, skills and culture.• Must be able to integrate technical and human components on a service platform (synthesis). <p>Competences</p> <ul style="list-style-type: none">• Must be able to plan adequate systemic structures for the organisation of services (synthesis).• Must be expert in planning and supporting collaboration, participation and integration of different components in a service system (synthesis).
<p>Type of instruction: See general description of the types of instruction described in the introduction to Chapter 3.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:</p>

Individual oral (based on a presentation, video, prototypes and discussion of a project) or written (based on a project/process report) examination with external censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: Distributed Systems (Distribuerede systemer)</p>
<p>Prerequisites: 1st semester or similar</p>
<p>Size: 5 ECTS</p>
<p>Objective: The objective of this model is to introduce a higher level of complexity in the design of services that allows for the definition of modular systems and service platforms in both IT-based and physical services. In this model students will develop an understanding of all the technical and non-technical elements that are needed to provide successful services and operate a service architecture.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand the key technologies behind social networking, search engines, organisation of content and user-generated tagging. • Analyse, explain and discuss methods for "enrichment" of services: involvement of users, identity management, personalization, use of context, etc. • Analyse drivers and barriers for introduction of new ICT services from a technology, user and market perspective. • Understand the concepts of "service architecture". • Understand the concept of modularisation of products and services. • Understand and explain the potential benefits of modularisation. • Understand the concept of product and supply chain architecture. • Understand the paradoxes related to modularisation and innovation. • Apply techniques and tools to control key technologies behind social networking, search engines, organisation of content and user-generated tagging. <p>Skills</p> <ul style="list-style-type: none"> • Classify services and outline the requirements that a given service imposes on networks and terminals (analysis). • Understand and apply user-centric service development and stakeholder analysis in setting up the requirements specification for a service. • Be able to analyse and evaluate various dimensions of modular products and services. • Be able to position modular products and services in a specific business context (analysis). • Be able to apply different concepts and theories to specific cases. <p>Competences</p> <ul style="list-style-type: none"> • Analyse and design (synthesis) a realistic ICT or physical service (on

a conceptual level) to address an identified user need and discuss the service architecture needed to realise the proposed service.

- Demonstrate **understanding** through application in exercises and cases of:
 - Various types of products and services.
 - Various organizations characterized by differences in maturity and size.
 - Various types of supply chain relations.

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

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

Individual oral (based on presentation and discussion) or written (based on a report) examination with internal censor. Assessment: Pass/Fail.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: User Participation and Social Innovation (Brugerinvolvering og social innovation)</p>
<p>Prerequisites: 1st semester or similar</p>
<p>Size: 5 ECTS</p>
<p>Objective: The purpose of this module is to provide students with advanced knowledge and methods to interact with users and involve them in a process of co-design and participation. In these modules, exercises and theoretical reflections will also be proposed to analyse and evaluate design action on innovation in specific social contexts. The students will learn to use methods and techniques from different disciplinary contexts and adapt them in order to stimulate and support users' participation and the interpretation of their needs, behaviour and attitudes in relation to their social and cultural context.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand the full potential of methods and tools deriving from different disciplines for the development of a design process. • Knowledge about theories and practice of innovation in social contexts. • Extensive knowledge about participatory design and co-design theories and methodological approach. • Understand the relevance of participatory design approach on specific applications of services in the public and private sector. • Understand the implications and characteristics of innovation processes in open and distributed systems. <p>Skills</p> <ul style="list-style-type: none"> • Apply advanced knowledge about user centred techniques to support users' co-creation and participation. • Support user participation by developing prototypes (synthesis) that simulate and provide evaluation elements on user interaction and participation. • Apply specific methods and tools to engage with users. • Develop design strategies that take into account specific socio-technical contexts (synthesis). • Evaluate the social-technical implications of design intervention in social contexts. <p>Competences</p> <ul style="list-style-type: none"> • Plan and develop user-oriented design activities in relation to a specific design task and context (synthesis). • Plan users involvement and participation in the design process (synthesis).

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

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

Individual oral (based on presentation and discussion) or written (based on a report) examination with internal censor. Assessment: Pass/Fail.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: Designing the Experience (Design af oplevelsen)</p>
<p>Prerequisites: 1st semester or similar</p>
<p>Size: 5 ECTS</p>
<p>Objective: The purpose of this project module is to provide students with advanced knowledge of techniques and tools to represent non-functional aspects of services such as time sequences, interactions and experiences. The students will learn how to use narrative, visual and multimodal techniques to communicate nature and characteristics of a service and to support users participation with knowledge about the most complex aspects of the service.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand service as experiences through the individuation of the most relevant non-functional component. • Knowledge about different levels, qualities and perceptions of experience in services. • Understand advanced representation techniques to represent experience in a service. • Extensive and advanced knowledge about storytelling and narrative techniques. • Some knowledge about video editing and video sketching techniques. <p>Skills</p> <ul style="list-style-type: none"> • Apply narrative techniques to represent service experiences. • Apply appropriate modality of interaction with users according to the level of their involvement in the service and the context of use. • Apply video sketching as a fast and rich representation technique. • Capability to apply multi-modal perception to interactive digital or physical services. • Apply multi-modal perception processes in relation to higher order cognitive processes such as emotional response and intelligibility. • Apply methods to test experience qualities such as usability, sociability, likeability, etc. in services. <p>Competences</p> <ul style="list-style-type: none"> • Involve users and reflect on their role in relation to the co-design of services and experiences. • Represent experience-related aspects in services (synthesis). • Manage and process data in relation to the design of experience in services (synthesis).

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology:
Individual oral (based on presentation/videos and discussion) or written (based on a report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

3rd Semester

<p>Semester project Project in Collaboration with a Company (Projekt i samarbejde med virksomhed)</p> <p>Workload: 20 ECTS Semester: 3rd semester</p>
<p>Prerequisites: 2nd semester or similar</p>
<p>Objective: The purpose of this project module is to give the students the opportunity to have a <i>hands-on</i> experience in service design with a company or an organisation. The project can be developed as an internship at the company or through cooperation between the student, the university, and the company.</p> <p>Students who complete the project module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none">• Must have practical, conceptual and professional knowledge that qualify the role and value of service design practice.• Must have knowledge of relevant professional, business related and organizational issues that are relevant for the design practice. <p>Skills</p> <ul style="list-style-type: none">• Must be able to understand and engage with a professional environment in relation to service design assignments.• Must be able to analyse, understand and synthesise strategic issues in design practice on the basis of the knowledge acquired in the previous courses. <p>Competences</p> <ul style="list-style-type: none">• Must be able to manage and solve (synthesis) systemic tasks related to service design in cross-disciplinary teams in a company, design studio or similar.
<p>Type of instruction: See general description of the types of instruction described in the introduction to Chapter 3.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Individual oral (based on a presentation and discussion of a project) or written (based on a project/process report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.</p>

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Semester project Theoretical Elaboration of a Topic or a Case (Teoretisk uddybelse af et emne eller sag)</p> <p>Workload: 20 ECTS Semester: 3rd semester</p>
<p>Prerequisites 2nd semester or similar</p>
<p>Objective: The purpose of this module is to give the student the opportunity to reflect and elaborate on the theoretical and methodological knowledge acquired in the previous modules, possibly applying this knowledge to a specific study area, a business sector or a case.</p> <p>Students who complete the project module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Must be able to analyse, define and frame a relevant subject for investigation and research within the area of design of product service systems. • Must be able to understand and account for relevant theoretical positions and related methodologies pertaining to the chosen subject. <p>Skills</p> <ul style="list-style-type: none"> • Must be able to synthesise the research problem, taking into account the interdependency between type of knowledge wanted, the possible methods of investigation and type of data produced. • Must be able to observe, analyse and interpret designers' behaviour in specific social and technical contexts. <p>Competences</p> <ul style="list-style-type: none"> • Must be able to plan and carry out research of a chosen subject and have the capacity to describe the chosen problem in a theoretical and methodological framework as well as to draw conclusions on the basis of own analysis of the results (synthesis).
<p>Type of instruction: See general description of the types of instruction described in the introduction to Chapter 3.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Individual oral (based on a presentation, video, prototype and discussion of a project) or written (based on a project/process report) examination with internal censor. The assessment is performed in accordance with the 7-point scale.</p>

Evaluation criteria:

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: System Organization and Industrialization of Services (Systemorganisation og industrialisering af serviceydelser)</p>
<p>Prerequisites: 2nd semester or similar</p>
<p>Size: 5 ECTS</p>
<p>Objective: The purpose of this module is to provide strategic insights for the organization of service systems of higher complexity that are based on modularization, distribution of work and competences and economy of scale and scope. The module will provide theoretical knowledge about organizational issues in this area and a series of theoretical contributions that will frame the development of such systems from a design perspective.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Knowledge about organisation structures, strategic and political issues and potential risks. • Understand organisational issues in relation to change and innovation. • Knowledge of how service platforms can be organised according to industrial principles of economy of scale/scope, reproducibility, distribution of work and competences. • Knowledge on how design competences can be used in driving change in organisation. <p>Skills</p> <ul style="list-style-type: none"> • Apply appropriate methods and tools to support innovation processes in organisation. • Evaluate the impact of change in organisation and in service quality. • Interpret, understand and address (synthesis) the need and the opportunities for design-driven change within organisations. <p>Competencies</p> <ul style="list-style-type: none"> • Evaluate potential risks and power issues in organisations. • Support innovation processes in service organisation by applying appropriate design strategies. • Evaluate design issues that can address innovation in organisation.
<p>Type of instruction: See general description of the types of instruction described in the introduction to Chapter 3.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Individual oral (based on a presentation and discussion) or written (a report) examination with internal censor. The assessment is performed in accordance</p>

with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

<p>Title: Strategies and Business in Services (Strategi og forretning i servicesektoren)</p>
<p>Prerequisites: 2nd semester or similar</p>
<p>Size: 5 ECTS</p>
<p>Objective: The purpose of this module is to provide advanced knowledge on theories and methodological tools to analyse and suggest appropriate and innovative business models for service companies. The module will focus on theories of entrepreneurship with emphasis on innovative business models for product-service systems. Theories and methodological tools will be applied to specific cases.</p> <p>Students who complete the course module will obtain the following qualifications:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • Knowledge about theories and methods for business development. • Knowledge about theories of innovation and entrepreneurship. • Understand and explain the key linkages between the different theories. <p>Skills</p> <ul style="list-style-type: none"> • Understand and explain the link between different design elements of business models: customer value, organisation, technology and financial issues. • Appropriately and critically apply innovation and business developments theories and methodologies in the analysis of market trends and business models. • Combine knowledge on service systems and technology with business development and business potential (synthesis). <p>Competences</p> <ul style="list-style-type: none"> • Appropriately select and use business models in different business areas needed to realise the proposed service (synthesis). • Select and use creative and design-driven perspectives for the development of innovative services, up to the development of appropriate business plans (synthesis).
<p>Type of instruction: See general description of the types of instruction described in the introduction to Chapter 3.</p>
<p>Exam format: In accordance with the current Framework Provisions and directions on examination from the Study Board for Media Technology: Individual oral (based on a presentation and discussion) or written (a report)</p>

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

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

Master's Thesis

(Kandidatspeciale)

Workload: 30 ECTS

Semester: 4th semester

Prerequisites:

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

Objective:

In the Master's thesis the student has to demonstrate the acquisition of competences, skills and knowledge that allow him/her to master the profession of service design. The student will work on a theme chosen together with the supervisor and possibly an external company or organisation.

Students who complete the module will obtain the following qualifications:

Knowledge

- Must have **knowledge** about the possibilities to apply appropriate methodological approaches to specific study areas.
- Must have **knowledge** about design theories and methods that focus on the design of advanced and complex product-service systems.

Skills

- Must be able to work independently, to identify major problem areas (**analysis**) and adequately address problems and opportunities (**synthesis**).
- Must demonstrate the capability of **analysing**, designing and representing innovative solutions.
- Must demonstrate the ability to **evaluate** and address (**synthesis**) major organisational and business issues emerging in the design of a product-service system.

Competences

- Must be able to master design and development work in situations that are complex, unpredictable and require new solutions (**synthesis**).
- Must be able to independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility (**synthesis**).
- Must have the capability to independently take responsibility for own professional development and specialisation (**synthesis**)

Type of instruction:

See general description of the types of instruction described in the introduction to Chapter 3.

Exam format:

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

Individual oral (based on the project report, a presentation, discussion as well as e.g. video, prototypes and discussion) or written (a project/process report) examination with external censor. The assessment is performed in accordance with the 7-point scale.

Evaluation criteria

The criteria for evaluation are provided in the Framework Provisions.

Chapter 4: Entry into Force, Interim Provisions and Revision

The curriculum is approved by the Dean of the Faculty of Engineering and Science and enters into force as of September 1st 2012.

In accordance with the Framework Provisions for the Faculty of Engineering and Science and The Faculty of Medicine 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 or a native language other than Danish).

The Master's thesis must include an English summary.² If the project is written in English, the summary must be in Danish.³ 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 programme at a university in Denmark or abroad

In individual cases, the Board of Studies can approve successfully completed (passed) programme elements from other Master's programmes in lieu of programme elements in this programme (credit transfer). The Board of Studies can also approve successfully completed (passed) programme elements from another Danish programme or a programme outside of Denmark at the same level in lieu of programme 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 Faculty of Engineering and Science on their website.

5.4 Exemption

In exceptional circumstances, the Board of Studies study 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.

² Or another foreign language, upon approval from the Board of Studies.

³ The Board of Studies can grant exemption from this.

5.5 Completion of the Master's programme

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

5.6 Rules and requirements for the reading of texts

It is assumed that the student can read academic texts in his or her native language as well as in English and use reference works etc. in other European languages.

5.7 Additional information

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