The Technical Faculty of IT and Design
The Study Board of Media Technology

AALBORG UNIVERSITY
DENMARK

Curriculum for the Master's Program in Service Systems Design

Aalborg University

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Campus Copenhagen

Preface:

Pursuant to Act 261 of March 18, 2015 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's programme in Service Systems is stipulated. The programme also follows the Joint Programme Regulations and the Examination Policies and Procedures for The Technical Faculty of IT and Design, 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 Higher Education and Science's Order no. 1328 of November 15, 2016 on Bachelor's and Master's Programmes at Universities (the Ministerial Order of the Study Programmes) and Ministerial Order no. 1062 of June 30, 2016 on University Examinations (the Examination Order). Further reference is made to Ministerial Order no. 258 of March 18, 2015 (the Admission Order) and Ministerial Order no. 114 of February 3, 2015 (the Grading Scale Order) with subsequent changes.

1.2 Faculty affiliation
The Master's programme falls under the Technical Faculty of IT and Design, Aalborg University.

1.3 Board of Studies affiliation
The Master's programme falls under the Board of Studies for Media Technology at School of Information and Communication Technology.

1.4 External examiners corps
The Master's programme is associated with the external examiners corps "Ingeniøruddannelsernes landsdækkende censorkorps for design".

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

2.1 Admission

Applicants without legal claim to admission

- Bachelor of Science (BSc) in Medialogy, Aalborg University
- Bachelor of Science (BSc) in Interaction Design, Aalborg University
- Bachelor of Science (BSc) in Art and Technology, Aalborg University
- Bachelor of Science (BSc) in IT Communication and New Media, Aalborg University
- Bachelor of Science (BSc) in Architecture and Design, Aalborg University
- Bachelor of Science (BSc) in Interaction Design, University of Southern Denmark (SDU)

Students with another Bachelor's degree may, upon application to the Board of Studies, 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. 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.

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 that have been acquired via a course of study that has taken place in a research environment.
The graduate of the Master's programme is qualified for employment on the labour market based on his or her academic discipline as well as for further research (PhD programmes). Compared to the Bachelor's degree, the graduate of the Master's programme has developed his/her academic knowledge and independence to be able to apply scientific theory and method on an independent basis within both an academic and a 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 (synthesis)** 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 coope-ration and assume professional responsibility (**synthesis**)
- Can independently take responsibility for own professional development and specialisation (**synthesis**)

Chapter 3: Content and Organization of the Programme

The programme is structured in modules and organized 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.

- 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

Overview of the programme:
The Master's programme 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.
- The fourth semester consists of a 30 ECTS Master's Thesis.

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
1st	Services as Interaction	15	7-point scale	Internal
	User Experience Design for Service Interaction	5	7- point scale	Internal
	Designing Product Service Systems	5	7-point scale	Internal
	Programming for Services	5	7-point scale	Internal
2nd	Services as Systems	15	7-point scale	External
	Computing Infrastructure Management	5	7-point scale	Internal
	User Participation and Social Innovation	5	7-point scale	Internal
	Services Representation and Prototyping	5	Pass/fail	Internal
3rd	**Choose one of the following options**: a) Project-Oriented Work in a Company and 1 course	25	Pass/fail	Internal
	b) Theoretical Elaboration of a Topic or a Case and 1 course	25	7-point scale	Internal
	Strategy and Business in Services	5	7-point scale	Internal
4th	Master's Thesis	30	7-point scale	External
Total		120		

Problem Based Learning:
A compulsory course in Problem Based Learning (PBL) is offered as an integrated part of the project module to students not acquainted with PBL at Aalborg University.

Title:
Services as Interaction
(Service som interaktion)
1st semester

Objectives:
Students who complete the 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 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 Joint Programme Regulations and directions on examination from the Study Board for Media Technology:
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 the evaluation are specified in the Joint Programme Regulations.

Title:
Problem Based Learning (PBL) at Aalborg University
(Problembaseret læring på Aalborg Universitet)
1st semester

Prerequisites: None, but the course is compulsory for students not acquainted with the PBL model at Aalborg University

Objectives:
After completion of the course the student should

Knowledge:

- know how to describe in own words some of the fundamental principles of Problem Based Learning (PBL) as implemented in the Aalborg PBL model at the Faculty of Engineering and Science
- know how to identify similarities and differences between the Aalborg PBL study environment and previous study environments, incl. strengths and weaknesses in both environments

Skills:

- be able to structure project management activities based on a well-formulated problem formulation
- be able to assess project documentation based on scientific codes of conduct competences
- to plan for effective collaborative learning in an intercultural environment and manage group conflicts
- be able to reflect on, plan and manage a study project in a PBL learning environment

Type of Instructions: Lectures, discussions and group work. The course will take place during three Wednesday afternoons.

Assessment: Internal assessment during the course/class participation according to the rules in the Examination Policies and Procedures, addendum to the Joint Programme Regulations of the Technical Faculty of IT and Design. In this case the assessment is primarily based on the oral performance during the course. This means that the student has to be active during the course time and participate in discussions. The course is an integrated part of the project and a precondition for participation in the project examination for those who are not acquainted with the Aalborg PBL model. Consequently, no diploma will be issued for the course nor will it appear on the academic transcripts. The assessment is pass/fail.

Evaluation criteria:
The criteria for the evaluation are specified in the Joint Programme Regulations.

Title:
User Experience Design for Service Interaction
(Brugeroplevelse af serviceinteraktion)
1st semester

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. Experience prototyping techniques and interaction design methods will be introduced with the aim of better understanding and representing the different levels of interaction within a service. The objectives are realised by presenting methods and tools in a case based framework and through the students' active participation in workshops and assignments.

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

Knowledge:
- **Knowledge** about the system design methods including the social and cultural contexts of use.
- **Knowledge** about ethnographic study methods for user behaviour research
- **Knowledge** about advanced qualitative research methods involving both design, data collection, data analysis and reporting.
- **Knowledge** about validity and reliability within qualitative methods
- **Knowledge** about interaction design methods

Skills:
- **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.
- **Apply** personas and scenario based design methods in different contexts for facilitating both different user types and system descriptions.
- **Apply** data into specific strategies for implementation taken different stakeholders into consideration.

Competencies:
- Ability to choose the appropriate methods 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 methods.

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
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 the evaluation are specified in the Joint Programme Regulations

Title:
Designing Product Service Systems
(Design af produkt-servicesystemer)
1st semester

Objectives:
This module will introduce design thinking and 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 user's 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.

Students who complete the module will obtain the following qualifications:

Knowledge

- **Understand** the foundations of design thinking as a learning approach
- **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

Skills

- **Capability to apply** the design thinking approach to real problems
- **Capability to apply** adequate analytical and interpretation tools to integrate users' needs and support users' participation in the design process
- Ability to design a service, its structure, components and actors (**synthesis)**
- Ability to organise sets of operations, sequence of events, interactions and material evidences in a service (**synthesis)**
- **Capability to apply** adequate representation techniques to communicate the structure of the service to people with different knowledge and technical/cultural background

Competences

- Ability to select and **apply** an appropriate approach to the analysis and the design of a service.

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
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 the evaluation are specified in the Joint Programme Regulations

Title:
Programming for Services
(Programmering for service)
1st semester

Objectives:
The module will introduce the basic concepts of programming needed to understand and to work with the most used applications in interaction design and with digital devices that can be used for service platforms. Students who complete the course module will obtain the following qualifycations:

Knowledge:
- **Understand** integrated development environments
- **Understand** recursive functions
- **Understand** types, declarations, expressions and statements
- **Understand** the complexity of a program
- **Understand** libraries and the concept of linking

Skills:
- Design an event-driven interactive interface, e.g., a simple app or a touch-point of a service and integrate external libraries (**application**)
- Interpret and analyze a basic program
- Work out the complexity of a program (**understanding**)
- Explain how to use algorithms, functions and data for solving problems (understanding)

Competencies:
- Evaluate (**analysis**) existing code, judge its design and recommend changes
- Evaluate and select the right platform to be used for supporting a specific service application

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 Joint Programme Regulations 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 the evaluation are specified in the Joint Programme Regulations

Title:
Services as Systems
(Services som systemer)
2nd semester

Prerequisites:
The module adds to the knowledge obtained in the 1st semester.

Objectives:
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.

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

Knowledge:
- 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**)

Skills:
- 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**)

Competencies:
- 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**)

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
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 the evaluation are specified in the Joint Programme Regulations

Title:
Computing Infrastructure Management
(Styring af computing infrastruktur**)**
2nd semester

Prerequisites:
The module adds to the knowledge obtained in the 1st semester.

Objectives:
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.

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

Knowledge:
- **Understand** the key technologies behind social networking, search engines, organisation of content and user-generated tagging
- **Understand** the IT infrastructure needed to support living services
- **Understand** the concepts of ”service architecture”
- **Analyse,** explain and discuss methods for managing systemic components of services: user involvement, complex interaction among the stakeholders, personalization, context of use, etc.
- **Analyse** drivers and barriers for introduction of new ICT services from a technology, user and market perspective
- **Understand** the concept of modularisation of products and services
- **Understand** and explain the potential benefits of modularisation, in respect to personalisation of service
- **Apply** techniques and tools to control key technologies behind social networking, search engines, organisation of content and user-generated tagging

Skills:
- Classify services and outline the requirements that a given service imposes on networks and terminals (**analysis**)
- **Understand** and **apply** user-centred 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

Competencies:
- **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

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
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 the evaluation are specified in the Joint Programme Regulations.

Title:
User Participation and Social Innovation
(Brugerinvolvering og social innovation)
2nd semester

Prerequisites:
The module adds to the knowledge obtained in the 1st semester.

Objectives:
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 this module, 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.

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

Knowledge:
- **Understand** the 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

Skills:
- **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

Competencies:
- 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:
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 the evaluation are specified in the Joint Programme Regulations

Title:
Services Representation and Prototyping
(Services, repræsentation og prototyping**)**
2nd semester

Prerequisites:
The module adds to the knowledge obtained in the 1st semester.

Objectives:
The purpose of this module it 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 services and how to use rapid prototyping techniques to represent specific service touch points and experiences.

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

Knowledge:
- **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
- **Knowledge** of basics paradigms on embedded systems and sensors technology
- Some **knowledge** about video editing and video sketching techniques

Skills:
- **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
- **Apply** Human Machine Interaction and rapid prototyping techniques to materialize service touch-points and to create tangible service representations
- **Capability** to convert human input into data output
- **Apply** methods to test experience qualities such as usability, sociability, likeability, etc. in services

Competencies:
- 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:
Individual oral (based on presentation/videos and discussion) or written (based on a report) examination with internal censor. Assessment: pass/fail.

Evaluation criteria:
The criteria for the evaluation are specified in the Joint Programme Regulations

Title:
Semester project
Project-Oriented Work in a Company
(Projekt i samarbejde med virksomhed)
3rd semester

Prerequisites:
The module adds to the knowledge obtained in the 2nd semester.

Objectives:
The purpose of this project module is to give the students the opportunity to have a *hands-on* 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.

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

Knowledge:

- Must have practical, conceptual and professional **knowledge** that qualify the role and value of service design practice
- Must have knowledge and relevant professional, business related and organizational issues that are relevant for the design practice

Skills:

- 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

Competencies:

- 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

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
Oral on basis of a submitted Company Stay Report. Assessment: pass/fail.

Evaluation criteria:
The criteria for the evaluation are specified in the Joint Programme Regulations.

Title:
Semester project
Theoretical Elaboration of a Topic or a Case
(Teoretisk uddybelse af et emne eller sag)
3rd semester

Prerequisites:
The module adds to the knowledge obtained in the 2nd semester.

Objectives:
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.

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

Knowledge:
- 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

Skills:
- 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 technical contexts

Competencies:
- 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 of own analysis of the results (**synthesis**)

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
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.

Evaluation criteria:
The criteria for the evaluation are specified in the Joint Programme Regulations.

Title:
Strategy and Business in Services
(Strategi og forretning i servicesektoren)
3rd semester

Prerequisites:
The module adds to the knowledge obtained in the 2nd semester.

Objectives:
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.

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

Knowledge:
- **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

Skills:
- **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**)

Competencies:
- 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**)

Type of instruction:
See general description of the types of instruction described in the introduction to chapter 3

Exam format:
Individual oral (based on a presentation and discussion) or written (a report) 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 Joint Programme Regulations.

Title:
Master's Thesis
(Kandidatspeciale)
4th semester

Prerequisites:
The module adds to the knowledge obtained in the 1st, 2nd, and 3rd semester.

Objectives:
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

Competencies:
- 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:
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 the evaluation are specified in the Joint Programme Regulations.

Chapter 4: Entry into Force, Interim Provisions and Revision

The curriculum is approved by the Dean of the Technical Faculty of IT and Design and enters into force as of September 2017.

Students who wish to complete their studies under the previous curriculum from 2012 must conclude their education by the summer examination period 2018 at the latest, since examinations under the previous curriculum are not offered after this time.

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.[1] If the project is written in English, the summary must be in Danish.[2] 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 the individual case, 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 Joint Programme Regulations 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 Technical Faculty of IT and Design, The Faculty of Engineering and Science, and the Faculty of Medicine 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.

5.5 Rules and requirements for the reading of texts

At programmes that are taught in Danish, it is assumed that the student can read academic texts in modern Danish, Norwegian, Swedish and English and use reference works, etc., in other

[1] Or another foreign language (upon approval from the Study Board).
[2] The Board of Studies can grant exemption from this.

European languages. At programmes taught in English, it is assumed that the student can read academic text and use reference works, etc., in English.

5.6 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.