



AALBORG UNIVERSITET

# **CURRICULUM FOR THE MASTER'S PROGRAMME IN SUSTAINABLE DESIGN - 2017 - COPENHAGEN**

MASTER OF SCIENCE (MSC) IN ENGINEERING  
COPENHAGEN

[Link til denne studieordning](#)

## Curriculum for the Master's Programme in Sustainable Design - 2017 - Copenhagen

Link(s) til andre versioner af samme studieordning:

[Curriculum for the Master's Programme in Sustainable design - 2013 - Copenhagen](#)

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## **§ 1: PREFACE**

Pursuant to Act 261 of March 18, 2015 on Universities (the University Act) with subsequent changes, the following curriculum is established. The programme also follows the Joint Programme Regulations and the Examination Policies and Procedures for The Faculty.

## **§ 2: BASIS IN MINISTERIAL ORDERS**

The Master's programme is organised in accordance with the Ministry of Higher Education and Science's Order no. 1061 of June 30, 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.

## **§ 3: CAMPUS**

The programme is offered in Copenhagen.

## **§ 4: FACULTY AFFILIATION**

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

## **§ 5: STUDY BOARD AFFILIATION**

The Master's programme falls under Studyboard for Techno-Anthropology and Sustainable Design

## **§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS**

The Master's programme is associated with the external examiners corps on Nationwide engineering examiners/Design

## **§ 7: ADMISSION REQUIREMENTS**

### **Applicants with a legal right of admission (retskrav)**

- Bachelor of Science in Sustainable Design (AAU)

### **Applicants with one of the following degrees are entitled to admission:**

- Design and Innovation (DTU)
- Integrated Design (SDU)
- Architecture and Design, specialisation in Industrial Design (AAU)

### **Applicants without legal right of admission**

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.

## **§ 8: THE PROGRAMME TITLE IN DANISH AND ENGLISH**

The Master's programme entitles the graduate to the Danish designation *Civilingeniør, cand.polyt. i bæredygtigt design*. The English designation is: Master of Science (MSc) in Engineering (Sustainable Design).

## **§ 9: PROGRAMME SPECIFICATIONS 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.

## **§ 10: 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**

The Study Board can approve successfully completed (passed) programme elements from other Master's programmes in lieu of programme elements in this programme (credit transfer). The Study Board 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 Study Board based on an academic assessment. See the Joint Programme Regulations for the rules on credit transfer.

## **§ 11: EXEMPTIONS**

In exceptional circumstances, the Study Board 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.

## **§ 12: RULES FOR EXAMINATIONS**

The rules for examinations are stated in the Examination Policies and Procedures published by the faculty on their website.

## **§ 13: 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 formulation and spelling 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 Study Board 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 (or another foreign language: French, Spanish or German upon approval by the Study Board). If the project is written in English, the summary must be in Danish (The Study Board can grant exemption from this). The summary must be at least 1 page and not more than 2 pages (this is not included in any fixed minimum and maximum number of pages per student). The summary is included in the evaluation of the project as a whole.

## **§ 14: REQUIREMENTS REGARDING THE READING OF TEXTS IN A FOREIGN LANGUAGE**

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

## **§ 15: COMPETENCE PROFILE ON THE DIPLOMA**

The following competence profile will appear on the diploma:

A Candidatus graduate has the following competency profile:

A Candidatus graduate has competencies that have been acquired via a course of study that has taken place in a research environment.

A Candidatus graduate is qualified for employment on the labour market based on his or her academic discipline as well as for further research (PhD programmes). A Candidatus graduate has, compared to a Bachelor, developed his or her academic knowledge and independence so as to be able to apply scientific theory and method on an independent basis within both an academic and a professional context.

## **§ 16: COMPETENCE PROFILE OF THE PROGRAMME**

The following competence profile on the diploma:

**A Candidatus graduate has the following competency profile:**

A Candidatus graduate has competencies that have been acquired via a course of study that has taken place in a research environment.

A Candidatus graduate is qualified for employment on the labour market on the basis of his or her academic discipline as well as for further research (PhD programmes). A Candidatus graduate has, compared to a Bachelor, developed his or her academic knowledge and independence so as to be able to apply scientific theory and method on an independent basis within both an academic and a professional context.

**The graduate of the Master's programme will acquire the following competencies:**

### Knowledge

- Has knowledge, which in chosen areas, is based on the highest international level of research, within the following areas:
  - Sustainable design
  - Innovation and organizational change processes
  - Staging participatory design
  - Entrepreneurship and market creation
  - Can understand and critically respond to these knowledge fields and their methodologies, as well as identify scientific problem areas within and across them

### Skills

- Master engineering and science related methods, methods from innovation studies and methods from network-based analysis of organizations, institutional and interest related context and can with these analyze sustainable technological innovation
- Can critically consider above-mentioned theories and methods, develop new models for sustainable technological innovation and in collaboration with networks of different actors transform these into strategic plans of action
- Can discuss and communicate professional and scientific issues regarding sustainable innovation with technical experts, decision-makers, senior executives, government officers, NGO's and various users

### Competencies

- Can manage work- and development situations that are complex, unpredictable and require new solutions
- Can independently initiate and complete professional and cross-disciplinary collaboration and take a professional responsibility within design- and transition processes
- Can independently take responsibility for own professional and cross-disciplinary development within the scientific fields of design, technology and sustainability

## § 17: STRUCTURE AND CONTENTS OF THE PROGRAMME

The programme is structured in modules and organised as a problem-based study. A module is a program element or a group of program 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.

### Teaching methods and exams

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
- instructions
- project work
- work in laboratories and workshops
- experimentations
- workshops
- exercises (individually and in groups)
- teacher feedback
- reflections
- portfolio work

- external activities
- case work
- peer assessment
- study groups

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).

### Curriculum content

The Master's program is an engineering education with special emphasis on design and development and innovation of sustainable solutions. The program includes interdisciplinary components to satisfy the need for combining methods from social science and technology studies with technical subjects and design practices.

The education will provide the student with the ability to understand, stage and carry out innovative processes leading to design and the implementation of sustainable products, services and socio-material system solutions through involving relevant actors.

The programs' focus on sustainability is reflecting the challenges that development, production, consumption and dismantling of technologies poses for resource utilization and climate. It builds on the broad notion of sustainability that includes the environment, the social and the economy. The realization of these societal goals implies a focus on sustainable transitions in a design perspective as the core to the program's activities.

### Completion of the Master's programme

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

## § 18: OVERVIEW OF THE PROGRAMME

The tabel below shows all project and course modules on the master program, the amount of ECTS's and the assessment for each.

Offered as: 1-professional					
Study programme: Sustainable Design					
Module name	Course type	ECT S	Applied grading scale	Evaluation method	Assessment method
<b>1 SEMESTER</b>					
<a href="#">Conceptualisation of Sustainable Value Chains</a>	Project	15	7-point grading scale	Internal examination	Written and oral exam
<a href="#">Design in Organisations</a>	Course	5	7-point grading scale	Internal examination	Written or oral exam
<a href="#">Market Creation</a>	Course	5	7-point grading scale	Internal examination	Written or oral exam
<a href="#">Electives 1. sem</a>	Course	5			
<b>2 SEMESTER</b>					
<a href="#">Design Strategies as Responses to Wicked Problems</a>	Project	20	7-point grading scale	External examination	Written and oral exam
<a href="#">Sustainable Transition</a>	Course	5	7-point grading scale	Internal examination	Written or oral exam
<a href="#">Staging Participatory Design</a>	Course	5	7-point grading scale	Internal examination	Written or oral exam
<b>3 SEMESTER</b>					
Version A					

<a href="#">Design Research Project</a>	Project	30	7-point grading scale	Internal examination	Oral exam based on a project
<b>3 SEMESTER</b> Version B					
<a href="#">Internship</a>	Project	30	7-point grading scale	Internal examination	Oral exam based on a project
<b>3 SEMESTER</b> Version C					
<a href="#">International Design Project</a>	Project	30	7-point grading scale	Internal examination	Oral exam based on a project
<b>3 SEMESTER</b> Version D					
Semester at another university		30			
<b>4 SEMESTER</b>					
<a href="#">Master's Thesis</a>	Project	30	7-point grading scale	External examination	Oral exam based on a project

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

**1st semester: Conceptualisation of Sustainable Value Chains**

On this semester the focus is on conceptualising sustainable value chains related to organisation, economics and market. The organisational context that design and innovation processes are happening in is introduced through the course module *Design in organisations* and the economic dimension of design is introduced through the course module *Market creation*. The students are to choose between two elective modules: *Distributed technological design* and *Design for sustainability*. In the project module *Conceptualisation of sustainable value chains*, the students use knowledge gained from the two course modules and the selected elective module and explore how sustainable value chains can be realised in organisations and on the market, with point of departure in a realistic problem definition.

**2nd semester: Design Strategies as Responses to Wicked Problems**

On this semester the focus is on design strategies as responses to wicked problems and how it is possible to tackle these wicked problems through a design approach. In the course module *Staging participatory design*, the students will learn strategies for how to stage design processes, and the course module *Sustainable transition focuses on how to stage larger transition processes*.

**3rd semester: Holistic Design**

On this semester the students are given the opportunity to take a semester at another university, carry out a design project in an international context, carry out a design research project or do an internship in a company or organization.

**4th semester: Master Thesis**

At the last semester the students are to carry out their master thesis. It is free for the students to choose topic and collaboration partner themselves, as long as it is related to sustainable design challenges.

The figure below shows a schematic view of the master program.

Point		5	10	15	20	25	
Semester	1	Conceptualisation of Sustainable Value Chains			Design in Organisations	Market creation	Distributed Technological Design for Sustainability



2	Design Strategies as Responses to Wicked Problems	Staging Participatory Design	Sustainable
3	Design Research Project		
	Internship		
	International Design Project		
	Semester at another University		
4	Master Thesis		

### Elective modules

During the master program the students have one elective course module at the first semester. Further, at the 3rd semester, the students have the possibility to choose between 4 options: 1) carry out a Design research project, 2) do a Internship, 3) carry out an International design project or 4) study a whole semester at another university.

Electives 1. sem					
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method
<a href="#">Distributed Technological Design</a>	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
<a href="#">Design for Sustainability</a>	Course	5	7-point grading scale	Internal examination	Written or oral exam

### § 19: 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.

### § 20: COMMENCEMENT AND TRANSITIONAL RULES

The curriculum is approved by the dean and enters into force as of 1. september 2017 - for both 1st and 3rd semester.

### § 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS

Minor editorial changes have been made in connection with the digitalisation of the curriculum.