AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN SUSTAINABLE DESIGN - 2013 - COPENHAGEN

MASTER OF SCIENCE (MSC) IN ENGINEERING
COPENHAGEN

Link to this studyline

Link(s) to other versions of the same line:

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

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§ 1: PREFACE

Pursuant to Act 652 of June, 24, 2012 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's programme in Sustainable 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.

§ 2: BASIS IN MINISTERIAL ORDERS

The Master’s programme is organized in accordance with the Ministry of Science’s Ministerial Order no. 814 of June 29, 2010 on Bachelor’s and Master’s Programs at Universities (the Ministerial Order of the Study Programs) and Ministerial Order on University Examinations (the Examination Order) with subsequent changes. Further reference is made to the Admission Order and the Grading Scale Order with subsequent changes.

§ 3: CAMPUS

The programme is offered in Copenhagen.

§ 4: FACULTY AFFILIATION

The Master’s programme falls under The Technical Faculty of IT and Design.

§ 5: STUDY BOARD AFFILIATION

The Master’s programme falls under Study Board of 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

Admission to the Master’s program in Sustainable design requires a Bachelor’s degree in Sustainable design, design and innovation, industrial design, interaction design or the like.

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.

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

§ 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

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.

§ 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 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 graduatehas 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.

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

Knowledge

- Has knowledge, which in chosen areas, is based on the highest international level of research, within the following areas:
  - Sustainable design
  - Innovation processes
  - Practice theory
  - User-oriented design
- Can understand and critically respond to these knowledge fields and their methodologies, as well as identify scientific problem areas within and across them

Skills

- Masters 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 a, NGO's and the remaining population

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 program 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
- classroom instruction
- project work
- work in laboratories and workshops
- experimentation
- workshops
- exercises (individually and in groups)
- teacher feedback
- reflection
- 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 or by assessment by the supervisor only).

Curriculum content

The masters program is an engineering education with special emphasis on design and the 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 practice.

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 an 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 that include the systems approach that is core to the program's activities.

§ 18: OVERVIEW OF THE PROGRAMME

Overview of program and semesters

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

Offered as: 1-professional Study programme: Sustainable Design					
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method
1 SEMESTER					
Exploring design and innovation possibilities	Project	15	7-point grading scale	Internal examination	Written and oral exam
Design in Organisations	Course	5	7-point grading scale	Internal examination	Written exam
Market Creation	Course	5	Passed/Not Passed	Internal examination	Written exam
Electives 1. sem	Course	5			
2 SEMESTER					
Sustainability challenges	Project	15	7-point grading scale	External examination	Written and oral exam
Sustainable consumption	Course	5	7-point grading scale	Internal examination	Written and oral exam
Project economy	Course	5	Passed/Not Passed	Internal examination	Written exam
Electives 2. sem	Course	5			
3 SEMESTER Version A					
Design Project	Project	20	7-point grading scale	Internal examination	Written exam
Concept driven change	Course	10	7-point grading scale	Internal examination	Written and oral exam
3 SEMESTER Version B					
International Design Project	Project	20	7-point grading scale	Internal examination	Written exam
Introduction to Engineering Work in Multicultural Environments	Course	5	Passed/Not Passed	Internal examination	Written exam
Society and Development – A Country Study	Course	5	Passed/Not Passed	Internal examination	Written exam
3 SEMESTER					

Version C					
Semester at another university		30			
4 SEMESTER					
Master's Thesis	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: Exploring design and innovation possibilities

On this semester the focus is on exploring design and innovation possibilities in relation 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 select between two elective modules: *Staging co-design* and *Sustainable design*. In the project module *Exploring design and innovation possibilities,* the students use knowledge gained from the two course modules and the selective elective module and explore how design and innovation can be realised in organisations and on the market, with point of departure in a realistic problem definition.

2nd semester: Sustainability challenges

On this semester the focus is on sustainability challenges and how it is possible to face these challenges through a design approach. In the course module *Sustainable consumption* the user and the users' behaviour with regards to sustainability is introduced.

The students are to select between the two elective modules: *People centred design* and *Sustainable transition*. In the project module *Sustainability challenges*the students will be given a sustainability challenge to work with that fits with the selective elective module.

3rd semester: Holistic design

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

International design project

If the students choose to do an international design project the two electives available this semester will be used for two specific elective courses that will prepare the students for travelling to a foreign country and engage with locals during a design project.

Research project

If the students choose to do a research project the 10 elective ETCS credits will be used for taking the course module *Concept driven change* that feeds the students with knowledge about design concepts and how they can drive change in companies. This the students will use to do their research project in a large company context.

The figure below shows a schematic view of the masterprogram. The green modules are project modules. They are supported by the grey course modules.

Point		5	10	15	20	25
Semester	1	Exploring design and innovation possibilities		Design in organisations	Market creation	Staging co-de
						Sustainable d
	2	Sustainability challenges		Sustainable consumption	Project economy	People centre design

			Sustainable transition
3	International design project	Introduction to engineering work in multicultural environments	Society and development country study
	Design project	Concept driven change	
	Semester at another university		
4	Master thesis		

Elective modules

During the master program the students have two elective course modules, one on the first semester and one on the second semester. In both semesters two courses are offered to choose from. In the first these are: Staging co-design and Sustainable design, while they in the second semester are: People centred design and Sustainable transition.

Electives 1. sem					
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method
Staging co-design	Course	5	Passed/Not Passed	Internal examination	Written and oral exam
Sustainable design	Course	5	7-point grading scale	Internal examination	Written exam

Electives 2. sem					
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method
People centred design	Course	5	7-point grading scale	Internal examination	Written and oral exam
Sustainable Transition	Course	5	7-point grading scale	Internal examination	Written 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 of the Faculty of Engineering and Science and enters into force as of 1st September 2013.

In accordance with the Framework Provisions and the Handbook on Quality Management 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.

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

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS

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