AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN INDUSTRIAL DESIGN CAND.TECH., 2016

MASTER OF SCIENCE (MSC) IN TECHNOLOGY
AALBORG

Link to this studyline

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

Curriculum for Master of Science (MSc) in Technology in Industrial Design, Cand.scient.techn., 2013, Version 2
Curriculum for the Master’s Programme in Industrial Design Cand.tech, 2015

TABLE OF CONTENTS

§ 1: 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 Industrial Design is stipulated. The programme also follows the Joint Programme Regulations and the Examination Policies and Procedures for the Faculty of Engineering and Science.

Commencement of this curriculum is 1. September 2016.

§ 2: BASIS IN MINISTERIAL ORDERS

The Master's programme is organised in accordance with the Ministry of Higher Education and Science's Order no. 1520 of December 16, 2013 on Bachelor's and Master's Programmes at Universities (the Ministerial Order of the Study Programmes) and Ministerial Order no. 670 of June 19, 2014 on University Examinations (the Examination Order) with subsequent changes. 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 Aalborg.

§ 4: FACULTY AFFILIATION

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

§ 5: STUDY BOARD AFFILIATION

The Master's programme falls under Study Board of Architecture and 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

All students applying must document English language qualifications comparable to an 'English B level' in the Danish upper secondary school (minimum average grade 02).

Applicants with a legal claim to admission (retskrav):
Aalborg University has no programme with legal claim to admission.

Applicants without legal claim to admission:
Applicants with the following degree meet the admission requirements: Bachelor of Science (BSc) in Engineering (Architecture or Design), Aalborg University.

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 designation Cand.tech. i industrielt design. The English designation is: Master of Science (MSc) in Technology (Industrial 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 at this website: https://www.studieservice.aau.dk/Studielegalitet/

§ 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 graduate of the Master's programme:

Knowledge

- Must have a broad knowledge of theories, methods and practices associated with the professions of engineering, architecture and design combined with a knowledge of methods and practices associated with the

professionalisms of engineering, architecture and design ranging from the design component to the building section to the city as a whole
- Must have advanced knowledge of analytical approaches to technical and societal aspects 'of the profession
- Must have a broad knowledge of both analogue and digital tools for the development and representation of design
- Must have extensive knowledge of the methods and theories of engineering related design applied to the styling of design components, building parts, buildings and entire building developments
- Must have an advanced knowledge of periods, theories, works and principal figures in the history of general design
- Must be able to account for research and practice based knowledge about the field of industrial design in an integrated engineering perspective and is able to reflect and communicate this
- Must be able to understand and explain systematic and scientific rigor, as applied in engineering sciences and be able to apply these in reasoning and methodological reflection in and on the process of development
- Must be able to explain, analyse, apply and reflect on a creative combinations of methods, technologies and approaches from various engineering fields in order to create new solutions
- Must have a broad cross disciplinary insight in Industrial design engineering design processes and business processes and how to manage these

Skills

- Must be able to demonstrate the ability to make advanced integrated design* proposals at different scales
- Must be able to practically apply theories, methods and tools within industrial design and to apply skills associated with employment within the fields of engineering and architecture on a scientific basis
- Must be able to assess theoretical and practical problems and to select and motivate relevant solutions in architecture, design and engineering on the basis of scientific methods
- Must be able to communicate disciplinary problems and solutions to both peers and non-specialists as well as to collaborators and users, and to analyse and understand the connections between design, architecture, cities and society as a whole
- Must able to apply advanced theories and methods in technical fields of knowledge such as planning, construction, technique and climatology
- Must excel in organizing the design process, from the strategic scope to construction and product maturation, adjusting the approach to the demands of the situation
- Must excel in revealing and integrating explicit or tacit user needs and synthesize these needs and market opportunities into innovative integrated solutions**, in non-standard situations with complex and ill-defined problems
- Must be able to design by integrating a desired expression and experience through form and function into technical sound products, constructions and solutions, with due consideration to state of the art technology, manufacturing abilities, costs and configuration of supply chain
- Must be able to apply scientific methods and techniques in the development of products*** and in doing research that may contribute to research projects and to the development of new knowledge and new business opportunities
- Must demonstrate high skills in communicating complex problems and solutions to both peers and non-specialists

* Integrated Design: The process is fundamentally a technical and scientific product development process, in which analysis and synthesis of social and human science aspects in relation to needs, sales and use of products and solutions are systematically and methodically integrated through external validation and abductive reasoning, capable of handling wicked problems and open-ended processes..

** Solution: Refer to a broader proposal encompassing business modelling, strategies, network organisation and possible service elements

*** Products: Broader interpretation of a product and may include immateriel components

Competencies

- Must be able to handle and manage complex and development-oriented situations in relation to both study and work
- Must be able with a professional approach independently and with demonstrable overview to participate in professional and interdisciplinary cooperation in the fields of engineering, architecture and design
- Must be able to identify own learning needs and structure own learning in various learning environments with a view to solving new types of problems
- Must possess high-level professional competencies in the intersection between the disciplines of engineering, architecture and design

- Must be able to independently and professionally manage and facilitate a design process that integrates engineering disciplines in order to design innovative solutions that include both technical rigor and design features
- Must be able to recognize the relevant disciplines and aspects like functionality, technology, aesthetics, use, market and marketing, manufacturing, logistics, consumer, business and sustainability and is able to integrate and synthesise these aspects in the design and development of products
- Must be able to review and assess integrated solutions while taking into account both engineering, design and business perspectives

* Integrated Design: Is a methodic process where research and evidence based knowledge is continuously applied and integrated through a succession of engineering, design and architectural based theories and methods throughout the design process of the project

§ 17: STRUCTURE AND CONTENTS OF THE PROGRAMME

The programme is structured in modules and organized as a problem-based study. A module is a program 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 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

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).

Minimum 95 ECTS are evaluated by 7-point scale, and minimum 45 ECTS are evaluated with an external examiner.

§ 18: OVERVIEW OF THE PROGRAMME

Offered as: 1-professional Study programme:					
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method
1 SEMESTER					
Advanced Integrated Design: Pre-phase	Course	5	7-point grading scale	Internal examination	Written or oral exam
Component Construction	Course	5	7-point grading scale	Internal examination	Written or oral exam
Production and Economy	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Corporate Product Development	Project	15	7-point grading scale	Internal examination	Oral exam based on a project
2 SEMESTER					

Advanced Integrated Design: Business Development	Course	5	7-point grading scale	Internal examination	Written or oral exam
Technology and Form	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Sector Product Development	Project	20	7-point grading scale	External examination	Oral exam based on a project
3 SEMESTER 3. semester Version A (Project Management in Industrial Design Engineering and Research, Advanced Simulation Methods: Process Management, Advanced Simulation Methods: Technology Interaction and Advanced Simulation Methods: Ergonomic Design and Simulation Interaction are electives)					
3rd Semester Elective Courses Choose 2 courses	Course	10			
Engineering in the Design Field: Value, Method and Approach	Project	20	7-point grading scale	Internal examination	Oral exam based on a project
3 SEMESTER 3 semester Version B					
Project Management in Industrial Design Engineering and Research	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Academic Internship	Project	25	7-point grading scale	Internal examination	Oral exam based on a project
3 SEMESTER 3 semester Version C - Study Abroad*					
3-4 SEMESTER 3 semester Version D					
Long Master's Thesis	Project	60	7-point grading scale	External examination	Master's thesis/final project
4 SEMESTER					
Master's Thesis	Project	30	7-point grading scale	External examination	Master's thesis/final project

3rd Semester Elective Courses
Choose 2 courses

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method
Project Management in Industrial Design Engineering and Research	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Advanced Simulation Methods: Process Management	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Advanced Simulation Methods: Technology Interaction	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Advanced Simulation Methods: Ergonomic Design and Simulation Interaction	Course	5	Passed/Not Passed	Internal examination	Written or oral exam

On 3rd semester the student must choose between version A, B, C og D.

*3rd semester Version C: If the student wants to study abroad the Study Board recommends this in the third semester. The student must apply for a preapproval of credit transfer by the Study Board of Architecture and Design.

§ 19: ADDITIONAL INFORMATION

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. If the project is written in English, the summary must be in Danish. 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.

[1] Or another foreign language (upon approval from the Board of Studies).

[2] The Board of Studies can grant exemption from this.

Rules concerning credit transfer (merit), including the possibility for choice of modules that are part of another program at a university in Denmark or abroad
In the individual case, the Board of Studies can approve successfully completed (passed) program elements from other Master's programs in lieu of program elements in this program (credit transfer). The Board of Studies can also approve successfully completed (passed) program elements from another Danish program or a program outside of Denmark at the same level in lieu of program elements within this curriculum. Decisions on credit transfer are made by the Board of Studies based on an academic assessment. See the Joint Programme Regulations for the rules on credit transfer.

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.

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

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

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

Evaluation formats for the Bachelor and Master programmes under the Board of Studies for Architecture and Design, School of Architecture, Design and Planning.

Please refer to the semester description of the relevant semester and module for further descriptions of the chosen evaluation format.

Evaluation format C – Oral examination based on project report with external examination:
The module is assessed by an oral assessment based on written material, typically a jointly prepared (or in exceptional cases, prepared by the individual student) project module report (containing the report/analyzes/posters/drawings/models or similar) where the individual examinee's contribution is not indicated.

The module is assessed with external examination.

Evaluation format P – Oral examination based on project report with internal examination:
The module is assessed by an oral assessment based on written material, typically a jointly prepared (or in exceptional cases, prepared by the individual student) project module report (containing the report/analyzes/posters/drawings/models or similar) where the individual examinee's contribution is not indicated.

The module is assessed with internal examination.

Evaluation format L –Oral or written assessment.

Comprising of:

Evaluation format La –Oral assessment:
The module is assessed with an oral assessment based on the objectives for the module.

Evaluation format Lb – Oral assessment:
The module is assessed with an oral exam based on the objectives for the course module.

The examinee pulls a known and predefined question, after which the assessment begins.

Evaluation format Lc – Oral assessment:
The module is assessed with an oral exam based on the objectives for the course module.

The examinee pulls a question, gets preparation time, after which the assessment begins.

Evaluation format Ld – Written assessment:
The module is assessed with a written assignment based on central parts of the objectives for the course module through one or more written assignments (including reports/analyses/posters/drawings/models or the like).

A written assignment is developed during the execution of the course module.

The written material must be digitally uploaded to the directory assigned by the semester secretary. This according to the current delivery requirements in the Semester Description.

Evaluation format Le – Written assessment:
The module is assessed with a written assignment based on central parts of the objectives for the course module.

A written assignment given by the end of the course module and completed within a defined time frame.

The written material must be digitally uploaded to the directory assigned by the semester secretary. This according to the current delivery requirements in the Semester Description.

Evaluation format Lf – Oral or written assessment:
You can choose between P and L (La,Lb,Lc and Ld)

Evaluation format V – Regular and active participation:
The module is passed by the student's regular and active participation in teaching/ evaluation seminars or the like and by compliance with the assignment requirements of the module.

The module is assessed by internal assessment.

§ 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 September 2016.

Students who wish to complete their studies under the previous curriculum from 2015 must conclude their education by the summer examination period 2017 at the latest, since examinations under the previous curriculum are not offered after this time.

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS

Minor editorial changes have been made in connection with the digitisation of the study Curriculum.

On December 5, 2019, the Pro-dean has approved the following changes on 2nd semester valid for spring 2020:

- The module 5 ECTS module "Flexible Automation" is discontinued
- The project module "Sector Product Development" changes from 15 ECTS to 20 ECTS