AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME (CAND.TECH.) IN ARCHITECTURE, 2020

MASTER OF SCIENCE (MSC) IN TECHNOLOGY
AALBORG

Link to this studyline

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

Curriculum for the Master’s program in Architecture, Cand.tech, 2017

TABLE OF CONTENTS

§ 1: PREFACE

Pursuant to consolidation Act 778 of August 7, 2019 on Universities (the University Act), the following is established. The programme also follows the Joint Programme Regulations and the Examination Policies and Procedures for Aalborg University.

§ 2: BASIS IN MINISTERIAL ORDERS

The Master's programme is organised in accordance with the Ministry of Higher Education and Science's Order no. 20 of January 9, 2020 on Bachelor's and Master's Programmes at Universities (the Ministerial Order of the Study Programmes) and Ministerial Order no. 22 of January 9, 2020 on University Examinations (the Examination Order). Further reference is made to Ministerial Order no. 153 of February 26, 2020 (the Admission Order) and Ministerial Order no. 114 of February 3, 2015 (the Grading Scale Order).

§ 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

Applicants with a legal right of admission (retskrav)

Aalborg University has no programme with legal right of admission.

Applicants without legal right of admission

Bachelor's programmes qualifying students for admission:

- Bachelor of Science (BSc) in Engineering (Architecture and Design with specialisation in Architecture and Urban Design), AAU
- Bachelor of Science (BSc) in Architectural Engineering, DTU
- Bachelor of Science (BSc) in Engineering (Civil Engineering), DTU
- Bachelor of Engineering (BEng) in Architectural Engineering, DTU
- Bachelor of Engineering (BEng) in Civil Engineering, SDU

All applicants without a legal right must prove that their English language qualifications is equivalent to level B (Danish level) in English

§ 8: THE PROGRAMME TITLE IN DANISH AND ENGLISH

The Master's programme entitles the graduate to the Danish designation Cand.tech. i arkitektur. The English designation is: Master of Science (MSc) in Technology (Architecture).

§ 9: PROGRAMME SPECIFICATIONS IN ECTS CREDITS

The Master's programme is a to-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 that passed programme elements from other educational programmes at the same level replaces programme elements within this programme (credit transfer).

Furthermore, the Study Board can, upon application, approve that parts of this programme is completed at another university or a further education institution in Denmark or abroad (pre-approval of credit transfer).

The Study Board's decisions regarding credit transfer are based on an academic assessment.

§ 11: EXEMPTIONS

The Study Board's possibilities to grant exemption, including exemption to further examination attempts and special examination conditions, are stated in the Examination Policies and Procedures published at this website: https://www.studyservice.aau.dk/rules

§ 12: RULES FOR EXAMINATIONS

The rules for examinations are stated in the Examination Policies and Procedures published at this website: https://www.studyservice.aau.dk/rules

§ 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. If the project is written in English, the summary can be in Danish. 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 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 graduate of the Master's programme

Knowledge

- Must have a broad knowledge of theories, methods and practices associated with the professions of design-engineering, architecture and sustainable design - ranging from the building design component to the building section, site conditions, and the building as a whole.

- Must have advanced knowledge of integrated design* methods as well as analytical and creative-iterative approaches to the design of tectonic- and sustainable buildings of high architectural quality.
- Must have knowledge about computational design and detailed understanding of both analogue and digital tools for the analysis, simulation, basic calculation, modelling, and communication of tectonic and sustainable architectural design.
- Must have extensive knowledge of the methods and theories of sustainable design-engineering (structural design, indoor climate, energy use, certification, planning and legislation) applied to the styling and/or optimisation of design components, building parts, buildings and entire building developments.
- Must have knowledge about and comprehension of the ethics and role of tectonic and sustainable architectural design related to the interaction and impact on environment, society and human well-being.
- Must have an advanced knowledge of periods, theories, works and principal figures in the history of architecture, design-engineering, urban and sustainable design, as part hereof understanding technical, aesthetic, environmental, human, cultural and societal aspects of the built environment.
- Must have knowledge on a scientific basis to identify and reflect on different scientific problems within tectonic and sustainable architectural design based on the highest international research and references in these areas.
- Must have knowledge of theories of science and methodological foundation of tectonic and sustainable architectural design, as well as explain and reflect upon potentials and limitations of relevant related theories, methods and tools.
- Must have extensive knowledge of problem-based learning (PBL) * and the professional management of complex, interdisciplinary and team-based work processes across problem identification to problem solving.

Skills

- Master the ability to plan and develop advanced integrated design* proposals at different scales and of high architectural quality, combining fields of architecture, design-engineering and sustainable design.
- Master the ability to explain, evaluate, select among and apply different scientific theories, methods, and tools across fields of architecture, engineering, and sustainable design.
- Must be able to independently identify and frame complex design related problems, as well as prepare and motivate relevant design solutions across fields of architecture, engineering and sustainable design.
- Must independently be able to analyse, explain and critically reflect on the connections between the fields of architecture, engineering, and sustainable design, as well as relate this to the general impact on cities, environment, society and humans as a whole.
- Must be able to use correct terminology and apply advanced theories and methods in technical-engineering fields of knowledge such as passive strategies, sustainability certifications, construction management, structural design, indoor environment, acoustics, energy consumption, and climatology.
- Must be able to plan, analyse and perform basic calculations on the dimensions of a buildings' basic structural system, indoor environment and energy performance.
- Master the scientific theories, methods, tools and general skills related and relevant to Tectonic and Sustainable architecture.
- Must be able to use and communicate in the newest relevant digital tools for 2D and 3D modelling, mapping, analysis, calculation, simulation, visualization, computation and parametric design.
- Master the communication of research-based knowledge and discussion of scientific problems with both peers and non-specialists in a professional and independent way.

Competencies

- Must be able to independently identify, develop and critically reflect on advanced integrated design proposals that fulfill all predefined criteria and target values regarding engineering, sustainable design and high architectural quality on an international level.
- Can independently identify, develop and critically evaluate engineering related problems and technically sound design proposals, as well as understand relationships between society, cultural issues and built environment.
- Must be able to participate in and independently implement experimental work and develop innovative solutions using scientific methods at the intersection between the disciplines of engineering, architecture and sustainable design.
- Can independently take responsibility for own professional development and specialization, as well as identify own learning needs and structure own learning in various learning environments.
- Can independently initiate, handle and take leadership in the planning, implementation and management of complex, development-oriented and unpredictable tasks with a professional responsibility and in interdisciplinary collaborations.
- Master proper terminology in oral, written and graphical communication and document scientific problems and design solutions in the integrated architectural design of buildings.
- Master with a professional approach different kinds of projects and team configurations, from discipline-oriented to cross-disciplinary, multi-disciplinary and interdisciplinary projects in intercultural contexts.

§ 17: STRUCTURE AND CONTENTS OF THE PROGRAMME

The program is structured in modules and organized 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.

The program 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

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.

§ 18: OVERVIEW OF THE PROGRAMME

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).

Offered as: 1-professional						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						
Advanced Integrated Design I: Sustainable-tectonic Design with Integrating of Structure, Site and Climate Conditions (AODAM1K201)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English
Advanced Integrated Design II: Green Building Strategies with Focus on Energy and Emission Assessment (AODAM1K202)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English
Sustainable-Tectonic Architecture: Integrating Social Sustainability and Climate Impact (AODAM1P203)	Project	20	7-point grading scale	Internal examination	Oral exam based on a project	English
2 SEMESTER						
Electives on 2nd Semester Choose 2 courses	Course	10				
Explorations and Experiments in Sustainable-Tectonic Architectural Design (AODAM2P205)	Project	20	7-point grading scale	External examination	Oral exam based on a project	English
3 SEMESTER						
	Course	5				

Electives on 3rd Semester Choose 1 course						
Independent Choice: Research, Practice or Development in Architectural Design-engineering (AODAM3P202)	Project	25	7-point grading scale	Internal examination	Oral exam based on a project	English
4 SEMESTER						
Master's Thesis (AODAM4P201)	Project	30	7-point grading scale	External examination	Master's thesis/final project	English

Electives on 2nd Semester
Choose 2 courses

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Advanced Integrated Design III-A: Critical-experimental Studies in Computation and Performance-aided Design to Support Sustainable-tectonic Design Thinking (AODAM2K201)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English
Advanced Integrated Design III-B: Critical-experimental Studies in Acoustics and Materiality to Support Sustainable-tectonic Design Thinking (AODAM2K202)	Course	5	Passed/Not Passed	Internal examination	Oral exam based on a project	English
Advanced Integrated Design III-C: Critical-experimental Studies in Life Cycle Assessment and Materiality to Support Sustainable-tectonic Design Thinking (AODAM2K203)	Course	5	Passed/Not Passed	Internal examination	Oral exam based on a project	English
Advanced Integrated Design III-D: Critical-experimental Studies in Social Sustainability, Health and Wellbeing to Support Sustainable-tectonic Design Thinking (AODAM2K204)	Course	5	7-point grading scale	Internal examination	Oral exam based on a project	English

Electives on 3rd Semester
Choose 1 course

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Academic Paper Writing (AODUM3K201)	Course	5	Passed/Not Passed	Internal examination	Written exam	English
Advanced Integrated Design IV: Extended Construction Management, Project Design and Life Cycle Cost Estimates (AODAM3K201)	Course	5	Passed/Not Passed	Internal examination	Oral exam	English

NOTE: Elective courses will only be offered if 12 students or more register for the course during the registration period. Students will be offered other options if a chosen course is not offered.

§ 19: ADDITIONAL INFORMATION

All students who have not participated in Aalborg University's PBL introductory course during their Bachelor's degree must attend the introductory course "Problem-based Learning and Project Management". The introductory course must

be approved before the student can participate in the project exam. For further information, please see www.create.aau.dk/education/.

§ 20: COMMENCEMENT AND TRANSITIONAL RULES

The curriculum is approved by the dean and enters into force as of 01.09.2020

The Study Board does not offer teaching after the previous curriculum from 2019 after the summer examination 2021.

The Study Board will offer examinations after the previous curriculum, if there are students who have used examination attempts in a module without passing. The number of examination attempts follows the rules in the Examination Order.

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS

On 7th September 2021 the Vice-Dean of Education has approved, that the type of exam in the module *"Advanced Integrated Design IV: Extended Construction Management, Project Design and Life Cycle Cost Estimates"* on the 3rd Semester is changed from "Oral exam based on a project" to "Oral". The amendment is valid from Autumn 2021.

On 16th March 2022 the Vice-Dean of Education has approved the addition of an elective block in the 3rd semester, where students can choose between the modules *"Academic Paper Wtiting"* or *"Advanced Integrated Design IV: Extended Construction Management, Project Design and Life Cycle Cost Estimates".* The amendment is valid from autumn 2022.

The Vice dean of Education has on February 12, 2025, approved that the prerequisite for enrollment for the exam is erased in the module *Explorations and Experiments in Sustainable-Tectonic Architectural Design,* valid from Spring 2025.