



AALBORG UNIVERSITET

**CURRICULUM FOR THE MASTER'S
PROGRAMME IN TECHNOLOGY
(CONSTRUCTION MANAGEMENT AND
BUILDING INFORMATICS), 2018**

MASTER OF SCIENCE (MSC) IN TECHNOLOGY
AALBORG

Curriculum for the Master's Programme in Technology (Construction Management and Building Informatics), 2018

[Link til denne studieordning](#)

INDHOLDSFORTEGNELSE

§ 1: Preface	4
§ 2: Basis in Ministerial orders	4
§ 3: Campus	4
§ 4: Faculty affiliation	4
§ 5: Study board affiliation	4
§ 6: Affiliation to corps of external examiners	4
§ 7: Admission requirements	4
§ 8: The programme title in Danish and English	5
§ 9: Programme specifications in ECTS credits	5
§ 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	5
§ 11: Exemptions	5
§ 12: Rules for examinations	5
§ 13: Rules concerning written work, including the Master's Thesis	5
§ 14: Requirements regarding the reading of texts in a foreign language	5
§ 15: Competence profile on the diploma	5
§ 16: Competence profile of the programme	6
§ 17: Structure and Contents of the programme	7
§ 18: Overview of the programme	8
§ 19: Additional information	9
§ 20: Commencement and transitional rules	9
§ 21: Amendments to the curriculum and regulations	9

§ 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 of Engineering and Science, The Faculty of Medicine and The Technical Faculty of IT and Design.

§ 2: BASIS IN MINISTERIAL ORDERS

The Master's programme 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. 111 of January 30, 2017 (the Admission Order) and Ministerial Order no. 114 of February 3, 2015 (the Grading Scale Order) with subsequent changes.

§ 3: CAMPUS

The Master's programme is offered in Aalborg.

§ 4: FACULTY AFFILIATION

The Master's programme falls under the Faculty of Engineering and Science, Aalborg University.

§ 5: STUDY BOARD AFFILIATION

The Master's programme falls under the Study Board of Civil Engineering.

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

The Master's programme falls under the external examiners corps on Nationwide engineering examiners/Building.

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal right of admission (retskrav):

Aalborg University offers no bachelor's programmes with a legal right of admission to this Master's program.

Applicants without legal right of admission (retskrav):

- Byggningskonstruktør / Bachelor's degree in Architectural Technology and Construction Management, *University College Nordjylland; VIA University College; Københavns Erhvervsakademi; Erhvervsakademiet Lillebælt; Erhvervsakademi Sjælland and Erhvervsakademi Sydvest*
- Bachelor of Science in Civil Engineering, Aalborg University
- Bachelor of Engineering (Civil Engineering), Aalborg University
- Bachelor of Science in Engineering (Architecture and Design with specialization in Architecture and Urban Design), Aalborg University
- Bachelor of Science in Architectural Engineering, Technical University of Denmark
- Bachelor of Engineering in Architectural Engineering, Technical University of Denmark
- Bachelor of Engineering in Civil Engineering, Technical University of Denmark
- Bachelor of Engineering in Architectural Engineering, Aarhus University
- Bachelor of Engineering in Civil and Structural Engineering, Aarhus University
- Bachelor of Engineering in Civil Engineering, VIA University College, Horsens

Students with another Bachelor degree may, upon application to the Board of Studies, be admitted following a specific academic assessment if the applicant is considered as having 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 programme entitles the graduate to the designation cand.tech. (candidatus/candidata technologiae) i byggeledelse og bygningsinformatik med specialisering i byggeledelse *eller* cand.tech. (candidatus/candidata technologiae) i byggeledelse og bygningsinformatik med specialisering i bygningsinformatik.

The English designation is: Master of Science (MSc) in Technology (Construction Management and Building Informatics with specialisation in Construction Management) *or* Master of Science (MSc) in Technology (Construction Management and Building Informatics with specialisation in Building Informatics).

§ 9: PROGRAMME SPECIFICATIONS IN ECTS CREDITS

The Master's programme is a 2-year, research-based, full-time study program. The program 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

It is assumed that the student can read academic texts in modern 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:

Curriculum for the Master's Programme in Technology (Construction Management and Building Informatics), 2018

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

Knowledge

- Has knowledge in construction management and ICT supported collaborative processes in the building industry that, in selected areas, are based on the highest international research
- Can understand and, on a scientific basis, reflect on the knowledge of management and informatics in the building industry and identify scientific problems.

Skills

- Can communicate research-based knowledge and discuss professional and scientific problems with both peers and non-specialists.
- Can evaluate and select among the scientific theories, methods, tools and general skills within the AEC industry and, on a scientific basis, contribute to new analyses and solutions.

Competencies

- Can manage work and development situations that are complex, unpredictable and require new solutions.
- Can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility.
- Can independently take responsibility for own professional development and specialisation.
- Can structure and communicate problems and solutions and consequences targeted at different recipients and consider both professional, technical ethics as a possible conflict of interests.

Specific for specialization in Construction Management:

Knowledge

- Has knowledge about organisation and management of order-based production in the building activity, including management systems, both technical, economic, social and organisational.
- Can understand and, on a scientific basis, reflect over the builders' and construction contractors' frames and conditions for production, and be able to identify innovation and development potentials.

Skills

- Can make use of scientific methods, tools and general skills related to employment within Management in the Building Industry.

Competencies

- Can manage building projects from soil work through construction to the complete building.
- Can manage building projects in compliance with legal Danish requirements.

Specific for specialization in Building Informatics:

Knowledge

- Has knowledge of the AEC industry including organization and information needs as well as systems used for modelling and information exchange in the collaboration between different professional disciplines.
- Has knowledge of the formulation of user needs and requirements and the development of ICT-supported systems for collaboration and communication in the design, construction and operation process.

Skills

- Can analyse construction industry business processes and identify user needs and system requirements related to information management

- Can propose solutions for information management including choice of data models, organisation and specific tools within 3D modelling, analysis and visualization of results

Competencies

- Can contribute to added value of ICT systems in the construction industry by bridging the gap between software developers, system suppliers and end users of the systems.
- Can take part in decisions regarding development, purchase and implementation of information systems for the construction industry from operational to strategic level.

§ 17: STRUCTURE AND CONTENTS 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.

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
- study groups
- exercises (individually and in groups)
- laboratory tests
- measurements and testing in the field
- teacher feedback
- reflection
- portfolio work
- independent study

The modules are evaluated either through written or oral exams as stated in the description of the modules.

For individual written exams the study board selects among the following possibilities:

- Written exam based on handed out exercises
- Multiple choice
- Ongoing evaluation of written assignments

For individual oral exams the study board selects among the following possibilities:

- Oral exam with or without preparation
- Oral exam based on project report (individually graded through group exam)
- Oral exam based on presentation seminar
- Portfolio based oral exam

Curriculum for the Master's Programme in Technology (Construction Management and Building Informatics), 2018

If the number of students following a module is small and/or if the number of students having to attend a re-exam is small the study board can decide that an exam is conducted either as an oral or written individual exam for economic reasons. In the first case decision must be notified before the start of the teaching activity, in the latter case the students must be notified when the examination date is decided.

§ 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 or by assessment by the supervisor only).

Of a total of 120 ECTS, 110 ECTS are assessed by the 7-point scale and 45 ECTS are assessed by external examination.

The students are given options in the project modules as they can select among different projects within the same general theme. Moreover, the Master Thesis on the 4th semester can be selected freely within the field of Management in the Building Industry.

The Study Board of Civil Engineering can decide, that the contents of a course module on a semester is taught in the project module in the same semester, by increasing the ECTS extend as well as the learning goals. The decision is taken regarding to capacity and/or economy of the semester.

Offered as:					
Study programme: Construction Management and Building Informatics					
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method
1 SEMESTER					
Design and Construction of Buildings	Project	15	7-point grading scale	Internal examination	Oral exam based on a project
Project Management and Economics	Course	5	7-point grading scale	Internal examination	Written or oral exam
Introduction to Building Information Management	Course	5	7-point grading scale	Internal examination	Written or oral exam
Introduction to Problem Based Learning and Models in the Built Environment	Project	5	Passed/Not Passed	Internal examination	Oral exam based on a project
2 SEMESTER					
Construction Management					
Project management and Production in Construction	Project	15	7-point grading scale	External examination	Oral exam based on a project
Management of the Construction Process	Course	5	7-point grading scale	Internal examination	Written or oral exam
Framework Conditions of Construction	Course	5	7-point grading scale	Internal examination	Written or oral exam
Geotechnics and Foundation	Course	5	7-point grading scale	Internal examination	Written or oral exam
2 SEMESTER					
Building Informatics					
Virtual Buildings and Data Models	Project	15	7-point grading scale	External examination	Oral exam based on a project
Management of the Construction Process	Course	5	7-point grading scale	Internal examination	Written or oral exam
IT System Development	Course	5	7-point grading scale	Internal examination	Written or oral exam

Curriculum for the Master's Programme in Technology (Construction Management and Building Informatics), 2018

Knowledge Management in Architecture, Engineering and Construction Industry	Course	5	7-point grading scale	Internal examination	Written or oral exam
3 SEMESTER					
3. semester Electives: Projects					
		15			
Implementation of IT-based Systems in Organisations	Course	5	7-point grading scale	Internal examination	Written or oral exam
Development of Project, Risk and Quality Management Systems in Construction	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Strategy and Performance Measurements	Course	5	7-point grading scale	Internal examination	Written or oral exam
4 SEMESTER					
Master's Thesis	Project	30	7-point grading scale	External examination	Master's thesis/final project

3. semester Electives: Projects					
Module name	Course type	ECT S	Applied grading scale	Evaluation Method	Assessment method
Management of Construction Industry Companies	Project	15	7-point grading scale	Internal examination	Oral exam based on a project
ICT Supported Collaboration and User Involvement in the Building Process	Project	15	7-point grading scale	Internal examination	Oral exam based on a project

§ 19: ADDITIONAL INFORMATION

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 1 February 2018.

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS

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

April 9, 2019: Starting from February 2019 Mathematics C or documentation of equivalent qualifications is required.