



AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN COMPUTER SCIENCE (IT), 2020

MASTER OF SCIENCE (MSC)
AALBORG

[Link to this studyline](#)

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§ 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 Computer Science

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

The Master's programme is associated with the external examiners corps on Computer Science

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal right of admission (retskrav)

- Bachelor's degree in Information Technology with Specialisation in Technology, Aalborg University

Applicants without legal right of admission

- Bachelor's degree in Data Science, Aalborg University
- Bachelor's degree in Interaction Design, Aalborg University
- Bachelor's degree in Data Science, IT University in Copenhagen
- Bachelor's degree in Data Science, Aarhus University

All applicants without a legal claim 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.scient. i datalogi (it). The English designation is: Master of Science (MSc) in Computer Science (IT).

§ 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 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.studieservice.aau.dk/regler-vejledninger>

§ 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/regler-vejledninger>

§ 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 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 graduate of the Master's programme

Knowledge

- has knowledge in computer science that, in selected areas, is based on the highest level of international research in the subject area
- can understand and, on a scientific basis, reflect over challenges in computer science and identify solutions to scientific and engineering problems

Skills

- are proficient in scientific methods and tools and general skills related to computer science
- can evaluate and select among the theories, methods, tools and general skills and, on a sound scientific and engineering basis, advance new analyses and solutions
- can communicate research-based knowledge and discuss professional, scientific and engineering problems with both peers and non-specialists

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 specialization

§ 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
- exercises (individually and in groups)
- teacher feedback
- reflection
- portfolio work

The Study Board reserves the right not to offer an elective course if less than 10 students register for the course during the registration period at a given semester. Students will be offered other options if a chosen course is not offered.

§ 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)

Tracks

Students are free to choose between the IT-Track or the CS-Track on 2nd semester.

The Study Board highly recommends that students without a background in formal computer science and/or compiler construction follow the IT track, in order to gain these specific competencies.

Offered as: 1-professional						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language

1 SEMESTER							
Secure, Scalable and Useful Systems (DSNCSITK120)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English	
Programming Paradigms (DSNCSITK115)	Course	5	7-point grading scale	External examination	Written or oral exam	English	
Machine Intelligence (DSNCSITK121)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English	
Electives 1st semester Select 1 course	Course	5					
2 SEMESTER Option A: CS track							
Reliable Innovative Systems (DSNCSITK220)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English	
Machine Learning (DSNCSITK225)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English	
Selected Topics in Modelling and Verification (DSNCSITK226)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English	
Software Innovation (DSNCSITK227)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English	
2 SEMESTER Option B: IT track							
Design, Definition and Implementation of Programming Languages (DSNCSITK221)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English	
Agile Software Engineering (DSNCSITK224)	Course	5	7-point grading scale	External examination	Written or oral exam	English	
Languages and Compilers (DSNCSITK222)	Course	5	7-point grading scale	External examination	Practical exam	English	
Computability and Complexity (DSNCSITK223)	Course	5	7-point grading scale	External examination	Written or oral exam	English	
3 SEMESTER							
Pre-Specialisation in Computer Science (DSNCSITK301)	Project	20	7-point grading scale	External examination	Oral exam based on a project	English	
Entrepreneurship (DSNCSITK320)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English	
Electives 3rd semester Select 1 specialisation course	Course	5					
4 SEMESTER							
Master's Thesis (DSNCSITK411)	Project	30	7-point grading scale	External examination	Master's thesis/final project	English	

Electives 1st semester Select 1 course							
Module name	Course type	ECT S	Applied grading scale	Evaluation Method	Assessment method	Language	

Selected Topics in Database Research and Practice (DSNCSITK116)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Distributed Systems (DSNCSITK117)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Selected Topics in HCI (DSNCSITK118)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English

Electives 3rd semester Select 1 specialisation course						
Module name	Course type	ECT S	Applied grading scale	Evaluation Method	Assessment method	Language
Specialisation Course in Human-Computer Interaction (DSNCSITK321)	Course	5	7-point grading scale	External examination	Oral exam	English
Specialisation Course in Database Technology (DSNCSITK322)	Course	5	7-point grading scale	External examination	Oral exam	English
Specialisation Course in Distributed Systems (DSNCSITK323)	Course	5	7-point grading scale	External examination	Oral exam	English
Specialisation Course in Semantics and Verification (DSNCSITK324)	Course	5	7-point grading scale	External examination	Oral exam	English
Specialisation Course in Machine Intelligence (DSNCSITK325)	Course	5	7-point grading scale	External examination	Oral exam	English
Specialisation Course in Programming Technology (DSNCSITK326)	Course	5	7-point grading scale	External examination	Oral exam	English
Specialisation Course in System Development (DSNCSITK327)	Course	5	7-point grading scale	External examination	Oral exam	English

§ 19: ADDITIONAL INFORMATION

Further information about the programme, including exams are published on the Board of Studies' website.

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 the Department of Computer Science's website.

§ 20: COMMENCEMENT AND TRANSITIONAL RULES

The curriculum is approved by the dean and enters into force as of September 1, 2020.

The Study Board does not offer teaching after the previous curriculum from 2017 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 October 6, 2020, the vice-Dean has approved to change the examination in the module "*Language and Compilers*" from "*Written or oral*" to "*Practical*" valid from spring 2021.