AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN ROBOTICS, 2019

MASTER OF SCIENCE (MSC) IN ENGINEERING
AALBORG

Link to this studyline

TABLE OF CONTENTS

§ 1: PREFACE

Pursuant to consolidation Act 172 of February 27, 2018 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.

§ 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) with subsequent changes and Ministerial Order no. 1062 of June 30, 2016 on University Examinations (the Examination Order) with subsequent changes. Further reference is made to Ministerial Order no. 106 of February 12, 2018 (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 The Technical Faculty of IT and Design.

§ 5: STUDY BOARD AFFILIATION

The Master's programme falls under the Study Board of Electronics and IT.

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

The programme is affiliated with the Nationwide engineering examiners/Electronics, IT and Energy (Electromagnetic direction).

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal right of admission (retskrav):

Applicants with one of the following degrees are entitled to admission:

- Bachelor of Science in Robotics, Aalborg University

§ 8: THE PROGRAMME TITLE IN DANISH AND ENGLISH

The Master's programme entitles the graduate to the designation Civilingeniør, cand.polyt. i robotteknologi.

The English designation is: Master of Science (MSc) in Engineering (Robotics).

§ 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

Knowledge:

- Has a comprehensive base of knowledge of scientific foundations and technological principles within robotics
- Has knowledge about mobile robots and human robot collaboration.
- Has knowledge of and can reflect upon the interaction between the various components of a robotic system and a broader systems-oriented context
- Has an understanding of the interaction between various engineering domains and other competencies in connection with solving specific engineering problems.

Skills:

- Can utilize up-to-date scientific methodologies, theories and tools to analyse and solve complex problems in robotics
- Can evaluate theoretical and practical problems, as well as describe and select relevant solution strategies

- Is able to implement solution strategies and evaluate their success in a systematic manner
- Is able to communicate and discuss research-based knowledge, both orally and in writing, to specialists as well as non-specialists
- is familiar with and can seek out leading international research within his/her specialist area

Competencies:

- Is able to handle technical problem solving at a high level and has the capacity to work with and manage all phases of a project
- Is able to develop and test robotics hardware and software and integrate them into a broader systems-oriented context
- Can work independently as well as in collaboration with others, both within and across technical fields, in an efficient and professional manner
- Is able to work independently and to identify his/her own learning needs and structure his/her own learning, academic development and specialization

§ 17: STRUCTURE AND CONTENTS OF THE PROGRAMME

The programme is structured in modules and organised 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. The examinations are defined in the curriculum.

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
- workshops
- exercises (individually and in groups)
- teacher feedback
- self-study
- reflection
- portfolio work

§ 18: OVERVIEW OF THE PROGRAMME

Offered as: 1-professional					
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method
1 SEMESTER					
Advanced mobile robotics	Project	15	7-point grading scale	Internal examination	Oral exam based on a project
Robot navigation	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
Robot mobility	Course	5	7-point grading scale	Internal examination	Written or oral exam
Advanced robotic perception	Course	5	7-point grading scale	Internal examination	Written or oral exam

2 SEMESTER					
Collaborative robotics	Project	15	7-point grading scale	External examination	Oral exam based on a project
Object manipulation and task planning	Course	5	7-point grading scale	Internal examination	Written or oral exam
Human robot interaction	Course	5	7-point grading scale	Internal examination	Written or oral exam
Human bionics	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
3 SEMESTER Option A					
Contextual robotics	Project	20	7-point grading scale	Internal examination	Oral exam based on a project
Readings in robotics	Course	5	Passed/Not Passed	Internal examination	Active participation/continuous evaluation
Innovation and entrepreneurship	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
3 SEMESTER Option B					
Entrepreneurial practice	Project	20	Passed/Not Passed	Internal examination	Oral exam based on a project
Readings in robotics	Course	5	Passed/Not Passed	Internal examination	Active participation/continuous evaluation
Innovation and entrepreneurship	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
3 SEMESTER Option C					
Project-oriented study in an external organisation	Project	30	Passed/Not Passed	Internal examination	Oral exam based on a project
3-4 SEMESTER Long Master's Thesis					
Master's Thesis	Project	50	7-point grading scale	External examination	Oral exam based on a project
Readings in robotics	Course	5	Passed/Not Passed	Internal examination	Active participation/continuous evaluation
Innovation and entrepreneurship	Course	5	Passed/Not Passed	Internal examination	Written or oral exam
4 SEMESTER Master's Thesis					
Master's Thesis	Project	30	7-point grading scale	External examination	Oral exam based on a project

§ 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 the course description.

§ 20: COMMENCEMENT AND TRANSITIONAL RULES

The curriculum is approved by the dean and enters into force as of 01.09.2019.

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS