AALBORG UNIVERSITET

MSC IN MATHEMATICS-ECONOMICS, 2017

MASTER OF SCIENCE (MSC)
AALBORG

Link to this studyline

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

Master in Mathematical Economics, 2020

Master of Science (MSc) in Mathematics-Economics 2022
Master of Science in Mathematics-Economics, 2018

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§ 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.

§ 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. 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 Faculty of Engineering and Science, Aalborg University.

§ 5: STUDY BOARD AFFILIATION

The Master's programme falls under Study Board of Mathematical Sciences

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

The Master's programme is associated with the external examiners corps on Mathematics.

(Censorkorpset for matematik).

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal right of admission (retskrav)

- Bachelor (BSc) of Science in Mathematics-Economics, Aalborg University
  Applicants without legal claim to admission:

Applicants without legal right of admission

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 Master's programme entitles the graduate to the Danish designation Cand.scient.oecon.. The English designation is: Master of Science (MSc) in Mathematics-Economics.

§ 9: PROGRAMME SPECIFICATIONS IN ECTS CREDITS

The Master's program 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 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

At programs that are taught in Danish, it is assumed that the student can read academic texts in modern Danish, Norwegian, Swedish and English and use reference works, etc., in other European languages. At programs taught in English, 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

Knowledge
• are well-oriented in the foundations of key mathematical-economics disciplines including econometrics, stochastic processes, quantitative finance, operations research.

Skills

• are able to independently identify, formulate, and analyse mathematical-economics problems employing theory and methodology from the mathematical and quantitative economics sciences

• are able to independently choose relevant methods and tools from various mathematical and quantitative economics areas and to motivate this choice

• are able to disseminate scientific knowledge and to discuss applications of methods from the mathematical and quantitative economics sciences

• are able to choose relevant mathematical theories to problems that originate in, for example economics, to develop them and to make use of them in the original applied context

Competencies

• are able to ponder about central mathematical and quantitative economics insights, methods and tools and to identify problems amenable to mathematical treatment

• are able to manage complex work and development scenarios that may require new strategies in order to make progress

• are able to independently take responsibility for professional development and specialization

§ 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

The study board can cancel modules if the number of enrolled students is low.

§ 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).

Only a limited number of elective courses will be offered at each semester.
Students can only participate once in a course with a given title.

Offered as: 1-professional Study programme: Mathematics-Economics						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						

1. semester/MATØK7, projects	Project	15				
1. semester/MATØK7, elective courses		15				
2 SEMESTER						
2. semester/MATØK8, projects	Project	15				
2. semester/MATØK8, elective courses		15				
3 SEMESTER						
Advanced Topics with Applications (F-MOK-K3-1)	Project	20	7-point grading scale	Internal examination	Oral exam based on a project	Danish and English
3. semester/MATØK9, elective courses		10				
3-4 SEMESTER						
Long Master's Thesis. 60 ECTS (F-MOK-K3-3)	Project	60	7-point grading scale	External examination	Oral exam based on a project	Danish
4 SEMESTER						
Master's Thesis, 30 ECTS (F-MOK-K4-1)	Project	30	7-point grading scale	External examination	Master's thesis/final project	Danish

The student has the possibility to write a Long Master's Thesis (in the 3'rd and 4'th semesters: 60 ECTS), if the thesis is of experimental character. The amount of experimental work must reflect the allotted ECTS.

1. semester/MATØK7, projects

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Empirical Financial Modelling and Applied Econometrics (F-MOK-K1-1)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	Danish and English
Operations Research. Project (F-MOK-K1-2)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	Danish

1. semester/MATØK7, elective courses

Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Financial Econometrics and Quantitative Methods in Finance (F-MOK-K1-4)	Course	5	7-point grading scale	Internal examination	Written or oral exam	Danish and English
Measure Theory and Stochastic Processes (F-MOK-K1-3)	Course	5	Passed/Not Passed	Internal examination	Written or oral exam	Danish and English
Numerical Analysis (F-MAT-K1-2)	Course	5	Passed/Not Passed	Internal examination	Oral exam	Danish and English

Topics in Operations Research (F-MOK-K1-5)	Course	5	7-point grading scale	Internal examination	Written or oral exam	Danish and English
Advanced Operations Management (M-OSM-K1-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Flexible Manufacturing (M-OSM-K1-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English

2. semester/MATØK8, projects						
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
In-depth Study of Financial Engineering (F-MOK-K2-1)	Project	15	7-point grading scale	External examination	Oral exam based on a project	Danish and English
Supply Chain Operations and Analysis (F-MOK-K2-2)	Project	15	7-point grading scale	External examination	Oral exam based on a project	Danish and English

2. semester/MATØK8, elective courses						
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Quantitative Finance and Computational Statistics (F-MOK-K2-3)	Course	5	Passed/Not Passed	Internal examination	Written or oral exam	Danish and English
Continuous Time Finance (F-MOK-K2-4)	Course	5	Passed/Not Passed	Internal examination	Written or oral exam	Danish and English
Data Mining (F-MOK-K2-5)	Course	5	Passed/Not Passed	Internal examination	Written or oral exam	Danish and English
Manufacturing and Supply Chain Systems (M-OSM-K2-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Business Intelligence and Analytics (M-OIM-K2-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English

3. semester/MATØK9, elective courses						
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Topics in Statistical Sciences I (F-MAT-K1-5)	Course	5	7-point grading scale	Internal examination	Written or oral exam	Danish and English
Topics in Statistical Science II (F-MAT-K1-6)	Course	5	7-point grading scale	Internal examination	Written or oral exam	Danish and English
Statistics for Duration Data (F-MAT-K1-4)	Course	5	Passed/Not Passed	Internal examination	Active participation/continuous evaluation	Danish and English

Flexible Manufacturing (M-OSM-K1-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Topics in Operations Research (F-MOK-K1-5)	Course	5	7-point grading scale	Internal examination	Written or oral exam	Danish and English
Advanced Operations Management (M-OSM-K1-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English

§ 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 School of Engineering and Science' website.

§ 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 01.09.2017.
Students who wish to complete their studies under the previous curriculum from 2016 must conclude their education by the summer examination period 2018 at the latest, since examinations under the previous curriculum are not offered after this time.

§ 21: AMENDMENTS TO THE CURRICULUM AND REGULATIONS