AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN MANAGEMENT ENGINEERING, 2022

MASTER OF SCIENCE (MSC) IN ENGINEERING
AALBORG

Link to this studyline

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

Master of Science (MSc) in Engineering (Management Engineering) 2019
Master of Science (MSC) In Engineering (Management Engineering). 2024

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. 2285 of December 1, 2021 on Full-time University Programmes (the University Programme Order) and Ministerial Order no. 2271 of December 1, 2021 on University Examinations (the Examination Order). Further reference is made to Ministerial Order no. 104 of January 24, 2021 (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 Faculty of Engineering and Science, Aalborg University.

§ 5: STUDY BOARD AFFILIATION

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

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

The Master's programme is associated with the external examiners corps on Civil engineering corps of external examiners.

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal claim to admission (retskrav):

- Bachelor of Science in Global Business Engineering, Aalborg University

Applicants without a legal claim to admission:
Applicants with one of the following degrees are entitled to admission:

- Bachelor of Engineering in Export Technology, Aalborg University
- Bachelor of Engineering in Global Business Systems, Aalborg University
- Bachelor of Engineering (Global Business Engineering), Technical University of Denmark and VIA University College
- Bachelor of Engineering in Global Management and Manufacturing, SDU

All applicants must, as a minimum, document English language qualifications comparable to an "English B level" in the Danish upper secondary school (gymnasium) (cf. the Admission Order).

Applicants with a technical/engineering bachelor degree that is not listed as qualifying for admission, may be admitted, if the applicant is considered as having comparable educational prerequisites. At least 115 ECTS within the domain Operations & Supply Chain Management covering logistics, manufacturing, & supply chain engineering, management science, IT/IS, & business administration is required.

§ 8: THE PROGRAMME TITLE IN DANISH AND ENGLISH

The Master's programme entitles the graduate to one of the following titles:

- Civilingeniør, cand.polyt. i produktionsledelse med specialisering i virksomhedssystemer. The English designation is: Master of Science (MSc) in Engineering (Management Engineering with specialisation in Operations and Supply Chain Management).

- Civilingeniør, cand.polyt. i produktionsledelse med specialisering i værdikæder og innovationsledelse. The English designation is: Master of Science (MSc) in Engineering (Management Engineering with specialisation in Operations and Innovation Management).

§ 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.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 in Management Engineering:

Knowledge

- Can demonstrate understanding of research work and is able to become a part of the research environment
- Can demonstrate insight into the implications of research work, including research ethics.

Skills

- Is able to work systematically, analytically and solution design-oriented
- Is able to evaluate, select among, and apply scientifically-based management engineering knowledge, methods, and tools related to specialization to analyze problems and design and implement solutions, alone as well as in a collaborative context
- Is able to apply scientific methodologies to solving a wide variety of problems within the field of specialisation
- Can communicate research-based knowledge and discuss professional and scientific problems with both peers and non- specialists.

Competencies

- Is able to work independently and in groups with a project on a specific problem within his/her field of specialization on the highest possible level within his/her specialisation
- Is able to take part in technical development and research
- Can manage work and development situations that are complex, unpredictable and require new solutions within the area of specialization
- Is able to use the correct terminology in oral, written or graphical communication and documentation of challenges and solutions within the field of specialization.
- Is competent to solve new and complicated technical problems by the use of advanced mathematics, scientific and technological knowledge.
- Can evaluate and select digital tools based on their appropriateness to specific tasks within management engineering.

Specifically for graduates of the Master's programme in Management Engineering with specialization in Operations and Innovation Management:

Knowledge

- Have international-level knowledge, based on state-of-the-art research in the field of Operations and Innovation Management. This includes organization analysis, engineering and design; operations development and strategy; business intelligence and performance management; and innovation and change management
- Understand and are able to reflect, on a scientific basis, on the technological, organizational, managerial, industrial and competitive aspects of Operations and Innovation Management problems and solutions.
- Have a management engineering perspective on the analysis of complex problems in complex industrial systems
- Understand and are able to reflect on design and implementation of innovative solutions to such problems, based on an integration of technological, organizational and managerial aspects.

Skills

- Can apply a deep understanding of the technological, organizational, strategic, managerial, industrial and competitive aspects of Operations and Innovation Management in analyzing complex problems and designing and implementing solutions in a wide range of empirical settings, in particular industrial and professional service settings

Competencies

- Can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility within the area of Operations and Innovation Management

Specifically graduate of the Master's programme in Management Engineering with specialization in Supply Chain Management:

Knowledge

- Has attained understanding of a broad range of theory, models, methods and techniques within the area of operations and supply chain management and systems
- Has knowledge of one or more subject areas that in selected areas within operations and supply chain management and systems are based on the highest international research in a subject area
- Can understand and, on a scientific basis, reflect over subject areas related to operations and supply chain management and systems and identify scientific problems within that area

Skills

- Can participate in or lead projects in development of operations and supply chain management systems, flexible manufacturing, development of quality, risk, and project management systems, supply chain operations, manufacturing and supply chain systems, business intelligence and analytics, and global manufacturing management

Competencies

- Is competent to solve new and complicated problems by the use of quantitative methods, advanced mathematics, scientific, and technological knowledge.

§ 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 aiming 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 that are defined in the curriculum. Each semester has an overall theme which serves a focal point in both modules and the project work. 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
- Reflection
- Portfolio work.

The 3rd semester is allocated to gaining practical international experience. The semester will enable students to appreciate theoretical reflective work practice and cultural challenges. The aim of the semester is to:

1. Gain practical experience within the subject field
2. Analyse and reflect on educational experiences and professional practice
3. Clarify the Master’s Thesis topic.

The third semester offers different ways of organisation – depending on the student’s choice of content; project work at Aalborg University, study visit at an educational institution in Denmark or abroad, voluntary traineeship with project work at a company in Denmark or abroad, or a semester programme that comprises cross-disciplinary programme elements composed by the student. The total workload of the semester has to be equivalent to 30 ECTS, of which 5 ECTS can be elective courses. The project may be finalized with a project report or in the form of a scientific paper, or, if the project is continued at the 4th semester, with a midterm evaluation. For further information about the organisation of the module please see the Joint Programme Regulations.

§ 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 assessment by the supervisor only).

Offered as: 1-professional Specialisation: Operations and Supply Chain Management						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						
Designing Global Business Systems and Value Chains (M-OM-K1-1)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English
Advanced Operations Management (M-OSM-K1-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Development of Quality, Risk, and Project Management Systems 1 (M-OSM-K1-4)	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						
Development and Innovation of Global Business Systems and Value Chains (M-OM-K2-1A)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English
Business Intelligence and Analytics (M-OIM-K2-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Manufacturing and Supply Chain Systems (M-OSM-K2-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Development of Quality, Risk, and Project Management Systems 2 (M-OSM-K2-4)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option A						
Global implementation (M-OM-K3-1)	Project	30	7-point grading scale	Internal examination	Oral exam based on a project	English
3 SEMESTER Option B						
Global implementation A (M-OM-K3-8)	Project	20	7-point grading scale	Internal examination	Oral exam based on a project	English
Project Electives (M-OM-K3-9)	Project	10	7-point grading scale	Internal examination	Oral exam based on a project	English
3 SEMESTER Option C						
Implementation in Global Operational Systems (M-OM-K3-10)	Project	20	7-point grading scale	Internal examination	Oral exam based on a project	English
Organisation Analysis and Design (M-OIM-K1-1)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Operations Development and Strategy (M-OIM-K1-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option D						

Project Oriented Study in an External Organisation (M-OM-K3-6)	Project	30	7-point grading scale	Internal examination	Oral exam based on a project	English
4 SEMESTER						
Master's Thesis (M-OM-K4-1)	Project	30	7-point grading scale	External examination	Master's thesis/final project	English

Offered as: 1-professional Specialisation: Operations and Innovation Management						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						
Designing Global Business Systems and Value Chains (M-OM-K1-1)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English
Organisation Analysis and Design (M-OIM-K1-1)	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
Operations Development and Strategy (M-OIM-K1-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
2 SEMESTER						
Development and Innovation of Global Business Systems and Value Chains (M-OM-K2-1A)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English
Business Intelligence and Analytics (M-OIM-K2-3)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Innovation and Change Management (M-OIM-K2-1)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Global Business Performance (M-OIM-K2-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option A						
Global implementation (M-OM-K3-1)	Project	30	7-point grading scale	Internal examination	Oral exam based on a project	English
3 SEMESTER Option B						
Global implementation A (M-OM-K3-8)	Project	20	7-point grading scale	Internal examination	Oral exam based on a project	English
Project Electives (M-OM-K3-9)	Project	10	7-point grading scale	Internal examination	Oral exam based on a project	English
3 SEMESTER Option C						
Implementation in Global Business Systems (M-OM-K3-11)	Project	20	7-point grading scale	Internal examination	Oral exam based on a project	English

Advanced Operations Management (M-OSM-K1-2)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Development of Quality, Risk, and Project Management Systems 1 (M-OSM-K1-4)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option D						
Project Oriented Study in an External Organisation (M-OM-K3-6)	Project	30	7-point grading scale	Internal examination	Oral exam based on a project	English
4 SEMESTER						
Master's Thesis (M-OM-K4-1)	Project	30	7-point grading scale	External examination	Master's thesis/final project	English

§ 19: ADDITIONAL INFORMATION

The current version of the curriculum is published on the Board of Studies' website, including more detailed information about the program, including exams.

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. Please see further information about the course on the study board website https://www.mp.aau.dk/education/rules-and-regulations-eng-da.

§ 20: COMMENCEMENT AND TRANSITIONAL RULES

The curriculum is approved by the dean and enters into force as of September 1, 2022.

The Study Board does not offer teaching after the previous curriculum from 2019 after the summer examination 2023.

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

7 July 2023: The Vice-dean of education has approved that the module "Enterprise Engineering and Design" will be replaced with "Flexible Manufacturing" (specialisation in Operations and Innovation Mangement) valid from autumn 2023.

The Vice-dean for Education has on September 23, 2024, approved that the 3rd semester will be revised effective from the fall of 2024.

The Vice dean of Education has on February 11, 2025, approved that the prerequisite for enrollment for the exam is erased in the module *Development and Innovation of Global Business Systems and Value Chains*, valid from Spring 2025.