AALBORG UNIVERSITET

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

MASTER OF SCIENCE (MSC) IN ENGINEERING
ESBJERG

Link to this studyline

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

Master of Science (MSc) in Engineering (Chemical Engineering), 2021
Master of Science (MSc) in Engineering (Chemical Engineering), 2017
Master of Science (MSC) in Engineering (Chemical Engineering), 2020

TABLE OF CONTENTS

§ 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 4
§ 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 6
§ 18: Overview of the programme 7
§ 19: Additional information 9
§ 20: Commencement and transitional rules 9
§ 21: Amendments to the curriculum and regulations 9

§ 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 Examination Policies and Procedures incl. the Joint Programme Regulations 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 Esbjerg.

§ 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 Chemistry and Bioscience

§ 6: AFFILIATION TO CORPS OF EXTERNAL EXAMINERS

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

§ 7: ADMISSION REQUIREMENTS

Applicants with a legal right of admission (retskrav)

- Bachelor in Chemical Engineering and Biotechnology, Aalborg University

Applicants without legal right of admission

- Bachelor of Science in Chemical Engineering, Aalborg University
- Bachelor of Engineering in Chemical Engineering and Biotechnology, Aalborg University
- Bachelor of Science in Chemical Engineering, Aarhus University
- Bachelor of Engineering in Chemical Engineering, Aarhus University
- Bachelor of Science in Chemical Engineering, Technical University of Denmark
- Bachelor of Engineering in Chemical Engineering, Technical University if Denmark
- Bachelor of Engineering in Chemical Engineering and International Business, Technical University of Denmark
- Bachelor og Science in Engineering (Chemistry and Biotechnology), University of Southern Denmark
- Bachelor of Engineering in Chemical Engineering, University of Southern Denmark

All applicants without a legal claim must prove that their English language qualifications are 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 Civilingeniør, cand.polyt. i kemiteknik. The English designation is: Master of Science (MSc) in Engineering (Chemical Engineering).

The Master's programme with specialisation in Oil and Gas Technology entitles the graduate to the designation Civilingeniør, cand.polyt. i kemiteknik med specialisering i olie- og gasteknologi. The English designation is: Master of Science (MSc) in Engineering (Chemical Engineering with specialisation in Oil and Gas Technology)

§ 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 texts in English and use reference works, etc., in English and 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

A Master in Chemical Engineering has knowledge that is based on the highest international research in chemical engineering. These areas include process analysis, process design, monitoring, and simulation; fluid dynamics, thermodynamics, colloid chemistry, polymers and materials, redox and separation processes, and chemometrics.

A master in Chemical Engineering with specialization in Oil and gas technology has insight in oil and gas production and separation.

Skills

A Master in Chemical Engineering can understand and, on a scientific basis, reflect upon the above-mentioned knowledge and identify scientific problems. Masters the scientific methods, tools and general skills related to chemical engineering.

A Master in Chemical Engineering can evaluate and select among scientific theories, methods, tools and general engineering skills and, on a scientific basis, design new analyses and solutions.

A Master in Chemical Engineering can communicate research-based knowledge and discuss professional and scientific problems with both peers and non-specialists.

Competencies

A Master in Chemical Engineering can manage work and development tasks that are complex, unpredictable and require new solutions.

A Master in Chemical Engineering can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility.

A Master in Chemical Engineering can independently take responsibility for own professional development and specialization.

A Master in Chemical Engineering can analyze, identify and formulate problems on a scientific basis and subsequently work problem-oriented on understanding, further developing and finding solutions both individually and in collaboration with other professionals.

A Master in Chemical Engineering can use digital solutions for data collection and storage, statistical data analysis, data visualization, modeling and simulation, for presentation of theories, hypotheses and results in writing as well as orally, as well as for organizing and implementing collaboration in project groups and with external partners.

A Master in Chemical Engineering can perform digital search of relevant professional and research literature and knowledge in databases as well as assess the validity of digital sources and use digital platforms for self-study and knowledge sharing as well as for professional discussion and communication.

§ 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

§ 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).

Offered as: 1-professional						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						
Electives 1st semester (Chemical Engineering)	Project	15				
Fluid Mechanics (K-KT-K1-7)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Chemical Engineering Thermodynamics (K-KT-K1-34)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Colloid and Interface Science (K-KT-K1-8A)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
2 SEMESTER						
Process Modelling (K-KT-K2-15B)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English
Process Design and Simulation (K-KT-K2-37)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Advanced Redox and Separation Processes (K-KT-K2-38)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Chemometrics and Process Monitoring (K-KT-K2-36)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option A						
Specialisation in Chemical Engineering (K-KT-K3-35A)	Project	30	7-point grading scale	External examination	Oral exam based on a project	English
3 SEMESTER Option B						
Project-Oriented Study in an External Organisation (K-BIO-K3-66A)	Project	30	7-point grading scale	External examination	Oral exam based on a project	English
3-4 SEMESTER Option C						
Master's Thesis (K-KMB-K4-4A)	Project	60	7-point grading scale	External examination	Master's thesis/final project	English
4 SEMESTER						
Master's Thesis (K-KMB-K4-5A)	Project	30	7-point grading scale	External examination	Master's thesis/final project	English

Offered as: 1-professional

Specialisation: Oil and Gas Technology						
Module name	Course type	ECTS	Applied grading scale	Evaluation method	Assessment method	Language
1 SEMESTER						
Oil and Gas Separation (K-KT-K1-25B)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English
Fluid Mechanics (K-KT-K1-7)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Chemical Engineering Thermodynamics (K-KT-K1-34)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Colloid and Interface Science (K-KT-K1-8A)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
2 SEMESTER						
Modeling of Oil and Gas Production (K-KT-K2-16C)	Project	15	7-point grading scale	External examination	Oral exam based on a project	English
Process Design and Simulation (K-KT-K2-37)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Advanced Redox and Separation Processes (K-KT-K2-38)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
Chemometrics and Process Monitoring (K-KT-K2-36)	Course	5	7-point grading scale	Internal examination	Written or oral exam	English
3 SEMESTER Option A						
Specialisation in Oil and Gas Technology (K-KT-K3-26B)	Project	30	7-point grading scale	External examination	Oral exam based on a project	English
3 SEMESTER Option B						
Project-Oriented Study in an External Organisation (K-BIO-K3-66A)	Project	30	7-point grading scale	External examination	Oral exam based on a project	English
3-4 SEMESTER Option C						
Master’s Thesis (K-KMB-K4-4A)	Project	60	7-point grading scale	External examination	Master's thesis/final project	English
4 SEMESTER						
Master’s Thesis (K-KMB-K4-5A)	Project	30	7-point grading scale	External examination	Master's thesis/final project	English

Electives 1st semester (Chemical Engineering)						
Module name	Course type	ECTS	Applied grading scale	Evaluation Method	Assessment method	Language
Process Analysis (K-KT-K1-18B)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English

Oil and Gas Separation (K-KT-K1-25B)	Project	15	7-point grading scale	Internal examination	Oral exam based on a project	English

Elective Courses

On 3 - 4 semester option A, B or C is chosen

§ 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 project exams. For further information, please see the www.en.bio.aau.dk .

§ 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 2021 after the summer examination 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

On November 14 2022 the Vice-Dean of Education has approved, that the assessment method of the module "Process Design and Simulation" is changed to ""written or oral". The amendment is valid from spring 2023.