The Faculty of Engineering and Science
Board of Studies for Chemistry,
Environmental Engineering and
Biotechnology

AALBORG UNIVERSITY
DENMARK

Curriculum for Master in Environmental Engineering

Aalborg University
September 2014

Preface

Pursuant to Act 367 of May 25, 2013 on Universities (the University Act) the following study regulations are stipulated.

The Study Regulations are approved by the Study Board of Biotechnology, Chemical and Environmental Engineering at Aalborg University. The study regulations cover the Master's Programme in Environmental Engineering in Aalborg.

Aalborg University, 2013

Niels T. Eriksen

Chairman of Study Board

Approved by the Dean 2013

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Chapter 1. Legal basis of the Study Regulations

1.1 The Ministerial Order Basis

The Master's programme in Environmental Engineering is organized in accordance with the Ministry of Science, Technology and Innovation's Ministerial Order no. 814 of June 29, 2010 on Bachelor's and Master's Programs at Universities (the Ministerial Order of the Study Programs) and Ministerial Order no. 666 of June 24, 2012 on University Examinations (the Examination Order) with subsequent changes. Further reference is made to Ministerial Order no. 1488 of December 16, 2013 (the Admission Order) and Ministerial Order no. 250 of March 15, 2007 (the Grading Scale Order) with subsequent changes.

The Faculties of Science and Engineering affiliation

The Master's programme falls under the Faculty of Science and Engineering, Aalborg University.

1.2 The Study Board affiliation

The 1st to 4th semesters of the Master's programme fall under the Study Board for Biotechnology, Chemical and Environmental Engineering.

Chapter 2. Admission, title, programme duration and competence profile

2.1 Admission

Admission to the Master's programme in Environmental Engineering requires a Bachelor's degree in either Chemistry, Environmental Engineering, or Biotechnology, or a similar degree.

2.2 Degree/title in Danish, Latin and English

Successful completion of the Master's programme entitles the student to use the title cand.polyt. i miljøteknologi. The corresponding English title is: Master of Science (MSc) in Engineering (Environmental Engineering).

2.3 The programme's specification in ECTS

The Master's program is a 2-year, research based, full-time study programme. The programme is set to120 ECTS.

2.4 The programme's competence profile

The competence profile below will appear on the diploma:

A graduate of the Master's programme has competences acquired through a course of study that has taken place in a research environment.

A graduate of the Master's programme can handle highly qualified functions in the labour market. In addition, the graduate of the Master's programme has the requirements to undertake research training (a Ph.D. programme). A graduate of the Master's programme has; compared to a Bachelor's degree, developed their professional knowledge and independence, so that they can independently use scientific theory and method within academic as well as business/professional contexts.

Description of qualifications:

Individuals who attain the MSc degree in Environmental Engineering

Knowledge

- Have knowledge within environmental engineering that in selected areas such as urban water and wastewater managements, soil science, and pollution and remediation of receiving fresh and marine waters, is based on the highest international research.
- Are able, on a scientific basis, to understand and reflect over the knowledge in the above-mentioned areas and be able to identify scientific problems.

Skills

- Master the scientific methods and tools of the above-mentioned areas and master the general skills that are tied to work within environmental engineering.
- Are able to evaluate and select among the scientific theories, methods, tools and general skills of environmental engineering, and set up, on a scientific basis, new analysis and solution models
- Are able to communicate research based knowledge and discuss professional and scientific problems with both peers and non-specialists.

Competences

- Are able to develop, design and operate industrial plants to protect the environment, and evaluate and solve assignments concerning environmental issues in private and public enterprises

- Are able to independently initiate and carry out discipline specific and cross-disciplinary cooperation and to assume professional responsibility within the area of environmental engineering.
- Are able to independently take responsibility for their own professional development and specialization.

Chapter 3. Content of the Study Programme

Outline of the Master's programme in Environmental Engineering

Semester	Module		ECTS	Grading	Assessment
1.	Soil and Groundwater – Risk, Resource and Remediation Analysis		15	7-point scale	Internal
	Elective courses a. Experimental Hydrogeology b. Global Change Biology		5	7-point scale	Internal
	Environmental Soil Science and Geostatistics		5	Pass/fail	Internal
	Groundwater Modeling and Geohydrology		5	Pass/fail	Internal
2.	Elec-tives	Wastewater Treatment Systems	15	7-point scale	Internal
		Lake and Coastal Marine Ecosystems	15	7-point scale	Internal
	Modelling the Aquatic Environment		5	Pass/fail	Internal
	Wastewater Treatment		5	Pass/fail	Internal
	Marine Pollution		5	7-point scale	Internal
3.	Elec-tives	Advanced Studies in Environmental Engineering and Technology	30	7-point scale	External
		Individual semester	30	Variable	External
		External studies	30	Pass/fail	
		Long Master's Thesis	30		
4.	Master's Thesis		30	7-point scale	External

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

Aalborg University organizes a number of cross-disciplinary 5 ECTS modules at 3rd semester. If one or more of these are followed, the master's thesis project will be reduced in size accordingly.

A compulsory course in Problem based learning (PBL) and student responsibility is offered as an integrated part of all project modules to students not acquainted with PBL at Aalborg University.

3.1 1st semester – Soil Science and Groundwater

3.1.1 Soil and Groundwater – Risk, Resource and Remediation Analysis

English title	*Soil and Groundwater – Risk, Resource and Remediation Analysis*
Danish title	*Jord og grundvand – risiko-, ressource- og remedieringsanalyse*
Placement	Fall, 1st semester
Prerequisites	-
Aim	The main aim of the project is to qualify the student to understand, measure and model transport and degradation of fluids, compounds and contaminants in the water-unsaturated (vadose) soil zone and the water-saturated groundwater zone at and around an urban contaminated soil site, and to apply this in evaluation and design of risk assessment and remediation regarding area use, soil and water resources.
Learning outcomes	After completion of the course the student should be able to Skills • model transport of fluids (water and/or air) and transport and degradation of contaminants in soil and groundwater,

	using own models for one dimensional problems and ready-available software for two or three dimensional problems • apply selected methods to measure water transport parameters, solute transport parameters, gas transport parameters, and/or biodegradation coefficients in soil and groundwater • analyse, synthesize and evaluate contaminant spill situation in regard to risk for area use and soil and groundwater resources at and around a polluted soil site Competences • explain technology and applicability of in-situ physical and biological methods for remediation of contaminated soil and groundwater zones at polluted soil sites
Content	The project focuses on a polluted urban soil site (examples include: gasoline station, former municipal gas work site, former dry cleaning site, municipal waste dump site). The sites' spill and contamination history and present situation in the soil and groundwater zones are described and evaluated. Hereunder, a measurement programme is designed and carried out at the site, and - based on own and literature. Measurements and risk assessment modelling for soil and groundwater are carried out and suggestions for prevention and remediation technologies are made.
Duration	15 ECTS
Language	English
Assessment	Oral examination based on a written report
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.1.2 Experimental Hydrogeology

English title	*Experimental Hydrogeology*
Danish title	*Eksperientel hydrogeologi*
Placement	Fall, 1st semester
Prerequisites	Bachelor degree in environmental engineering or civil engineering
Aim	To qualify the student to understand and estimate hydro-geological parameters by in-situ and laboratory test and experiments in relation to a specific site and/or transport phenomenon. This includes the planning of a measuring programme based on suitable measuring methods and positions, setting up a time schedule and a data processing procedure.
Learning outcomes	After completion of the course the student should be able to Knowledge • account for the groundwater system and its essential properties and parameters • account for experimental methods for property and parameter estimation of the ground water zone • account for uncertainties and limitations of the applied methods Skills • select, design and conduct suitable in-situ test for estimating saturated hydraulic properties. • select, design and conduct suitable laboratory test for estimating hydraulic saturated hydraulic properties.

	• analyze and evaluate test results and methods regarding suitability and • reliability. • organize documentation and presentation of measured data. Competences • describe, analyze, and evaluate a specific part of the groundwater system, regarding its composition and its properties through a planned investigation of the system • structure and plan the project and the work in a group • produce technical documentation of complex problems, methods and results in group cooperation. • communicate findings and solutions graphically as well as orally to a relevant target audience.
Content	Lectures, supplemented with project work, workshops, presentation seminars, laboratory tests
Duration	5 ECTS
Language	English
Assessment	Written or oral examination
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.1.3 Environmental Soil Science and (Tools in) Geostatistics

English title	*Environmental Soil Science and Geostatistics*
Danish title	*Jordmiljø og geostatistik*
Placement	Fall, 1st semester
Prerequisites	
Aim	to give the student a basic knowledge on water and contaminant transport in soil, on sorption and degradation processes in soil and groundwater, and the use of geostatistical methods in soil and groundwater studies. The student should understand the links between the physical, chemical and biological processes in soil. The student should know the principles behind and how to apply relevant laboratory and field methods for measurement of water and solute transport in soil, know the principles behind and the applicability of relevant physical- and biological-based remediation methods for contaminated soil sites, and be able to calculate one-dimensional water and solute transport in the soil vadose zone (from soil surface to capillary water table). The student should be able to apply relevant geostatistical methods to measured data in the soil and groundwater zones.
Learning outcomes	After completion of the course the student should be able to Knowledge • account for the basic soil physical characteristics • give details of contaminant degradation in groundwater and of remediation methods for polluted soil and groundwater Skills • predict and apply water transport parameter relations (retention, conductivity) • measure and model transport of water, solutes, air and gases in soil

	• model transport and degradation of contaminants in soil • describe relevant analytical and numerical statistical methods and methods for stochastic modelling as well as apply these methods on data measured under practical conditions
Content	• Introduction to soil as a physical, chemical and biological reactor • Soil texture and structure • Soil physical phase distribution and soil-water retention • Parametric models for soil transport parameters • Modeling and measuring water transport in the unsaturated zone • Modeling and measuring solute transport in the unsaturated zone • Measuring gas transport in the unsaturated zone • Sorption of ions and hydrophobic contaminants in soil • Biodegradation processes and models for soil contaminants • Conceptual model for a polluted soil site • Introduction to in situ methods for remediation of polluted soil sites • Confidence intervals and hypothesis testing for normal and non-normal distributed data • Linear and nonlinear regression • Spatial and temporal interpolation including kriging
Duration	5 ECTS
Language	English
Assessment	Written report
Grading	Passed/failed
Assessment criteria	As stated in the framework provisions

3.1.4 Global change biology

English title	*Global Change Biology*
Danish title	*Klimapåvirkning af biologiske systemer*
Placement	Fall, 1st semester
Prerequisites	-
Aim	To qualify the student to understand how global changes affect biological systems, animals, and human health
Learning outcomes	After completion of the course the student should be able to Knowledge • explain the how greenhouse gas emission is linked to climate change, and how climate changes affect greenhouse gas emissions • explain how climate changes can influence populations and community dynamics. • explain how increased temperature means and fluctuations influence human health with respect to water quality and

	emerging diseases • explain how populations adapt to changing thermal conditions through plastic and evolutionary responses • explain the role of evolution and phenotypic plasticity in relation to climate change • account for the factors that constraints evolutionary processes Skills • apply predictive ecosystem models to estimate how ecosystems are affected by global changes and land use • discriminate between species invasion from gradual migration due to climate changes and random species invasion Competences • Describe and use strategies that can mitigate greenhouse emission
Content	Lectures, supplemented with project work, workshops, presentation seminars, laboratory tests
Duration	5 ECTS
Language	English
Assessment	Written or oral examination
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.1.5 Groundwater Modeling and (Tools in) Geohydrology

English title	*Groundwater Modeling and Geohydrology*
Danish title	*Grundvandsmodellering og geohydrologi*
Placement	Fall, 1st semester
Prerequisites	-
Aim	To give the students fundamental knowledge of water and contaminant transport in the groundwater zone. Based on hydrological and hydrogeological data the student shall be able to set-up, calibrate and validate a groundwater model for an area of suitable size. Furthermore the student should obtain knowledge of model parameter and uncertainty estimation
Learning outcomes	After completion of the course the student should be able to Knowledge • account for fundamental hydrogeology • describe the basic principle of numerical groundwater modeling • describe chemical transport, dispersion, sorption/retardation and degradation in the groundwater zone Skills • construct, calibrate and validate of groundwater models • simulate water and contaminant transport • evaluate and quantify modeling uncertainty Competences • evaluate and handle hydrological data that forms the basis for groundwater modeling • structure and produce technical documentation of complex problems, methods and results

	• communicate problems, findings and solutions to relevant target audiences
Content	Lectures, supplemented with project work, workshops, presentation seminars, and laboratory tests, focusing on • Basic groundwater hydrology • GIS and hydrogeological data • Finite difference techniques • Principle of geological modeling • Principle of groundwater modeling • Practical groundwater modeling • Chemical and biological processes in ground water transport modeling • Stochastic modeling of groundwater transport processes • Inverse modeling
Duration	5 ECTS
Language	English
Assessment	Written report
Grading	Passed/failed
Assessment criteria	As stated in the framework provisions

3.2 2nd semester – Wastewater Treatment and Aquatic Pollution

3.2.1 Wastewater Treatment Systems

English title	*Wastewater Treatment Systems*
Danish title	*Spildevandsbehandlingssystemer*
Placement	Spring, 2nd semester
Prerequisites	-
Aim	To teach the student to design and operate urban wastewater treatment systems and to gain knowledge on the microbiological and chemical transformations processes that takes place in a wastewater treatment plant.
Learning outcomes	After completion of the course the student should be able to Knowledge • account for physical, microbial and chemical methods for separation and treatment of wastewater by activated sludge processes • describe the different microbiological and chemical processes that participate in wastewater treatment Skills • apply methods for design and analysis of wastewater treatment plants • dimension and run a treatment plant
Content	The procect focuses on • design of wastewater treatment systems

	• operation of wastewater treatment systems • microbiology of activated sludge • modeling of activated sludge treatment processes
Duration	15 ECTS
Language	English
Assessment	Oral examination based on a written report
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.2.2 Lake and Coastal Marine Ecosystems

English title	*Lake and Coastal Marine Ecosystems*
Danish title	*Sø- og kystnære marine økosystemer*
Placement	Spring, 2nd semester
Prerequisites	-
Aim	To enable the students to model and evaluate processes in the aquatic environment.
Learning outcomes	After completion of the course the student should be able to Knowledge • explain the environmental impact of selected compounds on aquatic environments Skills • identify the hydrological, chemical and biological processes that are central for the analysis and evaluation of a coastal marine environment • evaluate toxicological effects on an aquatic ecosystem • use impact assessment methods • build and analyze numerical water quality models • evaluate methods for the analysis of changing impacts on aquatic environments
Content	In this project, the students work on a chosen locality, either a coastal marine area or a lake. The given locality is analyzed using both published data and self-generated data The collected data can be incorporated into a numerical model that should be calibrated and validated
Duration	15 ECTS
Language	English
Assessment	Oral examination based on a written report
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.2.3 Modelling the Aquatic Environment

English title	*Modelling the Aquatic Environment*
Danish title	*Modellering af det akvatiske miljø*

Placement	Spring, 2nd semester
Prerequisites	-
Aim	To give the student a fundamental knowledge of water flow in marine environments. Based on the gained knowledge the student shall be able to analyse time series of environmental date and set up numerical models for a given aquatic environment.
Learning outcomes	After completion of the course the student should be able to Skills • analyze measured and calculated results for physical, chemical and biological time series • analyze the validity of measured and calculated time series based on physical, chemical or biological data • use numerical methods to generate predicted values from known time series • analyze the fundamental hydrodynamic theory for calculation of non-linear flow • apply CFD modelling to analyse turbulent flows Competences • construct, calibrate and validate hydrodynamic models
Content	• Stationarity, dependence, filtering, data distribution, filtering • Regression models autocorrelation, residual variance. • Generate predicted values based on numerical modelling, • Numerical system modelling. • Neural network • Flow dynamics. • Navier-Stokes equations • Turbulent flows including mixing theory, current profiles, energy balance. • CFD modelling
Duration	5 ECTS
Language	English
Assessment	Written or oral examination
Grading	Passed/failed
Assessment criteria	As stated in the framework provisions

3.2.4 Wastewater Treatment

English title	*Wastewater Treatment*
Danish title	*Spildevandsbehandling*
Placement	Spring, 2nd semester
Prerequisites	Basic microbiology, basic chemistry and hydraulics
Aim	To gain knowledge on the composition and characterization of wastewater and to understand the processes that is used to treat urban wastewater.
Learning outcomes	After completion of the course the student should be able to Knowlegde • account for the interaction between the physical, microbial

	and chemical processes and the loading of the treatment plant Skills • quantify the important biological, chemical and physical processes which is used for a process based wastewater treatment plant design
Content	• Characterization of wastewater • Operation and optimization of wastewater treatment systems • Anaerobic processes in activated sludge • Physical separation processes • Design of plants for mechanical and chemical treatment of wastewater • Design of activated sludge and biofilm treatment plant for removal of carbon, nitrogen and phosphor • Biological mineralization of carbon, nitrogen and phosphor • Modeling of biological mineralization of carbon, nitrogen an phosphor in suspension and biofilms
Duration	5 ECTS
Language	English
Assessment	Written or oral examination
Grading	Pass/fail
Assessment criteria	As stated in the framework provisions

3.2.5 Marine Pollution

English title	*Marine Pollution*
Danish title	*Forurening i kystnære marine områder*
Placement	Spring, 2nd semester
Prerequisites	Basic chemistry and biology
Aim	To provide fundamental insight into coastal marine waters including effects and prevention of natural and anthropogenic pollution.
Learning outcomes	After completion of the course the student should be able to Skills • describe and analyze nutrient cycling in coastal marine ecosystem • describe important organic and inorganic pollutants and pollution effects in coastal marine waters Competences • evaluate methods to prevent and alleviate antropogenic pollution in coastal marine waters
Content	• Exchange of matter between aquatic and terrestrial environments. • The marine ecosystem, light, salinity and temperature • Primary production, respiration and re-oxidation • Microbial loops, food webs

	• Turnover of C-N-S in aquatic environments. • Marine sediments • Oxygen demand and oxygen budgets • Pollution impacts on individuals, populations and communities • Man-made pollutants (xenobiotics) in marine waters • Disease-causing microorganisms (pathogens) in marine waters • Removal of pathogens during wastewater treatment • Assessment of recreational and bathing water quality • Fecal pollution source tracking
Duration	5 ECTS
Language	English
Assessment	Written or oral examination
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.3 3rd & 4th semester

3.3.1 Advanced Studies in Environmental Engineering and Technology

English title	*Advanced Studies in Environmental Engineering and Technology*
Danish title	*Videregående miljøteknologi*
Placement	Autumn, 3rd semester
Prerequisites	-
Aim	To qualify the student to analyze, evaluate and find technical solutions to selected problems within environmental engineering and technology.
Learning outcomes	After completion of the course the student should be able to Skills • comprehend and assess biological, chemical and/or physical processes within the project theme • apply and understand methods relevant for the project theme • apply and understand models relevant for the project theme • Competences • suggest suitable technical solutions relevant for the project theme
Content	The project will focus on an advanced topic within one of the following themes: • Aquatic science (lakes, streams and coastal waters) • Environmental health microbiology • Environmental soil science

	• Greenhouse gases • Sewer processes and network • Sustainable waste technology • Xenobiotics • Treatment processes Short courses ("study circles") may be offered as part of each theme. Content and duration of the courses will depend on student interests and the number of participating students.
Duration	30 ECTS
Language	English or Danish
Assessment	Oral examination based on a written report
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.3.2 Master's Thesis

English title	*Master's Thesis*
Danish title	*Kandidatspeciale*
Placement	3. and 4. semester (long Master's thesis), 4. semester (short Master's thesis)
Prerequisites	Completed 1.-2. semester or 1.-3. semester
Aim	To allow the student to conduct an independent in-depth scientific work including planning and completion of a research project
Learning outcomes	After completion of the course the student should be able to Skills • plan, complete and report a comprehensive independent research project within a set time period • carry out research and technological development and solve complicated technological problems by use of scientific methods • critically compare and evaluate the results of a research project in relation to existing knowledge and established theories in the field Competences • include relevant social, economical, safety, environmental, and working environment issues in the completion of a research project • perform a balanced and effective written and oral communication of results, conclusions and perspectives of the research project
Content	The thesis work may consist of a natural continuation of projects themes from the previous semesters. However, the thesis work may also consist of entirely new subjects with less association to previous studies, and may include project work in collaboration with an external partner. The thesis work is characterised by independent development or research including experimental work, numerical modelling, field experiments and/or comparative calculations.
Duration	30-60 ECTS
Language	English or Danish

Assessment	Oral examination based on a written report
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.4 Problem-based Learning (PBL) and Student Responsibility at Aalborg University

3.4.1 Problem-based Learning (PBL) and Student Responsibility at Aalborg University

English title *Danish title*	*Problem-based Learning (PBL) and Student Responsibility at Aalborg University* *Problembaseret læring og studerendes ansvar for læring på Aalborg University*
Placement	Spring, 2nd semester
Prerequisites	None, but the course is compulsory for students not acquainted with the Aalborg PBL model
Aim	To introduce the students majoring in chemistry or engineering a broad knowledge of polymer chemistry, such as principles of polymerization, polymer morphologies, polymer properties and so on. Meanwhile, some basic experimental techniques will be included in the lab course.
Learning outcomes	After completion of the course the student should Knowledge • know about the organization at Aalborg University and where to ask for help in different matters • know about how to communicate both in the project groups and during courses • know how a semester is structured and for the different examination forms used at Aalborg University • know how project work and laboratory work are carried out at Aalborg University including safety issues in the laboratories • know about issues concerning plagiarism and its consequences • know about the software which is used during the study • know about the IT systems used and how to get started • know about the specialist student counselors and how they may provide assistance Skills • be able to use problem-based learning and group work in project and courses at Aalborg University • be able to use Moodle to find lecture plans, timetables, and other relevant information Competences • be able to apply the concepts, theories and methods for problem-based learning and group work • be able to account for the considerations involved in the process of formulating project reports in practice.
Content	Lectures, discussions and group work. The course will take place during two Wednesday afternoons.

Duration	
Language	English
Assessment	Internal assessment during the course/class participation according to the rules in the Examination Policies and Procedures, Addendum to the Framework Provision of the Faculty of Engineering and Science, Aalborg University. In this case the assessment is primarily based on the oral performance during the course. This means that the student has to be active during the course time and participate in discussions. The course is an integrated part of the project and a precondition for participation in the project examination for those who are not acquainted with the Aalborg PBL model. Consequently, no diploma will be issued for the course nor will it appear on the academic transcripts.
Grading	Passed/failed
Assessment criteria	As stated in the framework provisions

Chapter 4. Entry into force, interim provisions and revision

The study regulations are adopted by the Study Board of Biotechnology, Chemical and Environmental Engineering, approved by the Dean of the Faculties of Engineering, Science and Medicine and take effect from 1st September, 2014.

Students who wish to complete their studies under the former study regulations from 2013 must conclude their education by the summer examination 2015, since examinations under the former study regulation are not offered after this time.

In accordance with the Framework Provisions the Faculty of Engineering and Science at Aalborg University, the study regulations must be revised 5 years at the latest after their taking effect.

The current, valid version of the study regulations is published at www.ses.aau.dk.

Chapter 5. Chapter 5: Other rules

5.1 3rd semester

On the 3rd semester in accordance with the framework provisions section 5.3 the students have on their own initiative the following options instead of an ordinary project.

- Documentation of the semester project through a scientific article
- Individual project preparing a scientific report or article
- Transversal studies
- Relevant internship
- Long dissertation (Master thesis) on 3rd and 4th semester on programmes experimental in nature.

The particular wishes of the students must be approved by the study board prior to semester start.

5.2 Rules for written assignments including the Master's thesis and its scope

An evaluation of the student's spelling and writing ability enters into the assessment of all written work, regardless of what language it is written in. Orthographic and grammatical correctness and stylistic proficiency are taken as a basis for the evaluation of language performance. Language performance must always enter in as an independent dimension of the total evaluation. However, no examination can be assessed as 'Pass' on the basis of language performance alone; similarly, an examination normally cannot be assessed as 'Fail' on the basis of poor language performance alone. The above applies unless other rules are stated in connection with the individual examination.

The Master's thesis must include a summary in a foreign language (English, French, Spanish or German subject to the study board's approval). If the project is written in a foreign language (English, French, Spanish or German) the summary can be written in Danish subject to the study board's approval. The summary must be at least 1 page and may be at most 2 pages (the summary is not counted in any fixed minimum and maximum page count per student). The summary enters into the evaluation of the project as a whole.

5.3 Credit transfer

Students with other programme elements from other Master's programmes can obtain credit/admission subject to the study board's evaluation of the individual application (meritering).

5.4 Rules for the maximum period of enrolment

The Master's programme must be completed within 4 years at the latest following enrolment, excluding leaves of absence.

5.5 Rules for examinations

The rules for examinations appear in "Examination Policies and Procedures" published on the Faculty of Engineering and Science website www.teknat.aau.dk.

5.6 Exemption

In the case of unusual circumstances, the study board can grant exemptions from those parts of the study regulations that are not fixed by law or ministerial order. Exemption regarding an examination applies to the immediate examination.