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

AALBORG UNIVERSITY
DENMARK

Curriculum for
Master of Science in Technology in Environmental Engineering

Aalborg University
September 2014

Preface:
Pursuant to Act 367 of March 25, 2013 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's program, Master of Science (MSc) in Technology in Environmental Engineering is stipulated. The program also follows the Framework Provisions and the Examination Policies and Procedures for the Faculty of Engineering and Science.

Aalborg University, 2014

Niels T. Eriksen
Chairman of Study Board

Approved by the Dean 2014

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Chapter 1. Legal Basis of the Curriculum, etc.

1.1 Basis in ministerial orders
The Master's program, Master of Science (MSc) in Technology in Environmental Engineering is organised in accordance with the Ministry of Science, Innovation and Higher Education's Order no. 1520 of December 16, 2013 on Bachelor's and Master's Programs at Universities (the Ministerial Order of the Study Programs) and Ministerial Order no. 1518 of December 16, 2013 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.

1.2 Faculty affiliation
The Master's programme falls under the Faculty of Engineering and Science.

1.4Board of Studies affiliation
The Master's program falls under the Board of Studies for Biotechnology, Chemical and Environmental Engineering.

Chapter 2. Admission, Degree Designation, Program Duration and Competence Profile

2.1 Admission
Admission to the Master's program in Environmental Science requires a Bachelor's degree in Biology, Environmental Engineering, or the like.

Students with another Bachelor's degree, upon application to the Board of Studies, will be admitted after a specific academic assessment if the applicant is deemed to have comparable educational prerequisites. The University can stipulate requirements concerning conducting additional exams prior to the start of study.

2.2 Degree designation in Danish and English
The Master's program entitles the graduate to the designation cand.scient.techn. (candidatus/candidata scientiarum technologiae) i miljøteknologi. The English designation is: Master of Science (MSc) in Technology (Environmental Engineering).

2.3 The program's specification 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.

2.4 Competence profile on the diploma
The following competence profile will appear on the diploma:

> A graduate of the Master's program has competencies acquired through an educational program that has taken place in a research environment.
> The graduate of the Master's program can perform highly qualified functions on the labor market on the basis of the educational program. Moreover, the graduate has prerequisites for research (a Ph.D. program). Compared to the Bachelor's degree, the graduate of the Master's program has developed her/his academic knowledge and independence, so that the graduate can independently apply scientific theory and method in both an academic and occupational/professional context.

2.5 Competence profile of the program:

The graduate of the Master's program:

Knowledge	has knowledge within environmental science that in selected areas such ecosystem engineering, ecosystem services, soil science, pollution and remediation of ecosystems, and environmental management is based on the highest international research.
	is able, on a scientific basis, to understand and reflect over the knowledge in the above-mentioned areas and to identify scientific problems
Skills	masters the scientific methods and tools of the above-mentioned areas and master the general skills that are tied to work within environmental science and technology.
	can evaluate and select among the scientific theories, methods, tools and general skills of environmental science and technology and environmental management, and set up, on a scientific basis, new analysis and solution models
	can communicate research-based knowledge and discuss professional and scientific problems with both peers and non-specialists.
Competencies	is able to develop methods and models for environmental management issues, and evaluate and solve assignments concerning environmental and management issues in private and public enterprises.
	manages work and development situations that are complex, unpredictable and require new solutions.
	can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility.
	can independently take responsibility for own professional development and specialization

Chapter 3. Content and Organization of the Program

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
- Project work
- Exercises (individually and in groups)
- Teacher feedback
- Scientific reflection

Overview of the program:

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).

Semester	Module		ECTS	Assessment	Exam
1st	Human Impact on the Environment		15	7-point scale	External
	Global Change Biology		5	7-point scale	Internal
	Environmental Soil Science and Geostatistics		5	Pass/fail	Internal
	Experimental Hydrogeology		5	7-point scale	Internal
2nd	Ecosystem Analysis and Management		15	7-point scale	External
	Marine Pollution		5	7-point scale	Internal
	Elective course • Modelling the Aquatic Environment • Wastewater Treatment • Environmental Management* • Danish Biotopes*		 5 5 5 5	 Pass/fail 7-point scale Pass/fail Pass/fail	 Internal Internal Internal Internal
3rd	Elec-tives	Master's Thesis** Individual semester*** External studies	30 30 30		
4th	Master's Thesis		30	7-point scale	External
Total			120		

* Environmental management and Danish Biotopes are parts of the MSc programme in Biology and tought in Danish.

** Aalborg University organizes a number of cross-disciplinary 5 ECTS modules at 3rd semester. If one or more of these are followed, the project module is reduced in size accordingly.

***cf. Framework Provisions section 9.4.1, students are given several choices of composing an individual planned semester, including extending the master's thesis to up to 60 ECTS.

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

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 - Human impact on the environment

3.1.1 Human impact on the environment

English title	***Human Impact on the Environment***
Danish title	***Menneskeskabte miljøpåvirkninger***
Placement	Fall, 1st semester
Prerequisites	-
Aim	to qualify the student to understand, measure and model the effect of e.g. land use change or increased load of chemicals on natural and artificial ecosystems.
Learning outcomes	After completion of the course the student should be able to Knowledge • explain how land use may affect natural ecosystems • explain how chemical loads may affect the ecosystem structure and how the effects can be mediated. • explain what administrative structures, including legislation can be used to handle these environmental problems Skills • Use ecological models to describe impact of chemicals on natural ecosystems • Apply selected methods to measure load, degradation and fate of selected chemicals in ecosystems. Competences • use environmental management tools to solve and prevent environmental perturbations • disseminate a complete project
Content	The project focuses on how land-use change and increased load of chemicals may affect selected ecosystems and suggest actions relating to remediation technologies and management to prevent and alleviate the ecosystem distresses caused by e.g. land-use change or chemicals. The project could be comparison of organic vs. conventional farming. The effect of household chemicals and pesticides on urban recreational areas.
Duration	15 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

3.1.2 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

3.1.3 Experimental hydrogeology

English title ***Danish title***	***Experimental Hydrogeology*** ***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

3.1.4 Environmental Soil Science and Geostatistics

English title ***Danish title***	***Environmental Soil Science and Geostatistics*** ***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

3.2 2nd semester – Ecosystem Analysis and Management

3.2.1. Ecosystem analysis

English title ***Danish title***	***Ecosystem Analysis and Management*** ***Økosystemanalyse***
Placement	Fall, 1st semester
Prerequisites	-
Aim	to provide the student the tools to analyze environmental impacts and evaluate how the most important environmental impacts affect surrounding environments, on local as well as on global scales.
Learning outcomes	After completion of the course the student should be able to Knowledge • Account for the dominating factors that show important environmental impacts • Explain the differences between different management strategies based on differences in organizational structures, the emergence of international organizations and interaction with the market. Skills • make load balances for chemical compounds and analyze the impact of these compounds on e.g. water or food resources • evaluate local and global effects of green-house gas emissions

	Competences • function as environmental scientist or administrator in eras of changing climate and environments
Content	The project will focus on a natural environment where management aspects of the natural resources are an integral part of the ecosystem function.
Duration	15 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

3.2.2 Marine pollution

English title ***Danish title***	***Marine Pollution*** ***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

3.2.3 Modelling the Aquatic Environment

English title ***Danish title***	***Modelling the Aquatic Environment*** ***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 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	5 ECTS
Language	English
Assessment	Oral examination based on a written report
Grading	7-point scale
Assessment criteria	As stated in the framework provisions

3.2.5 Environmental Management

Danish title	***Miljøforvaltning***
English title	***Environmental Management***
Placering	Forår (2. semester)
Forudsætninger	-
Formål	Det er kursets formål at sætte de studerende i stand til at forberede og udføre formidling af biologisk viden indenfor en given afgrænset biotop på flere niveauer. Det er bl.a. kursets formål at give deltagerne indsigt og forståelse af problemstillinger af betydning for naturforståelse og forvaltning i Danmark og eksempler på praktisk forvaltning, herunder EU's habitatdirektiv og NOVANA-programmet samt de mekanismer der er sat i værk for at nå målene i dette program. De studerende tilrettelægger en ekskursion hvor de fremlægger stoffet på et passende pædagogisk niveau.
Læringsmål	Studerende der gennemfører modulet skal kunne Viden • redegøre for færdigheder der kræves for at udføre en VVM undersøgelse • forklare de vigtigste faktorer der påvirker artssammensætning på lokal

	skala • forklare principperne for dansk naturforvaltning under NATURA 2000 samt relatere disse til økologiske teorier og naturtypernes historiske baggrund • diskutere resultater fra konkrete undersøgelser i forhold til generel økologisk teori og deres praktiske anvendelse indenfor vegetations-undersøgelser og forvaltning • Redegøre for hvorledes EU direktiver vedrørende miljø bliver indarbejdet I dansk miljølovgivning. • Redegøre for betydningen af EU' s miljødirektiver for dansk naturforvaltning Færdigheder • deltage i og udføre VVM undersøgelser • anvende dansk lovgigvning indenfor natur- og miljø-forvaltning
Indhold	• Principperne for dansk naturforvaltning under NATURA 2000 og vandrammedirektivet • Forekomst af vigtige plante- og dyrearter i forhold til økologiske faktorer, naturtype og deres økologiske forhold • Beskrivelser af lokaliteter med særlig biologisk betydning • Aktuelle problemstillinger af betydning for naturforståelse og forvaltning i Danmark og eksempler på praktisk forvaltning, herunder EU's habitatdirektiv og NOVANA-programmet samt de mekanismer, der er sat i værk for at nå målene i dette program • Dansk miljølovgivning • EU-miljølovgivning • EU's direktiver vedrørende miljø • Nationale og internationale miljøkonversioner
Omfang	5 ECTS
Sprog	Dansk
Prøveform	Aktiv deltagelseog skriftlig afleveringsopgave (2 døgns varighed)
Bedømmelse	Bestået/ikke bestået
Vurderingskriterier	Er angivet i rammestudieordningen.

3.2.6 Danish Biotopes

Danish title ***English title***	***Danske naturtyper*** ***Danish Biotopes***
Placering	Forår (2. semester)
Forudsætninger	-
Formål	Formålet med kurset er at give studerende kendskab til et bredt udsnit af danske naturtyper og naturområder, og hvilke særlige kendetegn, herunder dyr, planter samt geologiske og geografiske forhold, som er karakteristiske for de enkelte naturtyper, danske dyr og planter, samt naturbeskyttelse i Danmark og EU.
Læringsmål	Studerende der gennemfører modulet Viden • skal have et overordnet kendskab til Danmarks geologi og forskelle i naturtyper, jordbunds- og klimatiske forhold i de forskellige landsdele

	• skal kende nogle af de mest karakteristiske naturtyper og interessante natur-lokaliteter i Danmark • skal kende et bredt udsnit af Danmarks planter, og kunne bestemme planter vha. nøgler og have kendskab til deres krav til miljøet hvor de gror • skal kende Danmarks almindelige pattedyr, fugle, krybdyr og padder og have kendskab til deres udbredelse og levevis • skal have kendskab til et udvalg af insekter, krebsdyr, bløddyr og andre invertebrater i Danmark • skal have kendskab til faunistisk og floristisk succession • skal kende Naturbeskyttelsesloven og andre love, bestemmelser, regulativer og offentlige planer, som vedrører beskyttelsen af naturen, og have kendskab til offentlig naturforvaltning • skal kende til væsentlige problemstillinger på natur- og miljø-området (eutrofiering, fragmentering af naturområder, biodiversitet m.v.) samt væsentlige interessekonflikter på miljøområdet (opdyrkning, byudvikling, landinvinding, jagt og fiskeri m.v.) Færdigheder • skal kunne karakteriserer naturtyper på baggrund af en lokalitets vegetation, dyreliv og geologi skal kunne vurdere hvilke lov- og regulativ-mæssige beskyttelseskrav, som omfatter en given lokalitet
Indhold	Kurset vil omfatte et bredt udvalg af danske naturtyper og beskrive hvilke forskelligheder der har betydning for et områdes flora og fauna. Der vil afholdes ekskursioner til forskellige danske naturtyper, f.eks. højmose, hede, klithede, overdrev, eng, strand-overdrev og -eng, marsk, skov og vådområder, samt besøg i nogle Danmarks mest interessante natur-lokaliteter, f.eks. Lille Vildmose, Vejlerne, Hanstedreservatet eller Råbjerg Mile, og naturgenopretnings-projekter, f.eks. Vilsted Sø eller Skjern Ådal. På de enkelte lokaliteter udføres feltarbejde i form af bestemmelse af karakteristiske planter, insekter og andre dyr og evt. jordbundsanalyser. Ekskursionerne suppleres med forelæsninger og gruppearbejde, og der udfærdiges en rapport med en kort karakterisering af hver enkelt lokalitet, som den studerende senere kan bruge som sit eget opslagsværk.
Omfang	5 ECTS
Sprog	Dansk
Prøveform	Aktiv deltagelse
Bedømmelse	Bestået/ikke bestået
Vurderingskriterier	As stated in the framework provisions

3.3 Master's thesis

3.3.1 Master's thesis

English title ***Danish title***	***Master's Thesis*** ***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

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

3.3.1 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 curriculum is approved by the Dean of the Faculty of Engineering and Science and enters into force as of September 2014.

In accordance with the Framework Provisions for the Faculty of Engineering and Science and The Faculty of Medicine at Aalborg University, the curriculum must be revised no later than 5 years after its entry into force.

Chapter 5. Other Provisions

5.1 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 spelling and formulation 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 Board of Studies 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.[1] If the project is written in English, the summary must be in Danish.[2] The summary must be at least 1 page and not more than 2 pages. The summary is included in the evaluation of the project as a whole.

5.2 Rules concerning credit transfer (*merit*), including the possibility for choice of modules that are part of another program at a university in Denmark or abroad

In the individual case, the Board of Studies can approve successfully completed (passed) program elements from other Master's programs in lieu of program elements in this program (credit transfer). The Board of Studies can also approve successfully completed (passed) program elements from another Danish program or a program outside of Denmark at the same level in lieu of program elements within this curriculum. Decisions on credit transfer are made by the Board of Studies based on an academic assessment. See the Framework Provisions for the rules on credit transfer.

5.3 Rules for examinations

The rules for examinations are stated in the Examination Policies and Procedures published by the Faculties of Engineering, Science and Medicine on their website.

5.4 Exemption

In exceptional circumstances, the Board of Studies 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.

5.5 Completion of the Master's program

The Master's program must be completed no later than four years after it was begun.

[1] Or another foreign language (upon approval from the Board of Studies.
[2] The Board of Studies can grant exemption from this.

5.6 Rules and requirements concerning the reading of texts in foreign languages and a statement of the foreign language knowledge this assumes

It is assumed that the student can read academic texts in modern Danish, Norwegian, Swedish and English and use reference works, etc., in German.

5.7 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.

5.8 Completion of the Master's program

The Master's program must be completed no later than four years after it was begun.

5.9 Rules and requirements concerning the reading of texts in foreign languages and a statement of the foreign language knowledge this assumes

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.