Curriculum for the Joint European Master in Environmental Studies (JEMES)

School of Architecture, Design and Planning
The Faculty of Engineering and Science
Aalborg University
2010
Preface

Pursuant to Act 985 of October 21, 2009 on Universities (the University Act) with subsequent changes, the following curriculum for the Master programme in Environmental Studies is stipulated. The programme also follows the Framework Provisions and the Examination Policies and Procedures for the Faculty of Engineering and Science.
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Chapter 1: Legal Basis of the Curriculum, etc.

1.1 Basis in Ministerial Orders
The Master’s programme in Environmental Studies is organised in accordance with the Ministry of Science, Technology and Innovation’s Ministerial Order no. 814 of June 29, 2010 on Bachelor and Master Programmes at Universities (the Ministerial Order of the Study Programmes), Order no. 815 of June 29, 2010 on Erasmus Mundus Programmes at Universities and Ministerial Order no. 857 of July 1, 2010 on University Examinations (the Examination Order) with subsequent changes. Further reference is made to Ministerial Order no. 181 of February 28, 2010 (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, Aalborg University.

1.3 Board of Studies Affiliation
The Master’s programme falls under the Board of Studies of Planning & Geography under the School of Architecture, Design & Planning.
**Chapter 2: Admission, Degree Designation, Programme Duration and Competence Profile**

### 2.1 Admission
Admission to the Master’s Programme in Environmental Studies requires:

- A Bachelor’s degree or equivalent, at second-class (upper) level or higher, in an engineering, science, technology, or management subject
- An appropriate level of competence in the English language, through attaining IELTS 6.5, TOEFL 550 (PBT) / 213 (CBT) / 79 (IBT) or similar.

### 2.2 Degree Designation
The Master programme entitles the graduate to the designation Master of Science (MSc) in Environmental Studies.

### 2.3 The Programme’s Specification in ECTS Credits
The Master programme is a 2-year, research-based, full-time study programme. The programme is set to 120 ECTS credits.

### 2.4 Competence Profile of the Programme
The graduate will have acquired skills and competences through studies undertaken in a research environment.

On the basis of the studies, the graduate can perform highly specialized functions in the labor market. In addition, the graduate has qualifications for research (PhD studies). Compared to the undergraduate, the graduate has expanded his/her expertise and independence, so that the graduate independently applies scientific theory and method in academic and occupational / professional contexts.

**The graduate of the Master programme:**

**Knowledge**
- Has profound knowledge in the following subject areas that, in selected areas, is based on the highest international research in a subject area
  - Environmental Management
  - Environmental Engineering
  - Environmental Technology
  - Environmental Processes
  - Environmental Planning
  - Sustainable Development
- Can understand and, on a scientific basis, reflect over the subject areas’ knowledge and identify scientific problems.
- In depth knowledge of relevant national and international research work
- Has basic knowledge about the implications of research ethics
- Possesses expert understanding in extension of the previous degree / or a broad perspective on the discipline of the Bachelor degree / or new professional competence next to the Bachelor degree
- Possesses insight into and understanding of the societal conditions under which environmental and sustainability policies, strategies, plans, technologies and projects are implemented

**Skills**
- Excels in analysing complex environmental problems,
designing new and innovative solutions, scientific methods and tools, and general skills related to employment within Environmental Studies

- Can evaluate and select among the subject areas’ scientific theories, methods, tools and general skills and, on a scientific basis, advance new analyses and solutions
- Can communicate research-based knowledge and discuss professional and scientific problems with both peers and non-specialists.

Competencies

- Can manage work and development in complex and unpredictable situations requiring 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 specialisation
- Can act successfully in an international and inter-cultural environment
Chapter 3: Content and Organisation of the Programme

The Master of Science in Environmental Studies (JEMES) is a unique 2-year programme offered jointly by the Institute of Water Protection and Institute of Environmental Technology and Energy Economics (Technische Universität Hamburg-Harburg, TUHH); the Department of Development & Planning (Aalborg University, AAU); the Institut de Ciència i Tecnologia Ambiental (Universitat Autònoma de Barcelona, UAB); and the Department of Environment and Planning (Universidade de Aveiro, UA), which enables excellent graduates with first degrees in engineering, science, management and technology to successfully deal with complex environmental processes and problems across international, cultural and disciplinary boundaries.

Students study with at least two European Universities with the programme’s delivery over two years providing a greater depth of learning, more organisational engagement and a rich cultural experience.

The programme is fulltime over 24 months and divided into 4 semesters of study.

The programme is divided in two overall streams:
- Environmental Technology Engineering (with TUHH, and UA)
- Environmental Management Engineering (with AAU, and UAB)

Students may start and end their studies at any of the four participating universities. Students must, however, spend 75% of their studies in one stream and 25% in the other. The programme is delivered in English. The MSc award is made jointly by all four universities.

A mobility over is provided at the end of this document.

At Aalborg University, the first semester focuses on basic concepts within Environmental Management and Sustainability with an emphasis on the organisation and the micro-economic level. The second semester offers an institutional and societal perspective on Environmental Management & Sustainability Science, with emphasis on policy & institutions.

The aim for 1st semester is preparation of suggestions to environmental and sustainability management improvements at an organisation or within a project. For the 2nd semester, the aim is preparation of suggestions to environmental and sustainability management improvements at policy, plan, and/or programme level. Both semesters combine lectures, workshops, assignments etc. with project-work through a problem-oriented learning strategy.

The 3rd semester has a strong focus on project work and gaining practical experience. The semester will enable students to appreciate theoretical reflective work practice and 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 3rd semester project is either carried out in close collaboration with a private or public sector organisation, or an NGO; or is connected to on-going research at the department where the student is studying. The purpose of this semester is to design and execute an individual project study within the topics of the programme. This will enable students to learn and demonstrate proficiency in innovation and integration processes as well as management and implementation of technological and organisational change projects.

During the 4th semester at Aalborg University, the Master’s Thesis is completed. The Master’s Thesis may be combined with the 3rd semester in an extended Master’s Thesis.
3.1 Overview of the Programme

The programme at Aalborg University is presented in the table below and in the following sections 3.2 to 3.5.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Module</th>
<th>ECTS</th>
<th>Grading</th>
<th>Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Business and Sustainability Management (project)</td>
<td>15</td>
<td>7-point scale</td>
<td>Internal</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Theories of Science and Research Designs (course)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Current Topics in Sustainability Research I (course)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Tools and Systems of Sustainable Development (course)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Sustainability Management in a Societal &amp; Institutional Perspective (project)</td>
<td>15</td>
<td>7-point scale</td>
<td>External</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Policy, Planning and Governance (course)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Current Topics in Sustainability Research II (course)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Sustainability by Design (course)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Professional Development (project; depending on optional courses)</td>
<td>30/25/20</td>
<td>7-point scale</td>
<td>Internal</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Urban Development, Causes and Consequences (optional)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Tools and Systems of Sustainable Development (optional)</td>
<td>5</td>
<td>Pass/fail</td>
<td>Internal</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Master’s Thesis</td>
<td>30</td>
<td>7-point scale</td>
<td>External</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As per the mobility plan, one or more semesters in the Environmental Studies programme may be taken at one or two other partner universities. In such cases, credits for the respective semester(s) are automatically transferred.

An overview of course plans for the partner universities’ semesters are provided in Annex 2.
3.2 Environmental Studies, 1st semester

3.2.1 Project Module (15 ECTS)

Title: Business & Sustainability Management (Virksomheds- og bæredygtighedsledelse)

Prerequisites: Students must have a bachelor’s degree in Urban, Energy and Environmental Planning, Geography, Land Surveying, Biology, or other fields with similar contents after a concrete evaluation.

Aim: Students passing the project module will acquire the following:

Knowledge:
• Intensive knowledge of and understanding of businesses' and organisations’ framework conditions, their challenges and roles in relation to sustainable development, and tools and systems to analyse those relevant at a company or organisational level

Skills:
• Can identify, analyse, and evaluate project and sustainability relevant problems and consequences.
• Can understand, use and critically reflect on relevant quantitative as well as qualitative economical, sociological, environmental, and/or engineering science analysis methods, and identify interests associated to these.
• Can independently collect relevant data in relation to the project’s problem and task, as well as evaluate the quality and reliability of these data.
• Can motivate, argue and disseminate the project’s general structure end methods in a scientific context, and in addition be able to critically relate to sources of knowledge and information and reference these accurately.

Competences:
• Can within a study and project context structure and handle the complex composition of concrete challenges existing at and within an organisation
• Can combine and connect relevant theories, comprehensions, methods and analyses in order for these to synthesise and form concrete strategies and plans aimed at organisations’ possibilities to work with sustainable solutions.
• Can independently initiate and be part of cross-disciplinary planning and team work at the organisational level.

Examination: Verbal individual exam with point of departure in the project report. Internal adjudicator. Graded in accordance with the Danish 7-point scale.

3.2.2 Course Modules (3 x 5 ECTS)

Title: Theories of Science and Research Designs (Videnskabsteori og forskningsdesign)

Prerequisites: It is expected that students have a level corresponding to having passed “Basic theory and methods – theory of science and geographical information science” on the second semester of the BSc programme in Urban, Energy and Environmental Planning, or other similar courses after a specific evaluation. Guest students are exempted but will be directed to relevant supplementary literature by the course responsible.

Aim: Students passing the semester will acquire the following

Knowledge
- Possess knowledge of the history of theory of science and theoretical frameworks at a master’s level
- Must understand the relationship between theories of science, research design and research methods at a master’s level
- Must at a masters’ level understand the different theories of science positions’ contents and relation to one another as well as the ability to relate critically to these
- In-depth knowledge about own field’s relation to theories of science and research design

Skills
- The ability to apply the basic issues of theory science in the assessment or sources and references in projects at a masters’ level
- The ability to independently assess the value and reliability of own knowledge generation in relation to basic scientific issues
- The ability to – at a research level – apply theories of science, research design and research methods within own field
- The ability to communicate knowledge about theories of science and research designs to people within as well as outside the trade

Competences
- The ability the reflect critically on project-related choice of values, theories of science and methods
- The ability to continuous professional development through acquisition of new knowledge about the development and renewable of theories of science and research designers

Teaching: Lectures, work-shops, seminars, assignments and presentation, lecturer feedback, etc.

Examination: Written individual exam. Internal adjudicator. Passed / not passed

Title: Tools and Systems of Sustainable Development (Værktøjer og systemer i bæredygtig udvikling)

Prerequisites: None

Aim: Students passing the semester will acquire the following

Knowledge
- In-depth knowledge of different tools and management systems to achieve sustainable development at organisational level
- Understanding of the strengths and weaknesses of various tools and systems in relation to the organisational context.

Skills
- Can analyse and evaluate various tools and approaches to incorporate environmental efforts in an organisation ranging from mapping and documentation to ensuring continuous environmental improvement through motivation, participation, etc.
- Can use different tools for a product-oriented environmental effort, including life cycle assessment and eco-design
- Can help to strengthen the social dimension of sustainability efforts, including the introduction of the Corporate Social Responsibility
- Can, with the help of various tools, assess the effects of both strategic and project-related initiatives on sustainable development
- Can apply theories of power, learning and organisation to assess the embedded understanding of context present in various tools and systems.

Competences
- Can reflect critically on project-related choices of tools and systems and their importance for environmental efforts in an organisation
- Can continuously adjust and adapt different tools and systems to the current challenges and needs of an organisation

Teaching: lectures, seminars, workshops, simulations, assignments and presentation, lecturer feedback, etc.

Examination Written individual exam. Internal adjudicator. Passed / not passed
Title: Current Topics in Sustainability Research I (Aktuelle emner i forskning om bæredygtighed I)

Prerequisites: None

Aim: Students passing the semester will acquire the following

Knowledge
- Intensive knowledge of general themes that relate to organisations’ challenges in relation to sustainable development
- Knowledge of the complexities of current and concrete challenges at an organisational level
- Knowledge of companies’ interaction with their different stakeholders and the form this interaction may take
- Knowledge of relevant theories, comprehensions, methods and analyses, which concretise organisations’ opportunities for working with sustainable solutions

Skills
- Can, at the organizational level, identify, analyse, and evaluate sustainability relevant problems and consequences.
- Can evaluate cross-disciplinary planning and team work at the organisational level
- Can identify interests linked to organisations’ work (or lack thereof) with sustainable development
- Can disseminate and discuss overall themes that are of particular interest to organisations’ work with sustainable development.
- Can reflect on relevant quantitative as well as qualitative economical, sociological, environmental, and/or engineering science analysis methods

Competences
- Can independently initiate and be part of cross-disciplinary planning and team work at the organisational level.

Teaching Lectures, seminars, assignments and presentation, lecture feedback.

Examination Active participation in lectures and seminars, including presentation of final assignment. Passed / not passed

3.3 Environmental Studies, 2\textsuperscript{nd} semester

3.3.1 Project Module (15 ECTS)

Title: Sustainability Management in a Societal & Institutional Perspective (Bæredygtighedsledelse i et samfundsmæssigt og institutionelt perspektiv)

Admission: Students (guest and exchange students exempted) must have participated in 1\textsuperscript{st} semester's courses, project work and exams.

Aim: Students passing the project module will acquire the following:

\textit{Knowledge}:  
- Thorough knowledge and understanding of social conditions and challenges related to environmental management and sustainable development,
- Thorough knowledge and understanding of different and perhaps competing interests and roles in relation to environmental management and sustainable development

\textit{Skills}:  
- Can analyse and understand the (non)handling of environmental issues at a societal level, including integration of environmental policies, instruments and institutional aspects in relation to an overall picture of society's management of environmental problems
- Can formulate and analyse proposals for strategies in the environmental field, based on an analysis of the social conditions
- Can identify, analyse and evaluate project-relevant sustainability related issues and consequences in an overall societal perspective
- Can understand, use and critically reflect on relevant quantitative as well as qualitative economical, sociological, environmental, and/or engineering science analysis methods, and identify interests associated to these.
- Can independently collect relevant data in relation to the project's problem and task, as well as evaluate the quality and reliability of these data.
- Can motivate, argue and disseminate the project's general structure end methods in a scientific context, and in addition be able to critically relate to sources of knowledge and information and reference these accurately.

\textit{Competences}:  
- Can structure and manage the complex mix of concrete challenges at societal level, especially related to environment and sustainable development
- Can combine and connect relevant theories, comprehensions, methods and analyses in order for these to synthesise and form concrete strategies and plans aimed at institutional and societal possibilities to work with sustainable solutions.
- Can independently initiate and be part of cross-disciplinary planning and team work that crosses community levels, nationalities and cultures.

Examination: Verbal individual exam with point of departure in the project report. External adjudicator. Graded in accordance with the Danish 7-point scale.

3.3.2 Course Modules (3x5 ECTS)

Title: Policy, Planning & Governance (Politik, planlægning og governance)

Prerequisites: None

Aim: Students passing the semester will acquire the following

Knowledge
- Knowledge of power, politics and policy in relation to decision making
- Knowledge of governance and planning in relation to decision making
- Knowledge of discourses, institutions and actors as analytical tool for decision-making
- Ability to reflect critically on the application of the presented concepts and analytical methods

Skills:
- Must at advanced level be able to apply the introduced concepts and methods of analysis in relation to specific issues
- Ability to independently develop and introduce new concepts and methods of analysis in relation to issues relevant to own academic field and profession
- Ability to communicate knowledge about policy, planning and governance for professionals as well as non-professionals

Competencies:
- Critically and independently able to use and develop the presented concepts and methods of analysis in problem-based project work
- Encompass continuous professional development through acquisition of new knowledge about policy, planning and governance

Teaching: Lectures, work-shops, seminars, assignments, presentation, lecturer feedback, etc.

Examination: Written individual exam. Internal adjudicator. Passed / not passed
Title:   **Sustainability by Design (Bæredygtighed gennem design)**

Prerequisites: None

Aim:   Students passing the semester will acquire the following

**Knowledge:**
- Thorough knowledge and understanding of various tools and their application in solving design, planning, and policy-related tasks on a sustainable basis

**Skills:**
- Can critically reflect on a given problem, argue for and apply appropriate tools, theories and practices in order to develop proposals for solutions
- Can discuss institutional perspectives on the given option
- Can identify, analyse and evaluate project-relevant sustainability related problems and consequences in an overall societal perspective

**Competencies:**
- Can organise and manage the complex mix of practical challenges related to solution of design, planning, and policy-related tasks on a sustainable basis
- Can combine and compose the application of relevant theories, understandings, methods and assessments, so these form a synthesis toward developing specific strategies and plans that allow work with sustainable solutions
- Can motivate, argue, and communicate the project's general structure, methodology and solution for both professionals and non-professionals

Teaching:   Lectures, seminars, workshops, assignments, presentation, lecturer feedback, etc.

Examination:   Written individual exam. Internal adjudicator. Passed / not passed

**Evaluation criteria:** As stated in the Framework Provisions.
Title: Current Topics in Sustainability Research II (Aktuelle emner i forskning om bæredygtighed II)

Prerequisites None

Aim Students passing the semester will acquire the following

Knowledge
• Thorough knowledge of general and current topics in relation to sustainable production and consumption
• Thorough knowledge of relevant theories, understandings, methods and analyses that concretises different actor opportunities to work on sustainable production and consumption
• Have detailed and specialised knowledge of different forms of Danish and international environmental, energy and climate regulation

Skills
• can from a political and institutional perspective identify, analyse and assess sustainability related problems and consequences
• can communicate and discuss environmental sustainability as well as the implications of plans, programs and projects
• can communicate and discuss broad themes that have particular relevance for sustainable production and consumption
• can reflect on relevant quantitative and qualitative economic, sociological, environmental and / or engineering methods of analysis

Competences:
• can independently initiate and participate in interdisciplinary work and collaborate across organisational levels
• can independently take responsibility for own professional development and specialisation

Teaching: Lectures, seminars, assignments, presentation, lecturer feedback.

Examination Active participation throughout the course of the seminars. Passed/Failed. Students are required to work in groups in order to 1) finalise an article in popular science format, and 2) review one of the articles submitted (not their own); expected length of article is 3 normal A4 pages (around 900-1200 words).

3.4 Environmental Studies, 3rd semester

3.4.1 Professional Development (Faglig og professionel udvikling)

Admission: Passed 1st semester of the MSc in Environmental Studies or the like, and must have participated in 2nd semester’s courses, project work and exams.

On the 3rd semester, the student can choose between two options:

**Option 1: Project semester – with or without integrated internship**

The students may choose to conduct a traditional semester project that will normally build on the academic skills within which the student has specialized in during the 1st and 2nd semesters, and/or set the scene for the topic that the student would write their thesis on. The semester will include the preparation of a project report or a scientific article - perhaps with the supervisor as co-author. A semester project can be done individually or in groups of 2 to 4 students.

To support the project work, courses on “Scientific Writing” and “Project Management” are offered. Both can be followed as so-called ‘free study activity’. The student may choose to integrate an internship in Denmark or abroad in their project semester. Only students who have studied one or more semesters at Aalborg University previously may integrate an internship, and these may be of maximum 2-4 months duration. For each individual internship, its specific learning objectives clearly reflecting the academic issues must be established in advance and approved by the Board of Studies for Planning and Geography.

**Aim:** Students who complete the module are expected to:

**Knowledge**
- Must within a chosen part of his/her field have knowledge at the highest level of international research
- Must understand and relate critically to the area’s knowledge and must be able to identify either scientific or practical problem areas in a given context

**Skills**
- Must master the area’s scientific methods and tools as well as master general skills linked to solving the chosen problem
- Must be able to assess and chose between the field’s scientific methods, tools and general skills as well as establish new analytical and problem solving models
- Must be able to discuss professional and scientific issues with peers as well as non-specialists

**Competences**
- Must be able to control work and development situations that are complex, unpredictable and require new methods of solving
- Must independently be able to start and carry out professional and interdisciplinary cooperation and assume professional responsibility
- Must independently be able to assume responsibility of own professional development and specialization

**Teaching:** Project work, with or without integrated internship. In case of the latter, the student is included in the organisation’s daily work. Concurrent to the work in the organisation, the student makes a report which is evaluated after ending the internship.

**Examination:** Verbal individual exam with point of departure in the project report. Internal adjudicator. Graded in accordance with the Danish 7-point scale.

Option 2: Extended Thesis
Students may choose to implement third and fourth semesters as one long thesis project (60 ECTS). Long thesis is advised specifically for work with project issues where there is a need for an extraordinary collection of data. Thesis topics must be approved in advance by the Board of Studies for Planning and Geography, and the student must fulfill knowledge, skills and competencies as indicated the thesis work.
3.5 Environmental Studies, 4th semester

3.5.1 Master's Thesis (30 ECTS)

Title: Master's Thesis (Kandidatspeciale)

Admission: Successful conclusion of the first three semesters of the MSc in Environmental Studies.

Aim: Students who complete the module are expected to:

Knowledge:
- Has extant knowledge of relevant theories and methods in relation to the chosen problem area, can reflect on their opportunities and constraints, and apply them within the given area
- Has knowledge of the applied theories’ theoretical and methodological foundation(s) and can reflect on these
- Has thorough knowledge of the chosen problem area’s academic foundation including knowledge of the main national and international research in this area

Skills:
- Is independently able to plan and carry out a project on a high professional level
- Can explain possible methods to solve the project's problem formulation and to describe and evaluate the chosen method's suitability, including explaining selected boundaries and their impact on results
- Can explain the chosen problem area’s relevance, including ability to explain the crux of the problem and the academic and/or professional context it occurs in
- Can analyse and describe the chosen problem through the application of relevant theories and empirical studies
- Can analyse and evaluate the results of empirical studies, whether it is the student's own or others' studies, including an assessment of the given method’s impacts on the validity of results
- Can identify relevant strategies for problem improvements and/or solutions
- Can communicate knowledge about the problem for both peers and non-professionals

Competences
- Can provide a synthesis between the academic and/or professional work problem, theoretical and empirical studies, and undertake a critical evaluation of the formed synthesis and the project’s results
- Can independently and based on a conceptualised problem take part in interdisciplinary discussions and development work
- Can independently acquire the latest knowledge within the discipline, and on this background continually develop further professional skills and competences

Teaching: In this module, the Master’s Thesis is carried out. The module constitutes independent project work and concludes the programme. Within the approved topic, the Master’s Thesis must document that the level of the programme has been attained.

Examination: Verbal individual exam with point of departure in the project report. External adjudicator. Graded in accordance with the Danish 7-point scale.

Chapter 4: Entry into Force, Interim Provisions and Revision

The curriculum is approved by the Dean of the Faculty of Engineering & Science and enters into force as of September 2010.

Students who wish to complete their studies under the previous curriculum from 2007 must conclude their education by the summer examination period 2011 at the latest, since examinations under the previous curriculum are not offered after this time.

In accordance with the Framework Provisions and the Handbook on Quality Management for the Faculty of Engineering & Science at Aalborg University, the curriculum must be revised no later than five 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 in which it is written, weight is also put on the student's spelling and formulation ability, in addition to the academic content. Orthographic and grammatical correctness as well as stylistic proficiency are considered basis for the evaluation of language performance. Language performance must always be included as an independent dimension of the total evaluation. However, no examination may be assessed as ‘Pass’ on the basis of language performance alone; similarly, an examination cannot normally 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).

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.

All written work, including the Master’s Thesis must be completed in English. A summary of one to two pages (maximum) may be included and written in the student’s native language. The summary is not included in the evaluation of the project as a whole.

5.2 Rules for Examinations
The rules for examinations are stated in the Examination Policies and Procedures published by the Faculty of Engineering & Science on its website.

5.3 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.

According the Minesterial Order no. 815 of June 29, 2010 on Erasmus Mundus Programmes at Universities, the Programme can deviate from the rule regarding external examiner in at least one-third of the Programme, and the rule that stipulates that only one-third of the examinations must be grades as Pass/Fail.

5.4 Completion of the Master Programme
The Master’s programme must be completed no later than four years after it was begun.

5.5 Additional Information
It is assumed that the student is able to read academic texts in modern English and use reference works, etc.

The current version of the curriculum is published on the Board of Studies’ website, including more detailed information about the programme and exams.
Annex 1: Mobility Overview

NOTE: This is an example of the mobility options within JEMES. This is used as an example but the number of mobility options is equal to this at AAU, UA and UAB.

Technology Engineering Stream

1st Semester
- Technische Universität Hamburg-Harburg (TUHH)
- Universidade de Aveiro (UA)

2nd Semester
- Technische Universität Hamburg-Harburg (TUHH)
- Universidade de Aveiro (UA)

Management Stream

1st Semester
- Universität Autónoma de Barcelona (UAB)
- Aalborg University (AAU)

2nd Semester
- Universität Autónoma de Barcelona (UAB)
- Aalborg University (AAU)

3rd Semester
- Universität Autónoma de Barcelona (UAB)
- Aalborg University (AAU)

4th Semester
- Universität Autónoma de Barcelona (UAB)
- Aalborg University (AAU)

The 4 universities form two themed pathways (“streams”) through the programme. Each student has 4 starting options (each of the 4 universities). However, in semester 2 the student must transfer to the other stream and choose between the 2 universities in this stream. At the end of the second semester the student has to decide whether to go back to the original stream or to continue in the new stream. In semester 3 the student can choose between the two universities in the preferred stream. In semester 4 the student can stay at the same university or study the last semester at the other university in the same stream. The consortium’s experience is that students tend to return to their starting university in the 3rd semester and/or do the 3rd and 4th semester at the same institution. Nonetheless the model is designed in a way that the student can always visit the university with the most appropriate offer in his individual case. The model furthermore ensures that each student studies at least 2 semesters (60ECTS) at the same university and spends at least 1 semester abroad equalling 30 ECTS.
Annex 2: Overview of Semesters at Partner Universities

### Autonomous University of Barcelona, UAB

<table>
<thead>
<tr>
<th>Semester</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Foundations of ecologicals economics</td>
<td>10</td>
</tr>
<tr>
<td>1st</td>
<td>Socioenvironmental research methods</td>
<td>10</td>
</tr>
<tr>
<td>1st</td>
<td>Transversal concepts and techniques I</td>
<td>10</td>
</tr>
<tr>
<td>2nd</td>
<td>Climate change</td>
<td>10</td>
</tr>
<tr>
<td>2nd</td>
<td>Global change</td>
<td>10</td>
</tr>
<tr>
<td>2nd</td>
<td>Transversal concepts and techniques II</td>
<td>10</td>
</tr>
<tr>
<td>3rd</td>
<td>Industrial Ecology I</td>
<td>10</td>
</tr>
<tr>
<td>3rd</td>
<td>Industrial Ecology II</td>
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<tr>
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<td>Master’s Thesis</td>
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### University of Aveiro, UA

<table>
<thead>
<tr>
<th>Semester</th>
<th>Module</th>
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<tbody>
<tr>
<td>1st</td>
<td>Air Quality Management</td>
<td>6</td>
</tr>
<tr>
<td>1st</td>
<td>Measurement of Air Pollutants</td>
<td>6</td>
</tr>
<tr>
<td>1st</td>
<td>Introduction to Air Pollution</td>
<td>8</td>
</tr>
<tr>
<td>1st</td>
<td>Natural, Technological and Industrial Risk</td>
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</tr>
<tr>
<td>1st</td>
<td>Option I – choice of:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Human Geography</td>
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<tr>
<td></td>
<td>- Fundamental Theory of Risk</td>
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</tr>
<tr>
<td></td>
<td>- Geography of Portugal</td>
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<tr>
<td>2nd</td>
<td>Water Pollution</td>
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<tr>
<td>2nd</td>
<td>Environmental Planning and Sustainability</td>
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<tr>
<td>2nd</td>
<td>Air Pollution and Climate Change</td>
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</tr>
<tr>
<td>2nd</td>
<td>Solid Waste Management</td>
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<tr>
<td>2nd</td>
<td>Option II</td>
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<tr>
<td></td>
<td>- Planning and Integrated Management of Coastal Zone</td>
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<tr>
<td></td>
<td>- Research Methodology</td>
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<tr>
<td></td>
<td>- Environment, Society and Development</td>
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</tr>
<tr>
<td>3rd</td>
<td>Project</td>
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<tr>
<td></td>
<td>› Minor: Treatment and quality of water and effluents*</td>
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<tr>
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<td>› Physical Chemical Treatment of Water and Effluents</td>
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<tr>
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<td>› Biological Wastewater Treatment</td>
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<tr>
<td></td>
<td>› Minor: Atmospheric Pollution*</td>
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<td>› Air Quality Management</td>
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<tr>
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<td>› Measurement of Air Pollutants</td>
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<tr>
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<td>Option III</td>
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<td>› Human Geography</td>
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<tr>
<td></td>
<td>› Fundamental Theory of Risk</td>
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<tr>
<td></td>
<td>› Geography of Portugal</td>
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<tr>
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<td>Dissertation</td>
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<td><strong>Total</strong></td>
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</table>
## Technical University of Hamburg-Harburg, TUHH

<table>
<thead>
<tr>
<th>Semester</th>
<th>Module</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Block A - Fundamentals</td>
<td>8</td>
</tr>
</tbody>
</table>
| 1<sup>st</sup> | Block B - Treatment Processes and Control  
Choose two of the three modules (a-c) with an extent of 10 ECTS each | 20 |
| 1<sup>st</sup> | Soft Skills - Choose either from Block I or Block II courses with an extent of 2 ECTS in total:  
- Block I Business and Management  
- Block II Complementary Courses | 2 |
| 2<sup>nd</sup> | Block C - Choose three of the four modules (a-d) with an extent of 9 ECTS each | 27 |
| 2<sup>nd</sup> | Soft Skills  
Choose either from Block I or Block II courses with an extent of 3 ECTS in total:  
- Block I Business and Management  
- Block II Complementary Courses | 3 |
| 3<sup>rd</sup> | Project work | 15 |
| 3<sup>rd</sup> | Block D - Choose one of the two modules (a/b) with an extent of 12 ECTS | 12 |
| 3<sup>rd</sup> | Soft Skills - Choose either from Block I or Block II courses with an extent of 3 ECTS in total:  
- Block I Business and Management  
- Block II Complementary Courses | 3 |
| 4<sup>th</sup> | Master’s Thesis | 30 |

**Total** | 120 |