

# The M.Sc. Programmes in Environmental Management

## 4th semester Guidelines

Theme: Master's thesis

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## Preface

Welcome to the Guidelines for the last semester of the programmes in Environmental Management .

During the last semester, you must prepare a thesis based upon which you will finally be assessed for the Master's degree. For the thesis, you have a long time however it also often shows in the end of the allotted time, that time is in fact scarce, so the sooner you get started and the better you manage to design your research, the better you will manage to submit the final thesis in due time.

The thesis is not fundamentally different from the projects you have been working on during previous semesters, but of course the requirements are higher. In the thesis you will be given the opportunity to apply all the theories and methodologies you have amassed during your studies – and apply it to a problem within a field of your own choice.

Poul Alberg Østergaard  
Coordinator, 4<sup>th</sup> semester  
Environmental Management and Sustainable Energy planning and Management

# 1 Regulations and provisions regarding the 4<sup>th</sup> semester

The 4th semester is reserved for preparation of the Master's thesis. The thesis is normally prepared on an individual basis, but two or more students may also prepare a joint thesis.

A Master's Thesis may focus on environmental management in relation to a specific sector or branch, a specific organisation or broader to a specific geographic area. A master's thesis should discuss the issues both on a general, theoretically informed level, and on a more empirical and practical level, incorporating e.g. a feasibility study, a plan for implementation or an evaluation of a specific project.

The master's thesis may take its point of departure in issues and topics related to the 9<sup>th</sup> semester project, but it is not obligatory. It is, however, recommended that the students choose the same fields of investigation as he/she has already ventured into. If the student hitherto has handled e.g. issues related to energy planning it is recommended to continue with energy planning, and if the students has handled issues related to cleaner technology it is recommendable to focus on issues related to industry in the master's thesis as well.

After the project period, the students must be able to:

- explain the importance of the chosen problem in relation to the study programme, such as to clarify the exact core of the problem and the technical and societal arena, in which it operates.
- describe and explain the possible theories and methods for solving the problem formulation of the project and to describe and evaluate the applicability of the chosen theories and methods, such as to explain the chosen theoretical and methodological delimitations and their significance for the results of the project.
- analyse and describe the chosen problem through the use of relevant theories and empirical investigations.
- describe the chosen theories, in order to draw attention to the specific characteristics of the theories and hence to substantiate an understanding of the chosen theories' possibilities or limitations within the research problem in question.
- analyse and evaluate the results of empirical investigations carried out either by the students themselves or others and evaluate the significance of the investigation methods for the validity of the result.
- form a synthesis between the technical and societal problem area, and the theoretical and empirical investigations, and to perform a critical evaluation of the formed synthesis and the result of the project work altogether.

Furthermore, a master's thesis should document the student's ability to structure a field, and work in a systematic and independent manner; to apply theoretical insights related to environmental management or technological transformation to a specific object of analysis. The student should altogether analyse issues related to environmental management in an informed and independent manner. A master's thesis is expected to include a critical assessment of the theories and methods applied and may include a further development of

theories and methods. It is also recommended that data is collected in the field.

It is the level of sophistication in handling theories and methodological knowledge and the degree of independence of the analyses presented that distinguish the Master Thesis from prior projects.

### Approval of topic

There are no project proposals given from the university, as the students are to demonstrate the ability to find appropriate subjects themselves.

However, you are naturally welcome to discuss potential subjects for thesis with any supervisor you wish or the [coordinator](#). The coordinator can also help you establish contact to a supervisor based on your tentative ideas.

Before starting on a thesis the Study Board must approve your topic. This entails that you write a brief - third of a page - description encompassing the following three elements:

- 1: Introduction; brief introduction to the issue leading up to the research question
- 2: Methodology; your approach to answering your research question
- 3: Anticipated outcome; what is the expected outcome of the project.

The description must be entered into the form found at

<http://www.lsn.aau.dk/intranet/planogmiljo/em10/thesisdescriptionfinal.doc>

This form must be submitted to the [Study Secretary](#) in signed form i.e. either on paper (or as scanned and attached document if you are abroad) no later than January 10<sup>th</sup> 2008.

Before signing and submitting the form finally, you are welcome to e-mail it to the [coordinator](#) or to a proposed supervisor for a preliminary approval.

### Time schedule of the semester

The semester starts Friday February 1, 2008 and ends Monday June 30<sup>th</sup>, 2008. Theses have to be submitted Wednesday the 11<sup>th</sup> of June at 12 o'clock sharp for the Spring 2008 semester. Exams will take place in week 26 and possibly 25.

The semester starts with an informal seminar February 1<sup>st</sup> at 9 o'clock in a room to be determined later.

### Submission of the thesis

You must submit one hard-copy report to the [Study Secretary](#) for each supervisor and external examiner – thus normally two hard-copies.

In addition to submitting the report in hard-copy to the [Study Secretary](#), you are required to submit the report electronically.

A pdf-file containing the report (including all appendixes and front page) must be uploaded as

one single pdf-file to [projekter.aau.dk](http://projekter.aau.dk) which is the central university archive of reports. Immediately after uploading the file a receipt will appear on the screen and this must be printed and included with the submission of the paper-version of the report to the study secretary.

Theses uploaded to [projekter.aau.dk](http://projekter.aau.dk) are accessible for everybody. If needed, it is possible to designate a project as being confidential during the up-loading procedure.

It is the responsibility of the students to ensure that the electronic and paper versions of the report are identical

Notice: In order for a project to be considered submitted on time, both the paper version and the electronic version must be submitted before deadline.

You must also mail the same pdf-file to the [Study Secretary](#)

Please name the file in accordance with this template:

"2008 EM10 Robert Mensah Filson.pdf"

or for the rare cases where projects are confidential

"2008 EM10 Martin Kæseler & Jakobi Pedersen CONFIDENTIAL.pdf"

## Examination

The examination takes the form of an oral defence based of the submitted thesis. In addition to the supervisor one external examiner will take part in the examination. The examination is individual.

The grading, on the Danish 7-point grading-scale, will be based on the written thesis as well as the oral presentation and examination.

## 2 Guidelines regarding project contents and quality

### Size of the report

A thesis written by an individual student should not exceed 75 - 100 pages, including possible appendices etc. A thesis from a group of two students should not exceed 100 - 150 pages. These guidelines are only consultative. Style, focus, number of figures and diagrams etc. may influence on the volume of the thesis. However, a concise, well structured and well edited thesis will be appreciated.

### Contents

Focus of the master's thesis is most often on a specific case of environmental management or energy planning in an organisation, a company, in a sector, in a local community or in a region. The project can either focus on a foreign or Danish organisation/ sector/community or it may take the form of a comparative study (analysing e.g. transfer of Danish cleaner technology to India or comparing waste treatment in China and Great Britain). It is, however, also possible to focus on macro-level developments or to develop and discuss theories and concepts.

The thesis should include an analysis of technological as well as social issues and it is the ability to combine technological knowledge with economic, organisational, sociological and/or cultural knowledge that characterises the good thesis.

The thesis will typically consist of a number of interrelated chapters of the following contents:

1. *Introduction including scope of the thesis*
  - Outline of background for and context of the analysis
  - Formulation of research question
  - Outline of general analytical framework applied to answer the research question
  - Delimitation of the project (relevant issues not addressed in the report and cause for non-inclusion)
2. *Theories and methods*
  - Discussion and choice of theories to be applied and concepts to be used in the analyses. In-debt presentation of the theories and concepts
  - Discussion and presentation of data collection methods (if relevant)
3. *Analyses*
  - This part of the thesis should be divided into an appropriate number of chapters, depending on the questions asked.
  - The analysis will consist of an empirical analysis of the chosen field of study related to the questions asked, based on and using the chosen concepts and theories. Each chapter/part should end up with a small part conclusion.
4. *Conclusion*
  - The conclusion is a summary of the part-conclusions, which is a result of the analyses. The conclusion should always present answers to the questions asked as well as a discussion of the validity of the results of the analyses

## Important guidelines concerning plagiarism and proper referencing

The use of the internet makes it is very easy to find sources and good texts describing issues relevant to your projects. Unfortunately, the internet also facilitates the misuse of such sources as everything can be copied directly into your own documents. This, however, is illegal plagiarism; it is seriously condemned and must at all costs be avoided.

Naturally, the same applies to sources in print.

Generally, you should not use another author's phrases unless there is a specific reason for doing so. In this case, the phrases *must* be clearly marked in the report using italics and/or quotation marks combined with a reference to the author. Failure to do so is plagiarism. Even if you did not intend to cheat.

We have adapted an Oxford University rule of thumb saying that "if six or more consecutive words are the same as the source", then it must be marked as a quotation as described above and clearly referenced. Additionally – and again inspired by Oxford University - "fewer than 6 words should also be quoted when you borrow a particularly apt or striking phrase"

Paraphrasing of other authors' work must also be properly referenced. Failure to do so is plagiarism. Even if you did not intend to cheat.

It is not even acceptable to present another author's *idea* without referring to the author. Failure to do so is plagiarism. In fact, making such references merely demonstrates that you are a well read student who knows the area of study.

Diagrams, figures, tables, photos and other graphical representations not made by yourself must also be properly referenced. Failure to do so is plagiarism

**Plagiarism is utterly unacceptable and will lead to the rejection of the report and expulsion of the student from Aalborg University if discovered in a submitted report.**

The extensive use of properly referenced quotes from single sources - ~third of a page and up - on the grounds that "*they write it better than we are able to*" is *not* plagiarism and hence not illegal. However, it is poor judgement, considered poor student work and hence generally renders a poor impression.

The extensive use of properly referenced quotes from single sources may of course be relevant under special circumstances, such as if you wish to discuss an EU directive, in which case, devoting e.g. a full page to the actual text may be appropriate.

If in doubt, please consult your supervisor.

Several reference systems exist. Use one system consequently throughout the whole report and throughout the entire process *including drafts*. Sloppy reference methodology in the preparation of drafts will cause problems in the writing of your final report. You will most likely forget that parts of your text are in fact quotations – and these parts will be considered plagiarism in your submitted report. Below is a link to a description of the Chicago style (successor of Harvard) which we recommend you to use.

<http://www.lib.murdoch.edu.au/find/citation/chicago.html>

If concepts and use of theories differ from the way these concepts and theories are used in the sources cited, the thesis must clarify how, and the good thesis would also indicate why.

### 3 Evaluation of the thesis

An EM master's thesis should include all the aforementioned elements (1 - 4) to be completed. It is the depth of topic coverage and the validity and logical development of arguments and conclusions that differentiates the good from the less good thesis. Apart from that scope, originality and difficulty of topic will influence on the assessment of the thesis.

It will often be relevant for the supervisor/examiner to assess each of the elements (1 - 4) separately. A thesis may have strong as well as weak points. A well-balanced assessment will thus be obtained through an assessment of each of the elements separately. E.g. are the questions asked relevant and clear? Are the theories and methods used relevant, given the field of the study and the questions asked? Are the analyses carried out in a systematic manner?

A good thesis will demonstrate the student's ability to contextualise the technology in focus and connect the technological and social requirements. It will thus be relevant to analyse the environmental transformed as well as the context of this technology (that is the economic and/or organisational, institutional, political and cultural context). The analysis may have the form either of an assessment (evaluation of results) or sketch a plan/strategy for the desired change.

A good thesis is coherent. Coherence or an "inner logic" between the elements 1 - 4 decides whether or not the argument and conclusions presented will be professionally convincing. It is of great importance that the questions asked are answered and that the answers are based on theoretically and methodologically sound arguments.

A good thesis will by use of notes and references make it clear how sources are used and what type of data the analyses rest upon. Effort in data collection, literature search and in the utilisation of this information will influence on the assessment of the thesis.

Language skills will be evaluated. Correctness, proficiency is to be evaluated. It is evident that it will be more difficult to present a clear argument if the language in which the thesis is written is not mastered sufficiently.

## 4 The oral defence

According to the Examination Rules<sup>1</sup>, there are normally 40 to 60 minutes per group for presenting the thesis corresponding to approximately 10 minutes per person. Discuss an appropriate level with your supervisor for single-person groups.

The presentation will be followed by an oral examination, which including the voting should last 50 to 60 minutes per person according to the Examination Rules. The oral examination will take its point of departure in the submitted thesis and the oral presentation.

The contents of the oral presentation may vary. Besides presenting the central argument of the thesis, the student may choose to clarify and further develop some of the central issues in the thesis. This can be parts of the empirical investigation and/or the theoretical and methodological considerations. The student will thus get a chance to elaborate on the weak points of the thesis.

Groups will be examined individually after the common presentation and a common feedback to the report and the presentation.

The oral defence will be assessed according to clarity, style, and logic in defence and command of the subject.

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<sup>1</sup> [http://adm.aau.dk/fak-tekn/regler/eo\\_per\\_2007\\_08\\_31.pdf](http://adm.aau.dk/fak-tekn/regler/eo_per_2007_08_31.pdf) page 12

## 5 After graduating

After graduating from Aalborg University you will normally receive your diploma within a week or so.

There is usually no graduation event planned by the Study Board. Usually it is a matter for [PEAS](#) - possibly together with the Land Surveyors student organisation [FoFoDaLa](#). The university will of course assist you in finding an appropriate room and it may also be possible to get some support from the university

If the semester plans a graduation event, the diploma will be / can be received at this event.

We recommended that you join the Aalborg University Alumni-network at [alumni.aau.dk](http://alumni.aau.dk) Currently the website is in Danish only but the developers have been suggested translating the website.

Other possibilities are of course for the students of the semester to remain in contact through Internet communities such as [Linkedin](#) where much of the staff is also found