



Manual for the Literature Thesis in the MSc Ecology programme, VU University Amsterdam Academic year 2017-2018

Thesis coordinator:

Dr James Weedon

Room A-151

De Boelelaan 1085, 1081 HV Amsterdam

Phone: 020-5984325

E-mail: james.weedon@vu.nl

Course code: AM_1131

Credits: 12 ec (two months)

Abbreviations:

E&E Ecology and Evolution

DES Department of Ecological Sciences

UvA University of Amsterdam

IBED Institute for Biodiversity and Ecological Dynamics

TER Teaching and Examination Regulations

FALW Faculty of Earth and Life Sciences

Last updated: 25 September 2017

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1. INTRODUCTION

General information

The literature thesis is an important, compulsory part of the Master's programme in Ecology and Evolution and involves many different aspects, such as, theoretical preparation, literature survey, writing and oral presentation. This manual describes the process of completing the thesis from the beginning (the admission) through the actual execution with its supervision to the final stage (assessment and grading) in consecutive order. The various stages of the process will be supported by forms which are supplied in the Appendices.

This manual covers both internal and external literature theses of the 'Ecology and Evolution' programme. A thesis is described as 'internal' when it is carried out at a research department related to the Faculty of Earth and Life Sciences (FALW). 'External' is used to refer to those that take place in other faculties, universities, or research institutes.

Aims of the literature thesis

- The student learns to find scientific information on a chosen subject.
- The student learns to independently make a detailed study of the literature, which broadens and deepens the knowledge gained earlier in the programme.
- The student learns to efficiently process the material in a given field and to evaluate it critically at meta-level, thereby developing an own perspective on the literature.
- The student learns to formulate a research question and find an answer on the bases of a study of the published scientific literature.
- The student learns to write a scientific thesis in English at the level of peer-reviewed academic journals.
- The student is able to orally present the thesis and to discuss the findings.

Topic of the thesis

The literature thesis can focus on a fundamental ecological question but may also take a more applied ecological approach. The aim is that students try to find an answer to their thesis' research question(s) on the basis of information available in scientific journals. This is not the same as writing an overview of everything that has been said in a particular field (although this may form part of the thesis). It should clearly take a more meta level approach.

The topic and research question are free of choice. However, the topic should be sufficiently different from those addressed in the research projects. The subject should meet the quality requirements for research in the field of that specific specialization.

Credits, duration and timing

The course code for the literature thesis is AM_1131, and the study load amounts 12 EC (2 months). The literature thesis can be done at any moment during the masters' programme, but it is recommended to do it during the second year. You are generally more experienced with finding, reading and critically evaluating scientific literature by then.

2. PEOPLE INVOLVED

Student

It is the student's responsibility to initiate the procedure for writing a thesis, to find a supervisor and to choose a topic.

Thesis coordinator

The thesis coordinator ensures that the thesis is of the appropriate level and scope (i.e. neither too elementary nor too ambitious) and evaluates the quality of the supervision. The thesis coordinator may support students in their search for a supervisor. He/she approves the thesis proposal and in consultation with the student chooses the VU supervisor in the case of external theses. James Weedon is the thesis coordinator for Ecology and Evolution.

VU supervisor

The VU supervisor has a PhD, holds a position in higher education or research at VU University and is appointed as examiner by the Examination Board. The VU supervisor has the final responsibility for the supervision of the student during the entire thesis project. At the start of the project the VU supervisor discusses the research question, and the methodology with the student and external supervisor (if applicable). The VU supervisor supports the student during the process of writing the thesis. At the end, the VU supervisor comments on draft versions of the thesis (not more than two). The VU supervisor assesses the final version of the thesis, as well as the oral presentation and hands in the final assessment to the student secretariat through *Formdesk*. The day-to-day supervision of the student may be delegated to a Postdoc or PhD student.

The external supervisor

Theses carried out at institutions other than VU University need an external supervisor from the institute concerned. He or she is a member of staff from the institute concerned with relevant knowledge of the topic of the thesis, preferably holding a PhD and a position in higher education or research. The external supervisor discusses the proposal with the student and after agreement supports the student during the process of writing the thesis. The external supervisor advises the VU supervisor about the assessment of the thesis.

3. PROCEDURE

The literature thesis starts with writing a thesis proposal (see below). The proposal is written by the student in consultation with the intended supervisor. If the supervisor comes from an external institute the student has to find a VU supervisor who is also consulted. The thesis coordinator can help the student to find a VU supervisor. The thesis coordinator has to approve the proposal in advance. After approval the student, VU supervisor and the thesis coordinator fill out and sign the 'Thesis Proposal Form', (see Appendix I). This form (and this manual) can also be found at the webpage of the Department of Ecological Science > Internships at the Department. If applicable the form is also signed by the external supervisor. By the end of the project E&E students give a presentation in English at the Department of Ecological Science at the VU. There is no second assessor involved in the assessment of a literature thesis.

Thesis proposal

The project proposal includes the following topics (see **Appendix 1** for a recommended format):

- 1) The provisional title of the thesis.
- 2) An introductory but complete description of the ecological context/theme, the theoretical background and the scientific and societal (if applicable) relevance of your work. Discuss the relevant literature in this part.
- 3) One or more clearly formulated and structured research questions logically derived from the introduction. This is an important point: loosely formulated questions always produce bad science.
- 4) An outline of the basic design of the thesis. For example, an indication of the contents of the different chapters.
- 5) The search engine(s) and keywords/search items that are going to be used.
- 6) Name of the VU supervisor, and (if applicable) name, background and the address/e-mail of the external supervisor.
- 7) A time schedule.

After approval the thesis signed proposal is handed in to the thesis coordinator.

The process of writing

During the thesis project the student makes some regular appointments with the supervisor for discussing progress and feedback. A common frequency is once every two weeks possibly by e-mail. It is advisable for this consultation to hand in the chapters that are already more or less finished.

Writing a thesis is an individual and sometimes lonely activity. Make sure that you work up the discipline to keep things going.

Presentation

By the end of the project you have to give a presentation of your work in English of 20-25 minutes at the Department of Ecological Science. Consult your VU supervisor to make an appointment for this. It is highly recommended to discuss the structure and content with supervisor and rehearse the talk in front of an audience. An external supervisor may ask you to give the presentation at his or her home institute too. This doesn't alter the obligation to present your work at the Department of Ecological Science.

4. COMPLETION

Assessment procedure

The final assessment of the placement is undertaken by the VU-supervisor. The final result must be a thesis written in English. There are no more than two correction rounds of which the second one is meant only for minor final adjustments. The final version must be submitted to the VU-supervisor before the end of the agreed project period. The VU-supervisor can refuse to assess the report if it does not meet the requirements as are described (see Guidelines to the report on the next page). When the student is late (after the agreed date) with the submission of the final thesis, the VU-supervisor can decide to register a final mark based on a draft version.

The VU-supervisor grades the final thesis as soon as possible, but at the latest within fifteen working days. If the thesis was carried at an external institute the VU-supervisor consults the external supervisor for his or her opinion on the execution, presentation and thesis. The final assessment is discussed with the student by the VU supervisor. When the final thesis is considered as insufficient the student can hand in a new version within at most 10 days' time. If the thesis is still considered insufficient the student has to redo the thesis completely; *i.e.* do a new study with a different supervisor. The VU-

supervisor delivers the final assessment and an e-copy of the thesis to the study secretariat through *Formdesk*.

In the final assessment, the VU-supervisor assesses three different aspects of the writing process:

- the thesis
- the oral presentation
- the execution of the research

The aspects will be graded from 1-10. The thesis counts for 50% of the final grade; the oral presentation for 25% and the execution of the research also for 25%.

Only if marks for each item given by the VU-Supervisor are 6.0 or higher the thesis is regarded as sufficient. Assessment criteria are defined in Appendix 2.

Guidelines to the thesis

A typical thesis counts around 7.000 words (excluding reference list) and contains the following elements:

0. Title page
1. Table of contents
2. Abstract
3. Introduction
4. Outline
5. A variable number of chapters depending on the content and methodology
6. Discussion/synthesis/conclusion
7. Acknowledgements
8. References
9. Appendices (if applicable)

0. Title page

The title page contains:

- A clear and instructive title of the thesis
- Student name and number
- Name of placement organisation
- Names and addresses of the responsible supervisors
- Name of the programme and specialization
- The number of EC (credits)
- Date of publication
- Number of words (excluding reference list and tables)

1. Table of contents

The table presents the page numbers of all main sections and subsections of the report.

2. Abstract

The abstract contains at least the context, the research question, the methodology used, it summarizes the results and it ends with the answers on the research question and the conclusion. The typical length is between 300 and 400 words.

3. Introduction

The introduction describes the conceptual framework and the theoretical background of the subject, the current state of knowledge, the problem(s) involved, the information which is lacking but which is essential, the aim of the research, and clearly formulated and structured research question(s). The latter is an important point: loosely formulated questions always produce bad science! Bear in mind that the reader does not know as much about the subject as the writer does. A good introduction should give the impression of: "Of course this has to be investigated; indeed this subject ought to be studied!" The introduction is concluded with a short explanation of the experimental design and possibly an indication of results that can be expected under the hypothesis. The introduction provides the reader with all information that is required to understand the research question, the project, the presented data and discussion of the results.

4. Outline

In the Outline section you sketch the organization of the thesis. What are the different steps to be taken? What will be the content of the forthcoming chapters? Which search terms/key words have been used and which search engines?

5. In this part you collect, review and organise the literature in a way that it can provide an answer to your research question(s). You may summarize your findings in tables or figures, do calculations and if applicable apply a statistical meta-analysis. But the thesis may also have a more textual elaboration organized along a clear line of reasoning. The number of chapters is of course variable. By the end of this part you should have processed all the material.

6. Discussion/synthesis/conclusion

The purpose of this chapter is to put the thesis in a broader perspective within the existing scientific literature. The discussion always starts with a short repetition of the research questions and the answers your study has given. These answers are then evaluated in a more profound (and different) context. In a more general context you should address questions as: What has this study added to the general understanding of the problem? Does it initiate new approaches or theoretical implications? Does your thesis shed light on other, related kinds of questions? What kind of follow-up study is required? How can it be done? Are there recommendations for societal implementation? Finish off with a take-home message. What do you want the reader to remember from your work: a firm conclusion, the announcement of the next step to take, a recommendation, a management policy, a prediction, a theoretical implication, etc.

In conclusion the discussion should show whether you are capable of scientific thinking, seeing connections, putting everything in a broader perspective and looking critically at the work of others.

7. Acknowledgements

Here you can express your gratitude towards those that have contributed to or supported your work.

8. References

The minimal number of references in a literature thesis is 30 but depending on the topic and research question, it is likely that you will need to consult and cite 50 or more references. Only include those publications that you have thoroughly read yourself. All citations in the text are included in the reference list and vice versa. All references include the full title of the article, all authors and their initials, the year of publication, the full name of the journal, the journal volume (and issue) and the page numbers. For book chapters, apart from the author names and title of the chapter, you list the title of the book, the name of the editor, the year of publication, the publisher, the city in which it was published and the page numbers. You can choose your own formatting style, but be consistent throughout. Consult a well-known journal in your field of research. In the text you cite only the surname(s) of the author(s) and the year of publication. Use (in the text only) “*et al.*” if the article has more than two authors. Websites are no scientific publications. Be very careful and critical with respect to the use of information from the web. Put them in a special separate reference list.

9. Appendices

Usually theses have no appendices, but occasionally it may be useful to present the raw material, for example as used in a statistical analysis, in an appendix.

General remarks

Avoid long-winded elucidations, try to write clearly and concisely. Avoid long bodies of text, and structure your thesis using headings and paragraphs. Use a logical and consistent structure within paragraphs. Keep your text readable. The strict use of the passive voice is not common anymore in most contemporary scientific journals. Hence, it is not a crime to use the active voice, and words like ‘I’, “we”, etc are not forbidden. Always use the past tense when you describe or refer to things that have happened in the past. Only use the present tense for general statements and conclusions.

Oral Presentation

By the end of the thesis or the student gives a presentation about his or her findings to an academic audience. This presentation is an obligatory part of the thesis. This presentation will be held at VU University Amsterdam. The presentation is assessed by the VU-supervisor and he/she may be advised by other colleagues present (on-site supervisor, VU lecturers, PhD’s). If the student fails for the oral presentation he or she can request for one re-presentation. The VU-supervisor will decide on the date.

Plagiarism and fraud

A thesis should be written individually. Plagiarism is defined as the action of taking someone else’s work or idea and passing it off as one’s own, either intentionally or unintentionally, without an appropriate acknowledgement of the sources used or a clear indication of which part is one’s own work, and which part is the work of someone else. Plagiarism is an important issue in science nowadays and all theses will therefore be checked for plagiarism with ‘Turn-it-in’. If you cite someone literally, make sure that the citation is between quotation marks and provide the source accurately.

Fraud refers to any intentional false representation, deceit or concealment. If a student is found to have committed plagiarism or fraud, it will be reported to the examination board. The punishment for plagiarism or fraud is disqualification of the assessment of the project and the obligation to start a new thesis. The examination board may decide to take additional measures such as exclusion from further participation in examination.

Complaints and appeals

If problems occur in the course of a placement which makes external intervention advisable, the student and on-site supervisor are required to contact the placement coordinator of specialization or the master coordinator. If necessary, mediation is arranged.

Appendix 1 Format for Thesis Proposal MSc Ecology

<p>1. Student info</p>	<ul style="list-style-type: none"> • Name: • Student number: • Full address: • Phone: E-mail:
<p>2. Placement details</p>	<ul style="list-style-type: none"> • Name (title) VU supervisor: • Phone: E-mail: • Institute/Department: • Course code: • Number of credits: <i>(Interruptions for holidays, courses, etc., do not count as part of the placement)</i> • Starting date: End date: • Full time / part time % per week or hours per week.
<p>3. On-site supervisor (if applicable)</p>	<ul style="list-style-type: none"> • Name (title) on-site supervisor: • Phone: E-mail: • Position: • Institute/Organization: • Department: • Full address: • Phone: • Home page department:
<p>4. Additional agreements</p>	<ul style="list-style-type: none"> • Are there any additional agreements? (additional forms, interruptions, confidentiality, etc. If so, please, attach these documents)
<p>The thesis proposal</p>	
<p>5. Title of placement</p>	<ul style="list-style-type: none"> • The title should be informative and relevant for the research project proposed
<p>6. Scientific background of the research</p>	<ul style="list-style-type: none"> • Conceptual framework and theoretical background (relevant existing knowledge/literature; relevant theories/concepts) • Description of the problem, why do we need to study this? • The scientific and practical relevance of the question to be solved • The societal relevance (if applicable) <p style="text-align: center;">NB: By no means, the sizes of these cells are meant as an indication for the length of the text. In other words: be complete (see also manual)!</p>
<p>7. Research question/aim</p>	<ul style="list-style-type: none"> • Clear, well-structured and academic research questions/hypotheses • Sub questions (if applicable)

8. Research design and methods	<ul style="list-style-type: none"> An outline of the basic design of the thesis. For example, an indication of the contents of the different chapters, keywords, searching machines etc..
9. Expected results	<ul style="list-style-type: none"> What are the expected results according to your hypotheses?
11. Time schedule	<ul style="list-style-type: none"> Give a time plan
12 Placement facilities	<ul style="list-style-type: none"> Does the organization have a working place, a computer and other facilities (lab, field station, materials, etc) available?
Further information	<ul style="list-style-type: none"> Any other relevant information concerning the placement
<i>The undersigned agree to the conditions and agreements stated above and to the enclosed preliminary research proposal</i>	
Signature of student	
Signature of on-site supervisor (if applicable)	
Signature of VU supervisor	
Signature of coordinator	
Date	
<p>Please provide a VU-net overview of your results so far in the masters' programme in a separate pdf..</p>	

Appendix 2 Criteria for assessment of the literature thesis in MSc Ecology

Execution (1-10)

A (< 5.5)	B (5.5 – 6.9)	C (7.0 – 8.4)	D (8.5 – 10)
Time management and planning			
Student has difficulties to keep up with the planning. Does not signal if plans need to be adjusted and is not able to make new plans. Experiences problems because of this. Thesis handed in much too late.	Student keeps up with the planning and is flexible enough to make new plans when necessary. Not much extension of thesis time.	Student is a good planner and well able to combine and plan different tasks. Thesis handed in within the time agreed.	Student is well able to plan and perform work as scheduled and finds time to reflect on the work done. Thesis finished in time.
Independence			
The student must be firmly guided by the supervisor and barely works independently. Student cuts corners, does not feel responsible.	The student mostly works independently. Feels responsible for his/her own activities.	The student can work independently. Feels responsible for his/her own activities and is able to reflect on that. Takes action and initiative to achieve the best result.	The student works independently, and reflects on his/her own activities, work processes and skills in an excellent way. Takes action and initiative to overcome problems and to achieve the best results.
Creativity and initiative			
Student is indecisive and has difficulty to find its own way. Is reluctant to changes and does not take initiatives.	Student takes initiative but sometimes waits for the directions of the supervisor.	Student easily takes initiative to perform the research and is able to change plans when necessary. Decides what is needed to do in cooperation with the supervisor.	Student is autonomous and decisive and informs supervisor well. Takes initiatives and is looking for opportunities to learn and to develop.
Problem and context analysis			
Student does not overview the question he is working on and tends to wander off.. Needs to be put on the right track regularly by the supervisor.	Student understands the problem, but has occasional problems in separating main from side-issues. Needs moderate guidance.	Student has a good grasp of what he is working on. Is well able to set out the lines without much help or supervision. Immediately recognizes relevant literature.	Student has an excellent overview on the problem and the field .Does not need any help in designing the thesis. References are covering the whole field of interest.

Sufficient literature collected?			
Insufficient, or too extensive reliance on non-scientific sources (webpages, etc),	Sufficient, with around 40 scientific papers.	Good number of scientific papers (~60) many of them from high impact international journals.	Large number of scientific papers (80 or more) from high impact international journals.
English writing skills			
Too wordy, poor writing style, too many spelling errors and mistakes in sentence structure.	Readable writing style, not too many mistakes in spelling and sentence structure.	Proper style of writing, not too many mistakes in spelling and sentence structure.	Pleasant style of writing, easy to read, to the point and well-structured English, no spelling errors .

Thesis (1-10)

A (< 5.5)	B (5.5 – 6.9)	C (7.0 – 8.4)	D (8.5 – 10)
Abstract			
<p>Too wordy or too short and sometimes incomprehensible. The abstract is deficient in one or more of the following items: the context, the research question, the design, and/or the conclusion. The conclusions are unclear or not supported by the data.</p>	<p>The abstract comprises the context, the research question, the methodology used, it summarizes the results and it ends with the answers on the research question.</p>	<p>The abstract comprises the context, the research questions, the methodology used and it summarizes the results and it ends with a conclusion that answers the research questions. Attention for the general relevance of the study.</p>	<p>The research is summarized in an excellent way, and meets criteria of a thorough scientific article. Excellent short description of methods, results, discussion and the general relevance of the study.</p>
Setting out the framework (Introduction)			
<p>The relevance of the research problem, the ecological context and the theoretical background are barely mentioned and the student is not capable to clarify the scientific hypothesis. The structure of the introduction is not coherent.</p>	<p>Describes the context and enfold the corresponding scientific backgrounds to support the relevance of the research problem, but in a rather superficial manner. Student concludes with a well-defined research question.</p>	<p>The theoretical context and analysis of the problem is clearly presented. From this the research questions are logically developed and an approach is presented. Relevant literature is incorporated.</p>	<p>Thorough and creative analysis of the context and problem. Research questions and hypotheses are developed coherently and approach and expectations are presented concisely. References of high quality. Good placement within field of research. A great deal of depth as well as overview.</p>
Design (Outline)			
<p>Too limited or insufficient use of key words/search items. The described design barely fits the research question. The student demonstrates a crude understanding of the chosen approach.</p>	<p>Search terms/key words are presented and cover the field of research sufficiently. Approach during the literature search is explained. Searching engines are specified.</p>	<p>Search terms/key words are presented and are complete. Methods of the literature search are specified, explained and justified.</p>	<p>Search terms/key words are presented and are completely covering the field. Methods of the literature search are specified, explained and justified. The structure (chapters) of thesis is explained.</p>

Information processing and analysis			
The presentation and analysis of the literature is imprecise or incomplete. The analyses is questionably deficient. The section is not well organized.	The presentation of the literature is more or less complete and adequate, but cannot be used for scientific publication unless thoroughly checked and corroborated by supervisor. Analysis mainly remains at the review level and does not reach a meta-level yet.	Analysis is well presented and can be useful as a starting-point for a publication, but must be validated. Analysis clearly reaches the meta-level and has sufficient depth to provide a methodical answer to the research questions.	Student shows an independently wrought complete and thorough (possibly statistical) analysis of literature, with an excellent presentation thereof. Analysis provides clear and reliable answer to research questions. Can be used for publication almost immediately.
Discussion and synthesis			
The structure of the discussion is mediocre. The conclusion faintly answers the research question. No attention for the strengths of the study and often exaggerated attention for limitations of methods. No evidence of understanding.	The student answers the research questions, is able to draw a sound conclusion, but has a limited ability to discuss the findings in a broader context. Strengths and imitations (if relevant) of the study are mentioned and implications for the conclusions are clarified.	The student has a clear answers to the research questions, and deals with the conclusions in a critical manner. Is able to place the findings in a broader theoretical context. Student draws convincing conclusions and summarizes the work in a take home message.	The student demonstrates a deep understanding of the value of the study for the scientific field. Student presents a concise but accomplished evaluation of his/her findings in the light of the theoretical background and the state-of-the-art literature. The student suggests new hypotheses and research questions on the basis of his/her work.
References			
Insufficient use of scientific sources of information. No critical evaluation of internet sources. Too much reliance on limited sources like Google Scholar, for example.	Thesis based on a sufficient number of peer reviewed papers. Internet sources only used if no alternative information is found and are critically evaluated.	Good and critical selection of literature from peer reviewed journals. Possible internet sources critically evaluated.	Clear selection and focus on publications in high impact journals. Internet sources only used and if no scientific source is available.
Academic writing skills, editing and appearance			
Unstructured style of writing. No logical or consistent built up of paragraphs. Poor or too few headings. Sloppy appearance.	More or less structured and consistent style, explanation of concepts basically OK, but wordy. Occasional unnecessary repetitions. Legends in tables and figures basically OK.	Well-written text . Clear headings. Clear explanations of difficult concepts. Tables and figures good. Carefully edited text.	Excellent academic style of writing. Perfect structure and consistency. Carefully edited text. Can serve as an ideal example.

All other parts of the thesis, title page, table of contents, literature references, etc should meet the requirements set out in the Guide Lines of the Thesis on page 6.

Oral presentation (1-10)

A (< 5.5)	B (5.5 – 6.9)	C (7.0 – 8.4)	D (8.5 – 10)
Style			
Difficult to understand and follow because of rhythm (too slow or too fast) and/or sound of voice. English as well as lay out of slides is poor.	Presentation is in time. Rhythm and tone of voice are clear. Lay-out of slides is sufficient.	Presentation is in time. Rhythm and tone of voice are pleasant. Lay-out of slides is good and discussion is informative.	Excellent presentation, informative slides, lively presented and a pleasure for the audience.
Scientific content			
Structure is unclear and the presentation of question, results and conclusions is complete but fragmented.	Clear structure with question, methods, results and discussion nicely summarized and logical thread of arguments.	Content of presentation is well structured and content of slides is compact and logical. Conclusion is clear and convincing. Limitations of study are well presented.	Well-structured presentation with sound arguments, conclusion and discussion. Gives direction to future research.
Ability to hold a discussion based on the presentation			
Responds on questions but the answer remains unclear and not to the point.	Responds on questions and gives answers using arguments based on data and literature and is to the point.	Responds on questions and gives answers by arguments from own data and literature. The answer is to the point and shows a broad view on the subject.	Responds on questions in convincing way and explores the answers in broader a context and shows thorough understanding of the subject.