

Erasmus Mundus Master in Evolutionary Biology

Research Projects at the University of Groningen

Rules and Regulations

Guidelines for Conducting a Research Projects at the RUG

All students of the Erasmus Mundus Master's Programme Evolutionary Biology (MEME) are required to complete two different research projects of at least 30 ECTS each. These projects may be viewed as the core of the MEME programme. The projects should be conducted at different universities and at least one of these projects must be a "thesis project". For projects executed at the University of Groningen (RUG) the distinction between "thesis projects" and "other research projects" is not relevant, since *all* 30 ECTS research projects are subject to the same rules and regulations. In particular, each research project has to be completed with a written Master's thesis that is presented and defended in a public session.

A research project gives students the opportunity to participate in original research, thereby providing hands-on research experience under realistic conditions. Students conducting a research project at the RUG are supervised individually, often by a team of supervisors; they are fully embedded in a research group, where they participate in all group activities (like weekly seminars, literature clubs, social activities); and they must get full exposure to all aspects of a research endeavour (*i.e.*, specifying research questions; planning experiments; executing experiments; data analysis and interpretation; presentation of data; writing a research report or publication). The Master's thesis resulting from a research project is an important piece of work. It is a tangible proof that the student has gained sufficient research experience to tackle a substantial research problem and to report on the results in a manner that is in line with common scientific practice. In many cases, parts of the Master's thesis are later published in a scientific journal.

In order to ensure that a high scientific standard is maintained, the RUG imposes a number of strict guidelines that affect every step in the process, that is, choosing the host research group and supervisor, the topic, the research plan, its execution and its final evaluation. The student's mentor plays a key role as both contact person and liaison. No project can start without explicit approval by the mentor and the RUG Examination Committee. The mentor must also continuously monitor progress. This activity is particularly crucial to research projects being conducted outside of the Centre of Ecological and Evolutionary Studies (CEES).

To obtain a degree from the University of Groningen, at least one 30 ECTS research project performed at the RUG should be an "**internal project**". This means that the project is embedded within CEES or a closely associated institute at the University of Groningen (*e.g.*, Behavioural and Cognitive Neurosciences), the Royal Netherlands Institute of Sea Research, or the Netherlands Institute of Ecology. The primary supervision of an internal project is always in the hands of a professor from CEES. In exceptional cases, a degree awarded by the University of Groningen can also be based on an "**external project**" that is supervised from a distance by a CEES professor. An external project can be conducted at Harvard (associate partner of the MEME programme) or any research institution in the world, provided that the quality of the project and the supervision are approved by the mentor and the Examination Committee. An external project must be supervised by a professor at the research institution where it is conducted. In addition to this "local supervisor", the RUG Examination Committee will assign a "CEES supervisor", that is, a CEES professor who will guard the progress of the project and who is responsible for the final grading of the project, in coordination with the local supervisor.

The following procedural rules have to be followed for each research project conducted at the University of Groningen:

- The project cannot start without consent of the RUG Examination Committee. To this end, the student first has to find a supervisor (in case of an external project a local supervisor and a CEES supervisor) and arrive at an agreement about the topic of the research project. The choice of supervisor and topic has to be discussed with the student's mentor. Subsequently, the student fills in the **Research Project Application Form** (attached below) and – after having the form signed by the mentor – sends it to the local MEME Office. The MEME Office will ask the RUG Examination Committee for its consent and inform the student about this within two weeks.
- The ultimate responsibility for a research project is always in the hands of a professor, although the daily **supervision** of a project is likely to be in the hands of an associate/assistant professor, a post doc, or a more senior PhD student. In all cases the responsible professor must have regular contact with the “floor” or “field” supervisors in order to monitor progress. In order to ensure that this actually occurs, a number of checkpoints have been built into the procedure as explained below.
- The first 2-4 weeks of the research project should be spent on a "Theoretical pre-study" and result in a document (5-8 pages) that includes a description of the research question/problem to be addressed, a sketch of the relevant scientific background material and the methodological approach to be taken. Ideally, the pre-study will later form the introduction section (and part of the methods section) of the Master's thesis to be produced at the end of the project. The work plan should be presented to the local research group in a brief talk (about 15 minutes) with a subsequent discussion/feedback session. The pre-study should thereafter be discussed with the local supervisors (and, in case of an external project, with the CEES supervisor), who will give a mark and detailed feedback for this first part of the project. For this purpose, they make use of the form **Feedback on Theoretical Pre-Study** (attached below). In case of an external project, the theoretical pre-study and the feedback form should be sent to the CEES supervisor before the student actually starts with the practical parts of the project.
- A mid-term evaluation of the project will be made 3-4 months after the start. Both the chief and daily supervisors must be present, and the CEES supervisor must be informed in detail in case of an external project. The mid-term evaluation is centred on the practical work. It serves a double purpose. First, the supervisors give feedback on the student's performance (making use of the **Mid-Term Evaluation Form** attached below), allowing the student to improve on those aspects where this is still necessary. Second, it is a good opportunity to reflect on the project and to change the research plans if necessary. At the University of Groningen, the mid-term evaluation is considered a crucial ingredient of the research project. In fact, the project can be stopped by the RUG Examination Committee if the intermediate evaluation is not executed. The signed form should be sent to the MEME Office, which will forward it to the RUG Examination Committee. A copy of the form (not necessarily signed) should be sent to the student's mentor.
- The project must be completed with a **Master's thesis**, that is, a detailed research report that is written in line with common scientific standards (abstract, introduction, materials & methods, results, discussion, references). It may be written in the form of a standard

scientific article that can be submitted to scientific journal. The Master's thesis is evaluated and judged by the chief supervisor and – independently – by another professor who is not a member of the chief supervisor's research group. In case of an external project, the Master's thesis should be judged by the local chief supervisor and the CEES supervisor. Both evaluators should (independently!) fill in the **Master's Thesis Evaluation Form** (attached below). The signed forms should be sent to the MEME Office, and the student's mentor should also receive a copy. Moreover, the chief supervisor should discuss the outcome of this evaluation with the student.

- The research project is completed with a 45-min oral presentation, where the research questions, methodology, results and conclusions are presented and defended in a public session. In addition to the local research group and the supervisors, at least two professors unrelated to the project should be present. After the presentation and the subsequent discussion, the student will be given detailed feedback by a small committee consisting of the supervisors, two additional professors not related to the project, a PhD candidate and a Master's student. For this purpose, the **Thesis Defence Evaluation Form** (attached below) is being used. After this session, the supervisors decide on a mark for the thesis defence and a mark for the research project as a whole. In case of an external project, a second oral presentation must be given at the University of Groningen. It is possible to use telecommunication (*e.g.* Skype) for this purpose. In principle, it is possible to give the thesis defence presentation before the completion of the written Master's thesis. In case of an external project, the final mark needs to be approved by the CEES supervisor. The chief supervisor (or the CEES supervisor) will communicate the final result and the final evaluation of the project to the MEME Office and will also inform the student's mentor about this.

Additional information:

- Students are advised to have a close look at the evaluation criteria (see the forms below) *before* they start with a new phase of their research project. These criteria give a good idea of what is being expected by the student. If a criterion is not clear, students should consult their supervisor(s) on this. For example, the criterion "lab/field/data notebook" refers to the fact that researchers are legally obliged to keep detailed and well-organized day-to-day records of the methods used and the results obtained (*e.g.* http://en.wikipedia.org/wiki/Lab_notebook). The criterion "citations/reference list" refers to the fact that while there is a huge diversity of bibliographic citation styles (*e.g.* http://en.wikipedia.org/wiki/Wikipedia:Citing_sources) there are still clearly defined rules for citing the work of others in a consistent and transparent way, and for producing a consistent reference list. In fact, when applying for a job, selection committees routinely check the citations and the reference list in the Master's theses of their candidates, since they provide useful (and reliable) information about the scientific maturity of a candidate. Most other evaluation criteria also refer to important research skills.
- The four intermediate marks (theoretical pre-study and work plan; mid-term evaluation of the practical work; Master's thesis, and thesis presentation and defence) form the basis of the final mark for the project as a whole. However, the final mark is not necessarily a (weighted) average of the four sub-marks. The sub-marks are mainly

intended for giving students feedback on their performance and pointing out ways for improvement. If, for example, the first two sub-marks are rather low, but a student learns from this feedback and improves in a spectacular manner, the low marks may be completely neglected in the end. In general, the final mark for the project as a whole is most strongly affected by the quality of the Master's thesis.

- During the mid-term evaluation, a realistic planning of the rest of the research project should be possible. When more (or less) time than anticipated is required, this should be stated clearly in the evaluation report. Otherwise, extension requests (or requests to reduce the project time) will typically not be granted by the Examination Committee.

Grading system at the University of Groningen

Marking follows the standard Dutch system and ranges from 1 (lowest) to 10 (highest):

10.0	outstanding; a remarkable performance; seldom given
9.5	excellent+ (top 2%)
9.0	excellent (top 5%)
8.5	very good to excellent (top 10%)
8.0	very good (top 20%)
7.5	good to very good (top 33%)
7.0	good (top 50%)
6.0	satisfactory
below 6.0	unsatisfactory

With the exception of a 5.5 (which should never be given), “intermediate” fractional marks (like 8.5) are given as often as “full” marks (like 8.0). An “unsatisfactory” sub-mark (e.g. for the theoretical pre-study) serves as a warning sign. A mark below 6.0 for the complete research project means that deficiencies have to be remedied until a 6.0 or higher is achieved.

MEME Research Project – Application Form

<p>Student: Student name: Matriculation number: Matriculation year: Email address: Mentor: Mentor's Email address:</p>	
<p>Team of supervisors: Host laboratory: Chief supervisor: - Email address: - phone number: Daily supervisor: - Email address: CEES supervisor: - Email address:</p>	
<p>MSc research project: Project title: Credits (ECTS): Start date: End date: Date of intermediate evaluation:</p>	

Brief description of the research project (<200 words):

Mentor's signature:

Place and date:

Signature:

MEME Research Project – Feedback on Theoretical Pre-study

Evaluation criteria	excel- lent	very good	good	satis- factory	unsatis- factory	not app licable
Written report:						
outline of question/problem						
review of relevant literature						
proposed methods						
proposed data analysis						
feasibility of research plans						
organisation of report						
writing style						
(consistency of) layout						
Oral presentation:						
organisation of talk						
presentation skills						
design/organisation of slides						
ability to handle questions						
General:						
independence of student						
interaction with supervisors						
time spent on pre-study (too little?, too much?)						
Mark for this part of the work						

MEME Research Project – Mid-term Evaluation

Evaluation criteria (focus on practical work)	excel- lent	very good	good	satis- factory	unsatis- factory	not app licable
planning and organization						
technical skills and capacity						
quality of technical data						
lab/field/data notebook						
creativity						
initiative						
motivation						
independence						
interaction with supervisors						
safety, neatness						
collaboration with mates						
Mark for this part of the work						

Please indicate (if necessary) any major changes in the planning of the project or the time planning (<100 words):

Signatures:

Place and date:

Signature of chief supervisor:

Signature of student:

MEME Research Project – Evaluation of Master’s Thesis

Name of student:

Title of Master’s thesis:

Evaluation criteria	excel- lent	very good	good	satis- factory	unsatis- factory	not app licable
general organisation						
introduction						
methods						
results						
conclusions/discussion						
command of literature						
citations/reference list						
writing style						
terminology						
typography (mistakes?)						
(consistency of) layout						
use of graphics/tables						
figure/table legends						
Mark for the Master’s thesis						

Signature of thesis evaluator:

Place and date:

Name of evaluator:

Signature:

MEME Research Project – Evaluation of Thesis Defence

Name of student:

Title of Master's thesis:

Evaluation criteria	excel- lent	very good	good	satis- factory	unsatis- factory	not app licable
organization of talk						
clarity of research question						
clarity of methods and results						
conclusions/discussion						
flow of talk						
speaking style						
design/organization of slides						
use of time (too short/long?)						
interaction with audience						
ability to handle questions						
Mark for this part of the work						

Final mark for the entire project	
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Signatures:

Place and date:

Local chief supervisor:

Daily supervisor:

CEES supervisor (if applicable):
