



Mobility European Master Programme in Evolutionary Biology

Study Guide

Contents

- 1 INTRODUCTION1
- 3 SUMMARY OF THE MEME PROGRAMME4
- 4 DEGREE REQUIREMENTS5
 - 4.2 Local degree requirements6
 - 4.2.1 Groningen6
 - 4.2.2 Munich6
 - 4.2.3 Montpellier6
 - 4.2.4 Uppsala6
 - 4.2.5 Harvard and Lausanne6
- 5 STRUCTURE AND CONTENT OF THE PROGRAMME7
 - 5.3 Other Courses11
 - 5.3.1 Groningen11
 - 5.3.2 Montpellier11
 - 5.3.3 Munich11
 - 5.3.4 Uppsala12
 - 5.4 Electives12
 - 5.5 Research projects13
 - 5.5.1 Groningen13
 - 5.5.2 Montpellier14
 - 5.5.3 Munich14
 - 5.5.4 Uppsala15
 - 5.5.5 Harvard15
 - 5.5.6 Lausanne16
 - 5.5.7 External projects16
- 6 FINDING YOUR WAY IN AN INTERNATIONAL PROGRAMME19
 - 6.1 ECTS mechanism and comparison of grades20
 - 6.2 Obtaining a double degree20
 - 6.3 Educational organisation21
 - 6.3.1 MEME Board and educational committees21
 - 6.3.2 Local organisation21
 - 6.3.3 International Offices22
 - 6.4 Mentoring22
- 7 LOGISTIC ISSUES23

1 INTRODUCTION

Evolutionary biology seeks to understand the functioning of the living world (from bacteria to humans) by viewing organisms and their interactions as the result of historical processes driven by natural and sexual selection, the interplay of genetics, epigenetics and development, the interactions of organisms with their biotic and abiotic environment, biogeography, and macro-evolutionary processes like speciation. Modern evolutionary biology is not primarily focused on understanding the history of life and the course of evolution in the past, but mainly addresses evolution as it is happening now. Only few scientific theories have been as influential as Darwin's theory of evolution. As it became obvious that many biological processes are better understood in their evolutionary context, evolutionary thinking became an integral part of disciplines such as ecology, developmental biology, biogeography, phylogenetics and, more recently, epidemiology, immunology, genomics, bioinformatics, and systems biology. In addition, evolutionary thinking is gaining a strong foothold in non-biological disciplines such as economics, informatics, robotics, medicine, sociology, anthropology, linguistics, psychology and even philosophy. For example, evolutionary principles help understand why we get ill and how to protect against diseases ("Darwinian Medicine"), the human mind ("Evolutionary Psychology"), and the functioning of organisations and markets ("Evolutionary Economics").

The Mobility European Master Programme in Evolutionary Biology ([MEME](#)) is a two-year research oriented master programme for talented and motivated students who are interested in understanding evolution in all its facets. This multidisciplinary programme addresses the driving forces of evolution at all levels of organismal organisation (from cells and individuals to populations and ecosystems), and it allows students to study all kinds of organisms in a diversity of habitats. The focus is on how understanding the principles underlying evolution can provide new insights and help humankind to cope with present-day challenges in a variety of fields, including ecology, epidemiology, physiology, immunology, genetics/genomics, bioinformatics, economics and the social sciences.

To realize this ambitious goal, four European universities ([University of Groningen](#), The Netherlands; [Ludwig-Maximilians-University of Munich](#), Germany; [Uppsala University](#), Sweden; [University of Montpellier](#), France) have joined forces with [Harvard University](#) (USA) and [University of Lausanne](#) (Switzerland) as associate partners. At present, no university in the world can offer the complete range of sub-disciplines of the highly multidisciplinary research area of modern evolutionary biology. For a student studying at one university it is very difficult to get an overview of the field as a whole and to find a niche that perfectly fits the student's talents and interests. Even the MEME programme, offered by four universities with complementary research expertise and tradition, together with the associated partners, cannot cover the full breadth of evolutionary biology, but it is a significant step in this direction.

MEME offers students the opportunity to build an individual study programme in evolutionary biology by combining elements from the complementary programmes that are already established at the participating universities. Students spend at least one semester at two different partner universities, and can be awarded double degrees for this. In the first year, the emphasis is on scientific, methodological and academic skills courses (taught in English), while the second year mainly consists of individually supervised research training. MEME students have a personal mentor, they are offered challenging multidisciplinary courses at the frontline of scientific research, they closely interact with leading researchers

and can make use of modern, state-of-the-art techniques and facilities, and they are embedded in a high-quality international network. Accordingly, MEME will provide its students with an optimal preparation for a subsequent PhD study or for other career options in the variety of fields where evolutionary thinking is an asset.

The Board of MEME welcomes you to this challenging Master's programme. We hope to fulfil your expectations by providing hands-on experience with cutting edge research in one of the most interesting and important subjects in scientific research.



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2 MISSION AND OBJECTIVES OF THE PROGRAMME

The mission of MEME is to offer an advanced state-of-the-art training programme in evolutionary biology of all its facets, thus providing the students with the necessary knowledge and skills to be competitive on the scientific job market and to be open-minded and internationally experienced ambassadors of intercultural scientific exchange.

Objectives for students:

- to become familiar with the concepts and research methods of modern evolutionary biology;
- to become familiar with the diversity of ways “evolutionary thinking” can be applied in the various sub-disciplines of biology and in other disciplines;
- to gain research experience, including the identification of promising research questions, the formulation of research hypotheses, the design of experiments, the acquisition and analysis of data, and the presentation and publication of results;
- to be optimally prepared for joining a PhD programme;
- to become a critically thinking and independent scientist;
- to become familiar with the norms, standards and ethics of scientific research;
- to become part of an international scientific network;
- to acquire skills in communication, writing and analytical thinking to be prepared for a job inside or outside of academia;
- to know their own strengths and be ready to make informed career decisions;
- to learn about and experience different cultures;
- to learn and use at least two languages.

Objectives for the institutes:

- to enhance the collaboration among partner universities;
- to become a recognized centre of excellence for evolutionary research in Europe;
- to enhance mobility of staff and students;
- to offer an excellent teaching programme;
- to inspire the best students to choose a career in the field of evolution;
- to attract the best students to come to Europe;
- to provide an optimal training for the institutes’ future PhD students.

Contribution to the European objectives:

- to provide conditions for intercultural understanding;
- to enhance the career perspective for students from Europe and Third Countries;
- to create a centre of excellence and a dense research network in Europe.

3 SUMMARY OF THE MEME PROGRAMME

The MEME programme is a double degree programme. MEME students have to obtain a MSc degree from two of the four partner universities of the consortium. This means that they spend at least one semester (in most cases two semesters) at two different partner universities. After successfully completing the programme, students will receive MSc diplomas from two partner universities.

The programme begins with the annual MEME summer school (see Section 5.6.1), during which the first-year students meet fellow students of their own cohort and many students from previous cohorts. During these summer schools the whole “MEME family” (students and professors) meet in an informal atmosphere. A scientific programme is combined with information sessions, evaluation meetings, an excursion, the annual graduation ceremony, and a graduation party.

After the summer school, the students start their first semester with a course programme in Groningen or Uppsala. During this semester, they follow a package of advanced “core courses” (see Section 5.1) that provide an overview of the fundamental principles underlying modern evolutionary biology. After the first semester, most students participate in a winter school (see Section 5.6.2), which is sometimes partly organized by the first-year students themselves.

For their second semester, students move to either Montpellier or Munich, where they continue doing coursework (see Section 5.2), but also carry out a small, independent research project. At the end of this semester, most students attend the annual MEME summer school for a second time. The third and fourth semesters focus on research projects (see Section 5.5). For these projects, students typically go to the two partner universities from which they want to obtain a degree. A combined number of twelve students of each MEME cohort get the opportunity to conduct a research project at Harvard University (with a maximum of eight) and Lausanne (with a maximum of four), which are associate partners of the MEME consortium (see Section 5.5.5).

After having completed two years of study, students are awarded a MEME graduation certificate during their last summer school. During their two years of intensive academic activity, students have the support of a personal mentor (see Section 6.4) who assists them in putting together a study plan that fits optimally to the students’ interests, needs and career aspirations. The mentor also ensures that students satisfy some minimal degree requirements.

4 DEGREE REQUIREMENTS

MEME students have to satisfy two types of requirements: (1) overarching requirements (specified in section 4.1 below), designed according to EU rules; and (2) the local requirements imposed by the two universities from which they want to receive the degree.

4.1 General programme requirements

The MEME programme consists of four semesters, corresponding to a total of 120 ECs according to the European Credit Transfer and Accumulation System ([ECTS](#), see Section 6.1). One EC corresponds roughly to 28 hours of study, and 60 EC correspond to the study load of one academic year (42 weeks of study).

MEME offers students the opportunity to switch each semester to the university of their choice and, thus, to follow a trajectory that best suits their interests. However, each individual trajectory has to satisfy some minimal requirements; MEME students need to:

- participate in at least two MEME summer schools;
- follow in their first semester a 30 EC programme of “MEME core courses” (either in Groningen or in Uppsala);
- spend at least 15 EC on additional course work at one or more universities that are different from the university where the first semester was spent;
- spend at least 60 EC on research work (lab based, field based, or theoretical); at least 30 EC of this research work should be dedicated to a “master thesis project” at one of the partner universities during the 3rd semester.

These minimal requirements add up to $30 + 15 + 60 = 105$ EC. The remaining 15 EC of “electives” can be devoted to more coursework, more research, or to a variety of other science-related activities that contribute to the “scientific maturation” of the student and/or enhance the student’s perspectives on the labour market (see Section 5.4). In principle, it is possible to spend more than 15 EC on electives, since it is possible to obtain more than 120 EC in the two years.

Please note, in Montpellier the 15 EC course work is followed by a 15 EC research project, by default.

There are two important requirements on student mobility:

- no more than 90 EC can be awarded from the same university;
- to acquire a double degree, students need to satisfy the local degree requirements of at least two of the four European partner universities.

Students are enrolled in the following degree programs according to the options they choose:

- University of Groningen: Evolution & Ecology: Evolutionary Biology (Master)
- University of Montpellier: Biodiversité, Ecologie et Evolution (Master)
- LMU Munich: Evolution, Ecology and Systematics (Master)
- Uppsala University: Evolutionary Biology – MEME (Master)

4.2 Local degree requirements

4.2.1 Groningen

To obtain a degree from the University of Groningen (UG) students must have been registered at the UG for at least two semesters and must have obtained at least 60 ECTS credits from the UG. These credits must include 5 ECTS credits for a colloquium (a public lecture with subsequent discussion on a topic of general relevance). All UG research projects are thesis projects that are subject to the regulations of the Master's programme 'Ecology and Evolution' at the UG (see Section 5.5.1). In principle, a 30 ECTS research project in the fourth semester can be executed at Harvard, Lausanne or another external institute, as long as the student is registered in Groningen. This, however, requires that the project is set up according to the UG regulations for a thesis project, that the project is (co-) supervised by a GELIFES professor, and that the thesis is defended at the UG.

4.2.2 Munich

To obtain a degree from the Ludwig-Maximilians-University Munich (LMU Munich) students must have been registered at the LMU for at least two semesters, including the semester in which they graduate. During that time, they must obtain 60 EC from LMU. As in Groningen, these credits can include a 30 EC research project conducted at Harvard, Lausanne or elsewhere, provided that the LMU-regulations (see Section 5.5.3) for such a project are met and the project is (co-)supervised by a faculty member of LMU.

4.2.3 Montpellier

To obtain a degree from the University of Montpellier (UM), students must be registered for at least one semester (not semester 4). During the registration period, students must obtain at least 30 ECTS credits from UM. Although it is possible to obtain a degree from UM after spending only the second semester in Montpellier, it is advisable to also spend an additional semester for a research project. As in Groningen and Munich, the research semester can also be spent at Harvard, Lausanne or elsewhere provided the UM regulations (see Section 5.5.2) are met and the project is co-supervised from Montpellier.

4.2.4 Uppsala

To obtain a degree from Uppsala University (UU) students must have been registered at UU for at least one semester and must have passed all relevant MEME courses specified in section 5.1.2. Although it is possible to obtain a degree from UU after spending only the first semester in Uppsala, it is advisable that students who want to obtain a degree from UU spend an additional semester for a thesis (in semester three) or research project (semester four) in Uppsala.

4.2.5 Harvard and Lausanne

Harvard University and the University of Lausanne are associate partners. Associate partner universities cannot offer a degree for the MEME programme. However, a selected number of students can attend one of these universities, during their research project in semester four (see section 5.5.5 and 5.5.6).

5 STRUCTURE AND CONTENT OF THE PROGRAMME

In this section a typical “MEME trajectory” and what is to be expected at the MEME partner universities is described in detail. Section 5.1 outlines the mandatory core courses to be followed in either Groningen or Uppsala. Students are more flexible from their second semester onwards, they go to either Montpellier or Munich for a combination of (elective) coursework and individually arranged research projects. Section 5.2 briefly describes some of the courses that are available there. Additional course and electives, are listed in Sections 5.3 and 5.4. Most MEME students devote their 3rd and 4th semester to two major research projects. The requirements for such projects are described in Section 5.5. Section 5.6 is devoted to the MEME summer.

	Semester 1	Semester 2	Semester 3	Semester 4
Groningen	MEME core courses (30 ECTS)		Thesis 1 (30 ECTS)	Thesis 2 (30 ECTS)
Uppsala				Research Project (30 ECTS)
Munich	MEME specialization courses (15 ECTS) Research training project(s) (15 ECTS)	Thesis 2 (30 ECTS)		
Montpellier				

5.1 The first semester

MEME students start their study programme by attending the annual MEME summer school that typically takes place in the third week of August (see Section 5.6.1). Subsequently they travel on to either Groningen or Uppsala where they spend their first semester. At both locations they follow a programme of about 30 ECTS of mandatory “core courses.” These courses have a double purpose: to provide students with a diversity of backgrounds with an overview of methods and concepts in modern evolutionary biology; and to provide students with basic skills required for conducting scientific research.

Semester 1 – Groningen or Uppsala	
Groningen	Behavioural Ecology & Evolution (10 ECTS) Evolutionary Theory (5 ECTS) Principles of Conservation Genetics in Natural Populations (5 ECTS) Genomics in Ecology & Evolution (5 ECTS) Colloquium Ecology & Evolution (5 ECTS)
Uppsala	Evolutionary Patterns (15 ECTS) Evolutionary Processes (15 ECTS)

5.1.1 First semester in Groningen

The first semester in Groningen begins on the first Monday of September. The programme consists of five courses. These core courses are intense; every week students have 30-40 contact hours with their lecturers and supervisors. Here we give a very brief description of these courses; consult the [MEME website](#) for additional details.

[Behaviour, Ecology and Evolution](#) (10 EC)

A crash course teaching the basic skills for conducting independent behaviour- and eco-evolutionary research: formulating a relevant and timely hypothesis; finding literature on background and context; collecting data; analysing the data with the help of statistical software; presenting the results; writing a scientific article.

[Evolutionary Theory](#) (5 EC)

The course aims to provide an overview of modern evolutionary theory, with special emphasis on natural and sexual selection. In lectures and practical exercises students will be exposed to various modelling approaches (population genetics, quantitative genetics, adaptive dynamics, evolutionary game theory, life history theory), thereby experiencing the scope and limitations of these approaches.

[Genomics in Ecology and Evolution](#) (5 EC)

The objective of this course is to introduce students to the role of genomics, as it applies to fundamental questions in ecology and evolution. Topics include genome evolution, functional diversity, adaptation, speciation, genotype-phenotype interactions and conservation.

[Principles of Population Genetics in Natural Populations](#) (5 EC)

The course focuses on different specific applications of population/individual-based genetic data in conservation, ecology and behaviour, such as individual identification and parentage analysis; delineation of management units and population structure; long- and short-term abundance; as well as detection of selection/adaptation in genomic data. These topics will be explored through weekly case-studies, which will be prepared by reading and subsequent presentation and discussion, followed by practical analysis using common computer software.

[Colloquium](#) (5 EC)

A colloquium is an oral presentation that discusses research developments in a particular area. It should be a captivating academic survey that emphasizes recent discoveries while also touching on the key unresolved research issues. It should place the research whenever possible in a societal context, paying attention to its ethical implications. The colloquium topic is selected in consultation between student and supervisor. The colloquium is mandatory for students that wish to get a degree from UG.

5.1.2 First semester in Uppsala

There are two core courses in Uppsala, each worth 15 EC.

[Evolutionary Processes](#) (15 EC)

The course focuses on the major processes leading to evolutionary change: mutation, genetic drift, selection and migration. Each of these processes will be studied in detail, with emphasis on evolutionary changes in natural populations and how such changes can affect speciation. The course will also present state-of-the-art ecological and genetic tools for studying and understanding evolutionary dynamics in natural systems.

[Evolutionary Patterns](#) (15 EC)

The course focuses on how the evolutionary history is manifested in patterns that can be observed in and among organisms, and how these patterns can be detected and analysed to let us draw conclusions about the causes and the underlying processes. The course comprises lectures, seminars, laboratory sessions, and project work.

5.2 The second semester

Semester 2 – Munich or Montpellier	
Munich	Basic and Advanced Evolutionary Genomics (3 ECTS each) EES Excursion (3 ECTS) Essential Skills in the Analysis of High-Throughput Genomic Data (6 ECTS) Experimental Behavioural Ecology (6 ECTS) Genomics of Adaptation and Speciation (3 ECTS) Pretty plots - Visualizing Statistical Data (3 ECTS) Statistics (3 ECTS) Research training project(s) (typically 9, 12 or 15 ECTS, max. 15 ECTS)
Montpellier	Advanced Population Genetics (3 ECTS) Advanced Statistics (3 ECTS) Genetic Data Analysis (3 ECTS) Modelling in Ecology and Evolution (3 ECTS) Hot Topics in Ecology and Evolution (2 ECTS) Evolutionary Applications (1 ECTS) Research training project (15 ECTS)

5.2.1 Second semester in Montpellier

The second semester in Montpellier begins in the second week of February. MEME students are expected to first follow eight courses (totalling 15 EC) that are taught in English and have been especially designed for the MEME programme. They can also follow other (French-taught) courses. Here we briefly outline the eight MEME courses (check the [MEME website](#) for details).

[Advanced Population Genetics](#) (3 EC)

The course provides the theoretical background for understanding the principles of how the interplay of selection, mutation and genetic drift affects the evolution of populations.

[Advanced Statistics](#) (3 EC)

The course provides a solid theoretical background underlying modern statistics, insights into protocol and model building, and methods for the accurate interpretation of data.

[Genetic Data Analysis](#) (3 EC)

The course recalls essential concepts of population genetics theory; contrasts classical inference methods (e.g. F-statistics) with more modern approaches (e.g. coalescent theory); and shows how demographic history may be inferred from genetic patterns.

[Modelling in Ecology and Evolution](#) (3 EC)

This course familiarizes students with different kinds of models and approaches using R by working through problems in ecology and evolutionary biology.

[Hot Topics in Ecology](#) (EC 2)

A small group of students explores a selection of recent papers on a “hot” topic in ecology and evolution. The group then presents the topic to the rest of the class and leads the discussion.

[Evolutionary applications](#) (1 EC)

The course discusses cases where evolutionary biology based implementations provide invaluable insight in applied issues such as vector control, conservation biology or fish stock management.

5.2.2 Second semester in Munich

The second semester in Munich begins around mid-April. While at the LMU, MEME students will mostly participate in the courses offered in the master’s program in Evolution, Ecology and Systematics ([EES](#)). However, they can also participate in courses that are offered in the other Master’s programs of the LMU Faculty of Biology in Plant Sciences (PLS), in Molecular and Cellular Biology (MCB) or Human Biology (MHB). All courses are taught in English.

In addition to many other courses on offer, in particular, the following courses can be followed in the second semester:

[Basic and Advanced Evolutionary Genomics](#) (lectures; 3 EC each)

These two lectures provide introduction to the field of genomics. Topics covered include comparative genomics, evolution of genome size, gene and genome duplication, origin of new genes, isochores and GC content, codon bias, evolution of sex-biased genes and evolutionary functional genomics.

[Experimental Behavioural Ecology](#) (3 EC)

This course teaches students how to conduct empirical research in behavioural ecology, by collecting field data and conducting laboratory experiments.

[EES Excursion](#) (3 EC)

In the second semester, students are able to go on an excursion. The goal of this excursion is to provide students with a comprehensive, interdisciplinary approach to a habitat (e.g., high alpine valleys). It will include small field projects followed by a thorough statistical analysis of the data.

[Genomics of Adaptation and Speciation](#) (3 EC)

The program of this seminar covers essential topics on adaptation and speciation.

Foundational theory supporting new research questions, advantages of current genomic methodologies, and the limitation defining future advances of the field are being discussed.

[Statistics](#) (3 EC)

This course provides students with the statistical tools that are most important or biologists. In June, students will go on a field trip where they will collect field data that are subsequently analysed with statistical software (e.g. R and SPSS).

5.3 Other Courses

All partner universities offer more MSc-level courses that may be interesting and useful. For example, students who want to conduct experiments with animals might need to take a course on animal experimentation first. In this section, we list some of these additional MSc-level courses. For a complete list and detailed information, students should consult the websites of the partner universities.

5.3.1 Groningen

- [Advanced Statistics](#) (5 EC)
- [Animal Experimentation](#) (5 EC)
- [Mathematical Models in Evolution](#) (6 EC)
- [Molecular Methods in Ecology and Evolution](#) (10 EC)
- [Polar Ecosystems](#) (5 EC)
- [Programming C++ for Biologists](#) (5 EC)

5.3.2 Montpellier

Check the local programme (usually in French) with the local coordinators.

5.3.3 Munich

- An Introduction to Remote Satellite Sensing and GIS (3 EC)
- An Introduction to Scientific Programming in Python (3 EC)
- Bioimaging (Imaging Techniques in Bio-Sciences) (3 EC)
- Current Topics in Behavioural Ecology (3 EC)
- Current topics in Statistical Genomics (3 EC)
- Evolutionary Developmental Biology of Arthropods (3 EC)
- Evolution of Brains and Behaviour (3 EC)
- Exercises for Species Diversity of Lichens (3 EC)
- Functional Morphology of Social Insects (3 EC)
- Fundamental Concepts and Tools for Bioinformatic Analysis (3 EC)
- Human Genomics (3 EC)
- Life Sciences Communication (3 EC)
- Marine Biology (Systematics of Marine Flora and Fauna) (3 EC)
- Matlab Programming (3 EC)
- Measuring Animal Behaviour: from an idea to a publication (zoo practical) (6 EC)
- Mechanisms of Animal Development (3 EC)
- Molecular and Ecological Aspects of Biotechnology with Micro-Algae and Cyanobacteria (3 EC)
- Molecular Plant Microbe Interactions (6 EC)
- Morphology, Phylogeny and Evolution of Deuterostomes (6 EC)

- Morphology, Evolution and Diversity of Seed Plants (3 EC)
- Neurophilosophy (3 EC)
- R-course with the topic Metagenomics / Community Analysis (6 EC)
- Sustainable Food Production and Global Challenges (3 EC)
- The Ongoing Global Mass Extinction: Finding Ways out of the Biodiversity Crisis (3 EC)

5.3.4. Uppsala

- [Applied Ecosystem Ecology](#) (15 EC)
- [Ecotoxicology](#) (15 EC)
- [Fundamental and molecular systematics](#) (10 EC)
- [Genes, Brain and Behaviour](#) (15 EC)
- [Modelling in Biology](#) (5 EC)
- [Population and Community Ecology](#) (15 EC)
- [Trends in Molecular Biology and Biotechnology](#) (15 EC)

5.4 Electives

In addition to coursework and research projects, students can get credits for “electives.” We use this term to characterize science-related activities that allow students to expand and deepen their knowledge, to acquire or improve academic skills, or to further their career in other ways (e.g. by attending a scientific conference or a traineeship at a potential employer). For example, students can obtain credits for being involved in the organization of scientific events (e.g. a literature club, workshop or a MEME summer school) or taking responsibilities furthering science (e.g. acting as student speaker). They can also visit other labs to learn new techniques, or do an internship at a museum, a school, a scientific publisher, or an NGO. It is also possible to get credits for writing a publication (if this is not part of a research project).

The possibility of obtaining credits for electives is subject to the limitation that electives must be clearly related to science. Non-scientific activities (like following a languages course) cannot be included in the electives. Since electives are often non-standard elements of an MSc curriculum, it is important to discuss beforehand (with the mentor or the local coordinator) whether an intended scientific activity can be included among the electives, how many credits can be assigned for this activity, and which rules must be followed in order to make these credits “count” for the degree requirements. In Groningen, for example, electives need to be (co-)supervised by a professor, and clear arrangements have to be made (beforehand!) as to the learning goals, the overall set-up, and the quality and intensity of supervision.

5.5 Research projects

	Semester 3 – All partners (only internal projects)
Groningen	First thesis project (30 ECTS)
Uppsala	Thesis project (30 ECTS)
Munich	Thesis project (27 ECTS + 3 ECTS for attendance of lab meetings and scientific talks)
Montpellier	First thesis project (30 ECTS)

	Semester 4 – All partners (external projects possible)
Groningen	Second thesis project (30 ECTS)
Uppsala	Research project (30 ECTS)
Munich	Research project (30 ECTS)
Montpellier	Second thesis project (30 ECTS)

The MEME programme has been designed to provide the students with an optimal training for a subsequent PhD project and eventually a career in scientific research in an academic or industrial (business) setting. We strongly believe that the most effective way for a student to learn how to do research is by conducting their own research project under close supervision by an experienced researcher. The student becomes a junior member of the research group and participates in the research meetings, literature clubs, and discussion events. Students in the MEME programme will spend at least half of their time (60 EC) doing research, carrying out at least two different projects. At least one of the research projects (the first one) must be a 30 EC “thesis project” that results in a “Master’s thesis.” A Master’s thesis is an important piece of work since it is 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. This way, the research experience of a thesis project will make students actively contributing members of the international scientific community. Although research projects are key elements of the MSc programme at all partner universities, the exact regulations concerning these projects differ slightly between these universities. Below we explain the basic requirements to develop a research project in each of the universities. The first project, which is always carried out at one of the four partner institutions, shall be the thesis project, if only one thesis project will be done.

To identify potential research projects, the student is advised to start the search at the [website](#). On this page the research labs involved with MEME are listed as well as links towards possible projects or research groups that are suggested to be of interest for the MEME programme. Individual initiatives in contacting research groups outside of these lists is encouraged, however two things need to be kept in mind: 1. Research leaders are very busy and may not respond to your emails, especially if they’re not familiar with the programme, 2. The project needs to be approved both by the mentor and the MEME programme.

5.5.1 Groningen

All the master research projects carried out by MEME students at the RUG are 30 EC thesis projects. During their project, students are expected to actively participate in seminars, literature discussions and lectures within the research group they have joined. As part of their project, students must first write an introductory essay and give an introductory presentation to the research group explaining the objectives and research plan of their project. At the end of the project, they are required to write a report (thesis) and give a final presentation to the

research group explaining their results. A scientific staff member of the research group will supervise the project, often in collaboration with a post-doc or a PhD student, who act as daily supervisor. Together the supervisors evaluate the project and provide feedback to the student. This feedback addresses aspects such as specification of a well-defined research question, review of the relevant literature, methods, data analysis, planning and organization, lab notebook, presentation of results, organization of the Master's thesis, writing style, etc. The main supervisor will mark the student according to the grading system of Groningen (see Section 6.1). For more details see the RUG regulations for research projects that can be downloaded from the MEME website.

5.5.2 Montpellier

In Montpellier, students can be involved in two different types of research project: short projects of 15 EC (3.5 months) or thesis projects of 30 EC (6 months). For both projects, students have to fulfil specific requirements. First, an introductory short report should be written, stating the research questions, the research plan of the project, and the methods to be used. This plan is commented by a panel of senior scientists. At the end of their project, students must write a report. At least two staff members, not including the supervisor, will review the report. Finally, a ten/fifteen-minute talk and a defence of the project will take place in front of the thesis defence committee, which will determine the grade for the project. This committee will be composed of staff members including the reviewers of the short report; the supervisor of the project is not part of this committee and does not grade the students (see also the [Montpellier study guide](#)).

5.5.3 Munich

Students can do several research projects at or via LMU Munich:

Short research projects (typically 9, 12 and 15 EC) are typically carried out during the second semester. They require projects require a final written report. Detailed information can be found in the respective [guidelines](#).

There are two different kinds of larger 30 EC projects at the LMU: research projects and master's thesis projects. This is because the study requirements of the LMU only allow for one master's thesis to appear on a student's transcript or diploma. The research project is 30 EC credits. The thesis project also adds up to 30EC credits, but is made up of 27 EC for then thesis and defence, and 3 EC for the completion of a related colloquia and participation in the lab group seminar. Students who wish to receive a degree from the LMU must complete a thesis project, either in combination with a S2-course semester or in combination with a second 30 EC project. In the latter case, one of the projects has to be designated as "thesis project."

The two types of projects are essentially the same in terms of the project duration (24 weeks) and the day-to-day work of the student. Both projects require a final written report and for both students are expected to participate in the day-to-day activities of the group in which they are working (such as seminars, and journal clubs), and an oral presentation of their results to the hosting group. However, in case of a thesis project (to be conducted in the 3rd or 4th semester) stricter administrative rules are applied. Detailed information about the research projects can be found in the "[Thesis guidelines](#)" and the "[Research project guidelines](#)".

The final grade for any of the projects is given by the official LMU supervisor of the project, who must be a member of the LMU Faculty of Biology AND listed on the "[list of internal supervisors](#)".

5.5.4 Uppsala

Students can do several research projects at the UU. However, the first of these projects must be designated to be a “thesis project” and the second one a general research project. A thesis project must be 30 EC. During a research project, students are embedded in the research group of their supervisor and they are expected to participate in the activities of the group. At Uppsala all research projects are supervised by a staff member of the UU. A thesis (report) and an oral defence (in case of a thesis project) in front of the research group are required. The report includes a non-technical summary and a scientific abstract. The supervisor will grade the project on the basis of the presentation and the thesis. To show their capacity for critical thinking, students must also act as opponent on at least one other degree project within the same research area.

5.5.5 Harvard

A maximum of 25% of the students per cohort have the opportunity to spend a research semester at Harvard. In order to secure one of these positions, MEME students have to submit an application to the MEME Office in Groningen (MEME@rug.nl). The application deadline is June 1, and it applies to the 4th semester projects. Students who have been selected to conduct a research project at Harvard, must first find a suitable research group (a “lab” in the jargon of American universities). To this end, a student has to take the initiative and contact one or several research group leaders in order to enquire about the possibilities of doing a 30 ECTS project under their supervision. The Harvard supervisor needs to be a faculty member of the Department of Organismic and Evolutionary Biology (OEB; see list of faculty members [here](#)). Since not all Harvard professors are fully aware of the MEME exchange programme, it is useful to send them some information about MEME, stressing the fact that MEME is a highly competitive international programme directed at the top 5-10% students in evolutionary biology of a given cohort. It is also advisable to provide them with some personal background information, a list of research interests related to the lab in question, and some indication of motivation and performance. Applicants should keep in mind that Harvard professors can afford to be choosy, and that they will only accept Master’s students from whom they can expect to profit in their own research.

The project at Harvard must be co-supervised (from a distance) by one of the faculty members of the university where the student is registered. The co-supervisor has to ensure that the project satisfies all the local requirements of this university. Although these students are physically present and conducting research at Harvard, their project is formally recognized as a thesis project at one of the European partner universities. For this reason, the students must always be registered at one of these universities. It is of crucial importance that the (external) MEME supervisor is fully informed about the procedure and the fact that he/she has quite some responsibility for this project. Ideally, the MEME supervisor works in a field related to the Harvard project, making it easier to keep in touch and judge the progress of the project. Once an (“internal”) Harvard supervisor and an (“external”) MEME supervisor have been identified, the student should write a short research proposal (not more than one page!) stating the research questions to be addressed and (in broad outline) the methods to be used for tackling these questions. In addition to this proposal, the application should include an informative CV, an invitation letter from the Harvard supervisor, and a consent letter of the external MEME supervisor. The application should be sent to the MEME Office in Groningen (MEME@rug.nl). From there, all complete applications will be sent to Harvard. The Department of Organismal and Evolutionary Biology ([OEB](#)) is in charge of processing the

applications. The OEB will make the selection and communicate the results to the students. Once students have been informed of the outcome Harvard will start the administrative procedure regarding registration and visa (see Section 7.1).

Notice that two MEME students executing similar research projects at Harvard but registered at different partner universities may be subject to slightly different regulations reflecting differences in the degree requirements of their European “home” universities. For example, the master thesis resulting from a project executed in Harvard needs to be defended (potentially remotely) if the student is registered in Groningen and Montpellier, while a formal defence is not required from the University of Uppsala.

5.5.6 Lausanne

A maximum of 10% of the students per cohort will have the opportunity to spend a research semester at University of Lausanne as an external project. A request for an external project at Lausanne will first need approval from the MEME Administrative Coordinator, who keeps an eye on the overall trajectory of the student and on the limit of possible exchanges with Lausanne.

During the exchange with Lausanne the student will be registered and supervised at one of the partner universities (Groningen, Montpellier, Munich or Uppsala) from which the exchange will take place. The project must be co-supervised (from a distance) by one of the faculty members of the university where the student is registered. The co-supervisor has to ensure that the project satisfies all the local requirements of this partner university. Although these students are physically present and conducting research in Lausanne, their project is formally recognized as a thesis project at one of the European partner universities. It is of crucial importance that the (external) MEME supervisor is fully informed about the procedure and the fact that he/she has quite some responsibility for this project. Ideally, the MEME supervisor works in a field related to the project in Lausanne, making it easier to keep in touch and judge the progress of the project.

After finding a supervisor and obtaining approval from the MEME coordinator, the student needs to request approval for the exchange from the local coordinator of the partner university of the intended mobility. Finally, the International Office of the partner university will contact, on behalf of the student, the International Office of Lausanne to start the relevant (visa, accommodation etc.) application procedures. The student will have to request an exchange, preferably in September but no later than November, while they are still in their 3rd semester.

5.5.7 External projects

Under exceptional circumstances, research projects can also be conducted outside the MEME consortium. Students who want to do an “external” research project need the approval of their mentor and the MEME programme. Formally, the requirements are similar to the research projects executed at Harvard and Lausanne. During the project period, they must be registered at one of the MEME universities, and in addition to their local supervision, they must have a co-supervisor from this university.

5.6 MEME summer schools

The annual MEME summer schools provide an ideal opportunity for the whole “MEME family” (the students of three cohorts, lecturers from all partner universities, organizers of the programme) to meet and exchange all kinds of information.

The MEME summer schools take place in the third week of August, one week before the student introduction weeks in Groningen and Uppsala. All MEME students have to participate in at least two summer schools, but typically students strive to take part in all three (at the start of their first and second semester and at the end of their second year). In addition to the 60+ students, several invited lecturers and faculty from all partner universities will also be present.

A summer school starts with a special day for the new cohort of students. The students meet each other for the first time and they get the opportunity to introduce themselves to the group in a brief presentation. Various activities are organized to stimulate student-student communication and interaction. The MEME coordinators provide detailed information about the programme, such as the structure of the first and second semester, typical mobility schemes, and degree requirements. Faculty from all partner universities provide a brief overview of the local course menu and the research foci at their local institutes. Student representatives from all four universities (and from Harvard and Lausanne) give the new students an impression about “student life” at these places; they cover aspects like housing, public transportation, sporting facilities, cultural events, “must-see” places, recommendable pubs and restaurants, local student federations, and all kinds of local peculiarities. Last, but not least, alumni MEME students give an impression about “life after MEME.” The first day ends with a social get-together where the students have the opportunity of a chat with their future lecturers in an informal atmosphere.

The remainder of the summer school contains of a mix of a scientific programme, career opportunities, a social programme, and various evaluation meetings. The scientific programme mainly consists of lectures of invited speakers, scientific talks of (junior) staff members of the organizing university and alumni of the MEME programme, and presentations by the students who are about to graduate. In particular, the latter presentations are very inspiring, since they give the younger cohorts an impression of the diversity of research topics that can be tackled by MEME students and the level of knowledge and know-how that students can achieve within two years. In addition to talks, the scientific programme also includes activating elements, such as joint work on small group projects (where the new students are guided by students of the older cohorts). In addition to such activities, a summer school excursion and various social evening events help to create the feeling of being part of a vivid and interactive community.

The summer school also includes various evaluation sessions. First, the MEME Board Team meets with the student speakers of the two older cohorts in order to discuss problems encountered (at the local level or with the MEME programme as a whole) and suggestions for enriching or improving the programme. Second, the Board meets to discuss all kinds of issues, including the matters brought forward by the student speakers. Third, there is an overall

“feedback meeting” where all students participate and exchange ideas. After this feedback meeting, the students of each cohort elect four student speakers for the coming year.

The summer school ends with a graduation ceremony, where the achievements of each student are individually recognized in a short speech by a member of the MEME Board. Typically, these speeches include some “words of wisdom” for each individual student, which were provided by the student’s mentor and supervisors. The summer school closes with a graduation party.

6 FINDING YOUR WAY IN AN INTERNATIONAL PROGRAMME

Students of the MEME programme will benefit from being part of various world-leading institutions in the field of evolutionary biology. They will start building international networks with professors and other students that will maintain the benefits of cooperation and mobility in scientific research. Finally, they will learn to appreciate the academic and scientific traditions of several countries. Although exposure to different academic systems is a valuable experience, the differences between countries can also cause practical problems and in some cases even frustration.

For example, students of the MEME programme will soon realize that there are considerable differences in the academic calendar of the four partner universities. For the students going to Uppsala in their first semester, courses start in the final week of August; students going to Groningen start the first week of September. In Uppsala, the first semester ends mid-January, while it continues until the first week of February in Groningen. Differences between academic calendars become even more apparent in the transition from the first to the second semester: courses start early February in Montpellier, while they do not start before mid-April in Munich. Accordingly, students moving from Groningen to Montpellier only have a short break between semesters, while students moving from Uppsala to Munich have a 3-month break (which may have implications for VISA). Fortunately, the MEME partners have found ways to cope with such logistic problems, for instance by offering additional courses or short research projects in the gaps between semesters.

There are many other differences between countries and, accordingly, the MEME partner universities. For example, the academic year in Groningen consists of 42 weeks of study or research, punctuated by two brief vacations (around Easter and Christmas) and a 6-week summer vacation. Courses tend to be organized in intense blocks of 3-6 weeks during which students focus on one subject and spend the major part of the day at the university. In contrast, the academic year in Munich contains only 28 course weeks, while courses are often spread out and given in parallel at other universities. In a programme like MEME, students recognize such differences (which remain hidden to students studying at just one university), and it happens that students at one university get a bit jealous when seeing the seemingly more relaxed schedule at the other universities. You are well advised to suppress such feelings, since on closer inspection it turns out that the duration and intensity of study is much more comparable across countries than it appears at first sight. It is therefore best to expose yourself as much as possible to the local habits and traditions, in order to be able to judge their merits and drawbacks in the end. This way, the diversity you will be confronted with will turn into a valuable learning experience. Should you become an academic teacher in a later stage of your career, this experience will help you to design your courses in such a way that your students can indirectly profit from your evaluation of the various systems you have been exposed to during your time at the MEME programme.

6.1 ECTS mechanism and comparison of grades

The MEME programme makes full use of the European Credit Transfer and Accumulation System (ECTS), which serves as a formal instrument for structure, evaluation, and certification of academic work. All European partner universities have implemented the ECTS system for several years. One credit point (1 EC) corresponds roughly to 28 hours of study, and 60 EC correspond to the study load of one academic year. ECs are awarded for all academic work including contact hours, study time, course participation, taking notes, preparing and giving a presentation, preparing and taking an exam, writing a research paper and other research related activities.

Lecturers award grades according to their local grading system. To make grades comparable across the partner institutions, the grading scales are compared in Table 1. A similar table will appear in the diploma supplement. Yet, even with such a table at hand, it is not always possible to be completely consistent across countries. For example, it is relatively common that German students receive the highest possible grade (1.0), whereas this almost never happens in France or the Netherlands. The MEME Board will compare the grades given at the partner universities on a regular basis in order to ensure that grading is fair and, as much as possible, independent of where the student obtains the credit.

Table 1. A comparison of the grading systems used at the partner universities.

Groningen 10-1	Montpellier 20-1	Munich 1-5	Uppsala 5-1	Meaning
10	20			Excellent, outstanding performance
9	18	1.0	5	Excellent, pass with distinction
8	16	1.7	4	Very good, above average
7	14	2.3		Good, pass with credit
6.5	12	3.3	3	Satisfactory, pass
6	10	4.0		Sufficient, meets the minimum criteria, pass
5	9	4.3-4.7	U	Fail, Unsatisfactory
4-1	9-1	4.7-5.0	U	Fail, Unsatisfactory

6.2 Obtaining a double degree

MEME is a double-degree programme. This means that, upon completion of their programme, MEME students will be awarded with MSc diplomas from two partner universities. In addition, MEME graduates will obtain a certificate for the successful completion of the MEME programme as a whole and a supplement to this certificate. This supplement explains the international nature of the MEME programme and the grading schemes at the various universities, and it includes a joint transcript with all study courses followed in the two years (including credits, grades, and the university where the course was completed).

6.3 Educational organisation

To find their way through their educational programme, students need to have some knowledge about the organisation underlying this programme. This is more challenging for an international programme like MEME than for a local programme. MEME students always have to cope with two levels: the local organisation at the university where they are registered at in a given semester, and the overarching organisation of the MEME programme as a whole.

6.3.1 MEME Board and educational committees

All important decisions affecting the MEME programme as a whole are taken by the Management Board of MEME (or simply the “MEME Board”). These include the rules and regulations of the programme, admission of new students to the programme, and strategic decisions on the future of the programme. The MEME Board consists of the local coordinators (see p.4 of this guide for the contact details of the Board members):

Management Board of MEME:

- Prof. Dr. Martijn Egas – local coordinator at the University of Groningen and director of the MEME programme, chair of the MEME Board;
- Dr. Céline Devaux – local coordinator at the University of Montpellier;
- Prof. Dr. Richard Merrill – local coordinator at the LMU Munich;
- Dr. Pascal Milesi – local coordinator at Uppsala University;

Three educational committees advise the board in various matters. The MEME Admissions Committee is involved in the selection and admission of new students (see Section 8.2). The committee organizes the MEME selection procedure and ranks the applicants on the basis of written material and sometimes interviews. Based on the conclusions of this committee, the MEME Board advises the local university admission boards on admission and ranking (see Section 9.2). The MEME Examination Committee advises the MEME Board in all matters regarding the recognition of study modules (e.g. electives; see Section 5.4), the assignment of credits and grades, the fulfilment of the requirements for issuing a MEME certificate (see Section 6.2).

Admissions and Examination Committee of MEME:

- Prof. Dr. Martijn Egas, University of Groningen, chair of the committee;
- Dr. Céline Devaux – local coordinators at the University of Montpellier;
- Prof. Dr. Richard Merrill, Ludwig Maximilians University of Munich;
- Dr. Pascal Milesi, Uppsala University.

6.3.2 Local organisation

Each semester, MEME students are registered at one of the partner universities, where they are fully embedded in a local Master’s programme. As explained in Section 4, all MEME students have to satisfy the requirements of these local programmes. All these programmes have their own executive boards and their own curriculum and examination committees. The MEME courses, for example, are all evaluated by the local curriculum committee, and the local examination committee plays an important role in deciding on whether a student satisfies the local degree requirements. It is imperative that MEME students make themselves familiar with the local rules and regulations and with the local educational organisation that is responsible for implementing these regulations. A good starting point is the Study Guide of the local

programme, which (if available) can be downloaded from the [MEME website](#). On the website, students can also find links to the local organisations. Additional information will be provided by the local MEME coordinator (see Section 6.3.1).

6.3.3 International Offices

All partner universities have international offices dedicated to assist foreign students with all issues related to moving to another country and finding their way in an often quite different educational systems. The local MSc programmes and the local MEME offices closely collaborate with the local international offices, and solutions to student problems are often found in a joint effort. The international offices organize all kinds of social activities and events, they advise student in making optimal use of local facilities (such as libraries, IT infrastructure, sporting facilities), they offer special services for students with families and students with special needs, and they may assist students in finding housing or language courses.

It is important to realize that all these services may take considerable time. It is therefore important to contact the local MEME office well in advance before moving to another university (preferably 3 months before the move). The local MEME office can then contact the International Office and advise the students on which documents they need and which local requirements they have to fulfil.

6.4 Mentoring

During each semester at any university, each student chooses a personal mentor. The mentor helps their mentees with all issues arising during the first semester and advises their mentees regarding their “study trajectory” in future semesters. The mentor acts as a coach and should create a bridge between the student and the “organisation” (e.g. the MEME Board or the Examination Committee at the local university). We strive to have at least two mentor meetings each year (on an individual basis, online or on site), the student can request for additional meetings at any time.

The mentor is responsible for:

- ensuring that mentor meetings take place
- advising mentees in setting up their individual study plan and formally approving this plan;
- ensuring the scientific and supervision quality of those study modules that are not part of the standard curriculum of the MEME programme (e.g. electives);
- assessing and monitoring the incoming grades and written reports and discussing them with their mentees;
- evaluating the student’s progress, capabilities and limitations
- reporting the student’s progress at the end of each semester to the MEME Examination Committee (see the Student Agreement in the appendix to this guide).

The student is responsible for:

- requesting additional meetings if necessary;
- providing information requested by the mentors;
- coming forward when there is a problem that the mentors may not be aware of.

The mentor will also discuss the following coaching issues with the student:

- general career aspirations and network activities;
- anything that might prevent the student from achieving her/his objectives;
- awareness and education about cultural and gender issues in career development.

7 LOGISTIC ISSUES

7.1 Registration, visa, residence permits

The International Office of the university where you want to register (or where you are already registered) provide an official document of your registration such that you can apply for a visa. Since visa regulations strongly depend on the student's country of origin and the current law in each country, we can only inform students where to find information for their personal case. For more detailed recommendations, you should contact the local MEME office, the local international office, or ask current MEME students (preferably compatriots) for advice.

Holders of a valid EU passport are advised to use that passport for registration at the university (even if they hold non-EU passports as well). Registration is much easier in such a case, and a visa is not required. This saves money for the students, as tuition fees are typically lower for EU residents than for non-EU residents in some universities (see Section 9.1). Holders of non-EU passports will get a "Provisional Residence Permit" stamped in their passport, permitting them to enter the country. Once in the country, they will need to apply for a long-stay visa, which is valid for 1 or 2 years. This permit has to be collected within a certain time frame (usually 1-2 months) and allows the student to travel to other Schengen countries for up to 90 days within the next six months. Once in Europe, holders of non-EU passports need to apply for the next visa (for the next university) or make use of intra EU-mobility which allows for 360 days stay at another EU country. Whether intra EU-mobility is applicable depends on the type of visa and the country of residence, therefore it is important to contact the local international office to determine each personal course of action. Additionally, it is advisable to inform beforehand which documents are needed for the subsequent visa applications, since otherwise you may leave required documents in your home country.

Costs of visa/residence permits are different per country, but students should be prepared that they may amount to €200-€300, with additional administration fees on top of that.

For students coming to Groningen for their semester the Immigration Service Desk fully cares for the visa/residence permit application.

7.2 Accommodation

Finding suitable accommodation may be one of the biggest logistical challenges. With the exception of Montpellier and Uppsala, the partner universities do not supply student housing (halls of residence) on a large scale. However, all universities have housing offices that help students finding accommodation. In addition, local student networks, the MEME students from previous cohorts and the members of the local researchgroup all assist incoming students with finding suitable accommodation. In all cases, it is strongly advisable to start searching for accommodation way before you arrive.

7.2.1 Groningen

For finding accommodation, the University of Groningen cooperates with a [Housing Office](#). Be prepared that housing is scarce in Groningen, in particular at the start of the winter semester. It is therefore advisable to apply for accommodation as early as May. Rooms offered by the housing office are often relatively small, some distance away from campus, and/or quite expensive. It may therefore be a good idea to check alternatives to the housing office, such as local student networks, other MEME students, or the local research group (see above).

7.2.2 Montpellier

There are two main types of accommodation while studying:

- university accommodation – such as halls of residence;
- private accommodation – house and flat rentals.

University accommodation can usually be obtained if asked early enough (end of June – early July for the fall semester, early December for the spring semester). Accommodation must be asked at the international office during the registration process. Finding private student accommodation is also easy in France. Like in other countries, students can also choose to share a private larger accommodation.

7.2.3 Munich

Finding affordable accommodation is one of the greatest challenges for students who come to Munich. Students can apply directly to the [Studentenwerk München](#) (Munich Student Union) that offers student accommodations in halls of residence. The rooms are furnished and the average monthly rent for a single student accommodation is ca. € 360. The Studentenwerk cannot take special requests for rooms (single, double etc.) into account, and neither the International Office nor the MEME coordinator has any influence on the selection process. As the waiting period for a spot in university housing can be several semesters, incoming students are also advised to look for private accommodation.

General information about housing in Munich can be found on the following webpages:

[International Student Guide - LMU Munich](#)

[Accommodations - Munich Graduate Program for Evolution, Ecology and Systematics - LMU Munich](#)

[Accommodations - TUM](#)

7.2.4 Uppsala

The [University Housing Office](#) offers furnished accommodation for both students and guest researchers in different areas of Uppsala. All housing options include basic furnishing. Electricity, water and heating are always included in the rent. Apartments with a kitchen or kitchenette have kitchen utensils. Bed size is normally 200x90cm. Internet is provided in all student rooms, but not in all apartments for researchers.

If you choose to go to Uppsala, your contact details will be forwarded to the local coordinator, who will contact you by e-mail with a Welcome letter and additional information on how to apply for housing.

7.3 Insurance

MEME students are required to take out their own insurance with adequate coverage according to the rules of the different partner universities. Coverage should include all emergencies like visits to the doctor/hospital/ER in case of accidents or sickness. It may not cover services (like dental care) that students might be used to from their home country. Students are therefore strongly advised to consult the insurance policy in detail for coverage.

8 ADMISSION TO MEME

8.1 Admission criteria

MEME is an international MSc programme that is designed for providing students an optimal training for a subsequent PhD project and eventually a career in scientific research. On purpose, all study elements strive to approach the borders of our knowledge and capabilities in the field of evolutionary biology. In comparison to other programmes, the emphasis is less on teaching textbook knowledge and more on discussing the gaps in this knowledge and potential ways toward filling these gaps. This approach is very stimulating, but it can also be highly challenging. Moreover, the MEME programme places much emphasis on activating students to detect gaps in current knowledge themselves and to come up with possible solutions. For this reason, MEME classes are less based on the “consumption” of lectures, but often consist of discussions and problem-oriented working in small groups. For all these reasons, the MEME programme has to be selective and can only accept students whose motivation, intellectual abilities and communication skills fit well to the overall goals of the programme.

To be admissible for MEME, applicants have to provide evidence that they

- have a genuine interest in evolutionary biology and its many facets;
- have a strong motivation for doing research in an area related to evolutionary biology;
- have sufficient background knowledge in evolutionary biology or neighbouring disciplines (e.g. ecology, systematics or bioinformatics) to be able to participate in high-level debates and discussions on topics related to evolutionary biology. A general guideline is: 50% of the BSc courses should be biology related of which 20% also related to evolution;
- have the intellectual ability for following a strongly research-oriented programme;
- have strong communication skills, including a very good proficiency in English;
- have the ability to integrate well in an international and multi-cultural community of students.

Interested students can apply to the programme via the [MEME website](#). To be able to judge whether applicants meet our requirements, the application package must include:

- a completely filled online application form;
- an informative curriculum vitae of the candidate;
- a letter of motivation (very important!) explaining why the candidate is applying for the MEME programme and why the candidate considers herself/himself suitable for the programme; see template;
- proof that a degree in Biology or a closely related field has been obtained (or will be obtained before the start of the next academic year); this degree should be equivalent to or higher than a European Bachelor of Science (BSc);
- an official university transcript allowing to judge the academic background and achievements of the candidate; this transcript should include a list of all courses taken,

- the credit hours, the final grade received, an explanation of the grading system used, and an indication of the student's rank within her/his cohort (including cohort size);
- certification of proficiency in English (e.g. Cambridge Certificate of Proficiency in English, IELTS, TOEFL) (consult the [MEME website](#) for the minimal requirements);

All applications are evaluated systematically according to well-specified criteria (see Section 8.2). As a rule, candidates must be judged as very good (top 20%) on most criteria to be admitted to the MEME programme.

8.2 Selection and admission procedure

All applications to MEME have to be submitted via the MEME website (see Section 8.1). They are evaluated in a three-step procedure.

In a first step, the application files will be checked for completeness and for meeting the minimal requirements (background; degree equivalent to European BSc; proficiency in English). All applicants not meeting the minimal requirements are informed that their application will not be processed further.

In a second step, all remaining applications are evaluated and ranked by the programme coordinators of the partner universities. Each application will receive scores ranging from 1 (lowest) to 10 (highest) for three evaluation criteria: academic background; motivation; and past achievements (e.g. grades obtained). Based on these scores, the team produces a ranking of the applicants, also pointing out special circumstances where the numerical score does not fully capture the suitability of an applicant.

In a possible third step, some of the candidates are invited to participate in an online interview. The applicants will be notified in advance about the structure of the 20-minute interview and all technical details. Each interview is held by the programme coordinators of two universities. At the start of the interview, the applicants are requested to identify themselves by an official identification document. Immediately after the interview, each interviewer gives six scores for the following aspects: presentation ability; ability to handle questions; breadth and depth of knowledge; communication ability (including proficiency in English); motivation; overall impression. The interviewers also indicate whether, based on the interview, they consider the candidate eligible for MEME. The interviewers' scores are combined in an overall interview score, which in turn is combined with the score of the second round of selection (both scores having equal weight), resulting in a final score and a ranking of candidates. Subsequently, the Admissions Committee convenes and produces a final ranking of candidates and a recommendation to the MEME Board about candidate eligibility for MEME. The MEME Board then takes the decision on selection and ranking. The final decision of admission lies with the admissions offices of the local universities. All candidates are informed about the outcome as soon as possible. All selected students will be emailed how to register at the university where they want to start the programme.

All applicants not considered eligible are informed about this judgment. They are also informed that they can appeal against the committee's judgement by sending an email to the coordinator of the MEME programme.

8.3 Time line

Each year, the application deadline is on the first Sunday of March of the calendar year in which the new MEME cohort starts (in August). Information regarding the application procedure will be made available on the MEME website at least six weeks before the deadline. Application is only possible via the [MEME website](#) and making use of the official application forms. Applications arriving after the deadline will not be taken into consideration.

The first two rounds of selection take place in the first two weeks of March. Applicants to be invited for an interview will be notified about this by email by mid-March. Any applicants that are not eligible for the MEME programme are notified at the same time. The interviews take place in the last week of March. All applicants are notified about the final outcome at the end of March. This notification specifies whether the applicant is admitted to the MEME programme and also explains the appeal procedure.

9 TUITION FEES AND SCHOLARSHIPS

In order to study in the MEME programme, admitted students have to enrol themselves in the university where they choose to study, and pay the accompanying tuition fee (which varies among the partners). The MEME programme does not have scholarships available, but students may apply for scholarship programmes themselves, or obtain a student loan.

9.1 Tuition fee

Information about tuition fees at the four partner universities can be found at the following websites:

Groningen – <https://www.rug.nl/education/application-enrolment-tuition-fees/tuition-fee/master>

Uppsala – <https://www.uu.se/en/study/masters-studies/fees>

Munich – https://www.lmu.de/en/workspace-for-students/abc-study-guide/fees-and-tuition-fees/index.html#st_accordion_master_1

Montpellier – <https://www.umontpellier.fr/en/international/etudier-a-letranger/venir-etudier-a-luniversite-de-montpellier>

9.2 Scholarship opportunities

Many countries have set up funding (or study loan) schemes for master students participating in prestigious MSc programmes. For example, Latin American countries like Brazil, Colombia and Mexico have established scholarship programmes that are particularly targeted at European MSc programmes. In addition, there are various international scholarship programmes, and the EU has established a loan system as well. All these funding schemes have their own rules and restrictions. The MEME coordinators are no experts in this area, and they have only limited possibilities in assisting student to find suitable funding. However, they can provide students who have been admitted to the programme with an acceptance letter and (if needed) with additional letters supporting their application for a loan or a scholarship.

MEME students come from all over the world, and many of them have found external funding themselves.

All partner universities have web pages with links to funding opportunities, such as the [“grant finder”](#) of the University of Groningen. All partner countries have academic exchange organisations, such as the German [DAAD](#) or the Dutch [Nuffic](#) and [Study-in-Holland](#). Additional links can be found on the MEME website.