

# **Annex of the Teaching and Examination Regulations of Ecology & Evolution for the students of the track Evolutionary Biology (Ecology & Evolution)**

**2018 – 2019**

## **Preamble**

The MEME programme (Erasmus Mundus Master Programme in Evolutionary Biology) is an MSc programme that is jointly organized by four European universities:

- Rijksuniversiteit Groningen (The Netherlands)
- Université de Montpellier (France)
- Ludwig-Maximilians Universität München (Germany)
- Uppsala Universitet (Sweden)

in close co-operation with Harvard University (USA) as an external partner.

The programme is funded by the European Union through the Erasmus Mundus initiative. At the University of Groningen, the MEME programme is a specialization within the Master's degree programme Ecology and Evolution. However, the MEME programme must adhere to specific regulations imposed by the European Committee. As a result in collaboration with the Course Committee, special set of Teaching and Examination Regulations has been established for this specialization. In spirit, these regulations closely follow the Teaching and Examination Regulations of the Master's degree programme in Ecology and Evolution, but they also satisfy the conditions imposed by the regulations of the European Committee.

The University of Groningen is the coordinating partner of the MEME consortium, which consists of the aforementioned universities. The European Committee requires that each student that graduates in an Erasmus Mundus Master programme obtains a degree from at least two of the partner institutions that organize the Master's programme. This means that students of the MEME programme must comply with at least two sets of local requirements for obtaining a Master's degree. In addition, the European Committee requires that graduates from an Erasmus Mundus Master programme have spent at least one semester at two different partner institutions.

These Teaching and Examination regulations are for students participating in the Erasmus Mundus Master Programme in Evolutionary Biology (MEME) who want to graduate at the University of Groningen.

## **Section 1 General provisions**

### **Article 1.1 Applicability**

These Regulations apply to the modules and the final assessment of the Groningen part of the MEME programme, a specialization within the Master's degree programme Ecology and Evolution.

### **Article 1.2 Additional definitions**

The following additional definition applies to these Regulations:

Final assessment: the final assessment of the degree programme as a whole on which the decision is based whether a student obtains a Master's degree from the University of Groningen.

### **Article 1.3 Additional teaching outcomes of the MEME degree programme**

The graduate:

1. has a sound knowledge of the theory of evolution and is familiar with "evolutionary thinking" in biology and other disciplines;
2. is familiar with the state-of-the-art concerning knowledge, skills and scientific approaches in at least one specific field of expertise in evolutionary biology;
3. is capable of following a postgraduate training in evolutionary biology, performing a PhD project and training him/herself continuously.

## **Section 2 Structure of the degree programme**

### **Article 2.1 Study load**

1. The MEME programme has a study load of 120 ECTS credits
2. The study load of a module is expressed in whole or half ECTS credits.

### **Article 2.2 Content of the degree programme**

To graduate from the MEME programme, the student has to satisfy the following requirements:

1. In the first semester the student follows a compulsory programme of a total of 30 ECTS credits either at the University of Groningen or at Uppsala University. These programmes adhere to the same teaching outcomes (as ensured by the MEME programme).

At the University of Groningen, the first semester consists of four mandatory courses:

- Behaviour, Ecology and Evolution (9 ECTS)
- Genomics in Ecology and Evolution (8 ECTS)
- Evolutionary Theory (8 ECTS)
- Research Proposal (5 ECTS)

At Uppsala University, the first semester consists of two core courses:

- Evolutionary Patterns (15 ECTS)
- Evolutionary Processes (15 ECTS)

2. An additional 15 ECTS credits should be spent on course work. The following courses can be taken at the University of Groningen, the University of Montpellier, the Ludwig-Maximilians University of Munich or at Uppsala University.

Groningen:

- Advanced Self-Organization of Social Systems (5 ECTS)
- Advanced Statistics (5 ECTS)
- Animal and Human Experimentation (5 ECTS)
- Current Themes in Ecology and Evolution (2 ECTS)
- Mathematical Models in Evolution (6 ECTS)
- Molecular Methods in Ecology and Evolution (5 ECTS)
- Polar Ecosystems (5 ECTS)
- Programming C++ for Biologists (5 ECTS)

Montpellier:

- Advanced Population Genetics (2.5 ECTS)
- Advanced Statistics (2.5 ECTS)
- Genetic Data Analysis (2.5 ECTS)
- Hot Topics in Ecology (2.5 ECTS)
- Modelling in Ecology and Evolution (2.5 ECTS)
- Reading Papers and Seminars (2.5 ECTS)

Munich:

- Basic and Advanced Evolutionary Genomics (3 ECTS each)
- Evolutionary Ecology Modelling (6 ECTS)
- Experimental Behavioural Ecology (3 ECTS)
- Population Genetics (6 ECTS)
- Principles of Behavioural Ecology (3 ECTS)
- Statistics (3 ECTS)
- Essential Skills in the Analysis of High-Throughput Data (6 ECTS)
- Hot Topics in Evolution, Ecology and Systematics (3 ECTS)
- Marine Biology (Seminar + Excursion; 6 ECTS)
- Multivariate Statistics in Ecology and Quantitative Genetics (3 ECTS)
- PERL for Beginners (3 ECTS)
- Transcriptomic Analysis in Evolution (3 ECTS)
- EES excursion (3 ECTS)
- An Introduction to Remote Satellite Sensing and GIS (3 ECTS)
- Current Topics in Behavioural Ecology (3 ECTS)
- Phylogenetic Analysis of Morphological and Molecular Characteristics (3 ECTS)
- Measuring Animal Behaviour; from an idea to a publication (6 ECTS)
- Matlab Programming (3 ECTS)
- Functional Morphology (3 ECTS)

- Plant Ecophysiology (3 ECTS)
- Chemical Ecology and Neurobiology (3 ECTS)
- Human Genomics I and II (3 ECTS each)
- Current Topics in Primate Genomics (3 ECTS)
- Hot Topics in Ecology (3 ECTS)
- Introduction to Mass Spectrometry-based Proteomics (3 ECTS)
- Genomics of Adaptation and Speciation (3 ECTS)
- Aquatic Ecology (3 ECTS)
- Paleogenetics (3 ECTS)

Uppsala:

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

3. At least two research projects must be carried out:

- One project corresponding to  $\geq 30$  ECTS credits will be conducted at the University of Groningen. This does not necessarily have to be the first project.
- One project corresponding to  $\geq 30$  ECTS may be conducted at one of the three MEME partner universities or at Harvard University. In case the research is conducted at Harvard University, it takes place under the responsibility of an examiner of one of the four MEME partner universities. If the student conducts a research project at Harvard University while been registered at the University of Groningen, the responsible person must be an examiner of the MSc programme Ecology & Evolution; this examiner will assess the project.
- Each research project must start with an introductory period of at least 3 weeks, during which the student writes a research proposal that includes a literature review, a description of the research questions to be addressed, and an outline of the approach to be taken. This research proposal will be graded separately. For a research project conducted at the University of Groningen, the grade of this proposal must be a 6.0 or higher.

4. The student must participate in at least two annual Summer Schools in Evolutionary Biology. Participation in the Summer School prior to the first semester is compulsory. The student must present his/her research at the Summer School at least once, by means of an oral presentation.

5. The student has to do a colloquium (5 ECTS), or an equivalent. Entry requirements for the colloquium are the mandatory courses (2.2.1.).

6. The course Research Proposal counts as an equivalent to the essay.

7. The remaining ECs of "electives" can be devoted to more coursework, more research, or a research assignment.

## **Section 3 Examinations and final assessment**

### **Article 3.1 Validity**

Examinations that have been passed remain valid for five years.

### **Article 3.2 Degree**

The specialization 'Erasmus Mundus Master's Programme in Evolutionary Biology' is registered on the diploma supplement.

## **Section 4 Mentoring**

### **Article 4.1 Quality assurance**

1. Each MEME student is provided with a study guide for both the MEME programme and the Ecology & Evolution programme.
2. Each student will choose a mentor from the MSc programme Ecology & Evolution.

## **Section 5 Admission**

### **Article 5.1 Admissions Board**

1. The MEME programme has an Admissions Board that judges the student's fulfilment of the requirements of all partners involved. This board is accountable to the Admissions Board of the Master's programme Ecology & Evolution of the University of Groningen.
2. Students can only be admitted to the MEME programme if they are provided with an admission permit by the Admissions Board of the MEME programme.
3. An admission permit can be employed for admission only in the academic year following the academic year in which the permit is granted.
4. If, to the motivated judgement of the Admissions Board, additional conditions are required, these requirements must be met before the start of the MEME programme.
5. The decisions of the MEME Admissions Board can be appealed to at the Admissions Board of the Master's programme Ecology & Evolution.

### **Article 5.2 Application and admission requirements**

1. The annual application deadline for the MEME programme is the first of February of the year the student will start the programme.
2. Students apply to the MEME Admissions Board by sending in the following documents:
  - a complete curriculum vitae;
  - a survey of the study results attained in academic courses so far;
  - (if applicable) certified copies of former academic degree certificates;
  - a letter explaining their motivation for following this particular programme and outlining their expectations and ambitions;

- a proof of proficiency in English;
  - the names of two scientists willing to provide personal information on the applicant;
  - (if desired) other documents that the student thinks useful in furthering their application.
3. Students will only be considered for the MEME programme if a complete application package has been received before the deadline has passed.

## **Section 6 Final Provisions**

### **Article 6.1 Date of commencement**

These Regulations shall take effect on September 1<sup>st</sup>, 2018.