Module Name
Tutorial Ecology, Evolution and Environment

Type of Module	**Module Code**
o Basic Module	Ecology Tutorial

Identification Number	**Workload**	**Credit Points**	**Term**	**Offered Every**	**Start**	**Duration**
MN-B-E 3	180 h	6 CP	1st term of studying	Winter term	Winter term only	1 term

1	**Course Types**	**Contact Time**	**Private Study**
	Tutorial	60 h	120 h

2 Module Objectives and Skills to be Acquired

Students who successfully completed this module

- have acquired practical skills in ecological experimentation and data collection.
- can analyze data from field and laboratory studies in a wide range of different ecological and evolutionary fields.
- have acquired a broad knowledge of ecological systems and understand the influence of biotic and abiotic environments on ecosystem state, stability and evolution.
- can plan and optimize ecological experiments.
- have gained practice in presenting and evaluating scientific data and studies.

3 Module Content

- Food web structure and ecology of the River Rhine
- Methods of the analysis of terrestrial food webs
- Analysis of interactions within the microbial web
- Methods of environmental chemistry, HPLC and chemical communication
- Analysis of abiotic and biotic parameters in aquatic environments
- Data production and analyses in population genetics (DNA extraction, PCR, fragment size analysis)
- Phylogenetic analysis (alignments, tree building, BLAST search)
- Analysis of genome data
- Introduction to methods to analyze community ecology (e.g. multivariate statistics)
- Community genetics, phylogenomics and environmental transcriptomics

4 Teaching Methods

- Interactive tutorials; Project work; Bioinformatic exercises; Excursions; Training on presentation techniques in oral and written form

5 Prerequisites (for the Module)

Enrollment in the Master´s degree course “Master of Science in Ecology, Evolution and Environment”; Simultaneous participation in the lecture and seminar module “Ecology, Evolution and Environment”

6	**Type of Examination** Oral presentation (100 % of the total module mark)
7	**Credits Awarded** Regular and active participation; Oral presentation at least “sufficient”
8	**Compatibility with other Curricula*** None
9	**Proportion of Final Grade** 7.5 %
10	**Module Coordinator** Prof. Dr. Hartmut Arndt, phone 470 3100, e-mail: teach-ecology@uni-koeln.de
11	**Further Information** **Participating faculty**: Prof. Dr. H. Arndt, Prof. Dr. M. Bonkowski, Prof. Dr. J. Borcherding, PD Dr. K. Dumack, Prof. Dr. E. von Elert, PD Dr. K. Lampert, Dr. F. Nitsche, Dr. C. Sánchez Arcos, Dr. A. Scherwaß, Prof. Dr. A.-M. Waldvogel **Literature:** • Information about textbooks and other reading material will be given on the ILIAS representation of the course (see https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html) **General time schedule:** Weeks 1-14: Tutorials and oral presentations (starting at 2:00 p.m. at different dates, more details will be given at the introduction to the module). **Introduction to the module:** October 09, 2023 at 14:00 (further information see ILIAS folder).