

Basic Tutorial and Practical in Ecology, Evolution and Environment					
Identification number	Workload	Credit points	Term of studying	Frequency of occurrence	Duration
MN-B-E 2	180 h	6 CP	1 <sup>st</sup> term of studying	Winter term	15 weeks
1	<b>Type of lessons</b> Project work/Seminar		<b>Contact times</b> 60 h	<b>Self-study times</b> 120 h	<b>Intended group size</b> 12
2	<b>Aims of the module and acquired skills</b> Students who successfully completed this module ... <ul style="list-style-type: none"> <li>• have acquired detailed knowledge and skills on analysis of molecular data in ecological experiments, enrichment culture, phylogeny and bioinformatic analysis, chromatography and bioassays of info-chemicals and stoichiometric analyses.</li> <li>• have acquired knowledge on current aspects of evolutionary ecology in the fields of aquatic, terrestrial and chemical ecology.</li> <li>• can quantify major freshwater nutrients and assess their impact on bio-geochemical cycling.</li> <li>• have learned how to present research results in oral form and to critically discuss scientific publications related to the topic of the module on a professional level.</li> <li>• are able to transfer skills acquired in this module to other fields of biology.</li> </ul>				
3	<b>Contents of the module</b> <ul style="list-style-type: none"> <li>• Cell cultivation techniques and preservation;</li> <li>• Microscopy (e.g. Electron microscopy; High resolution video-microscopy)</li> <li>• Molecular ecology (e.g. Community genetics; Population genomics; Phylogenomics; Environmental transcriptomics)</li> <li>• Chemical ecology (e.g. Environmental chemistry; HPLC and mass spectrometry; Chemical communication; Metabolomics)</li> <li>• Community ecology (e.g. Community cell respiration; Microbial activity)</li> <li>• Theoretical concepts of ecology and evolution</li> <li>• Field ecology (e.g. field stations in Rees-Grietherbusch and Cologne)</li> </ul>				
4	<b>Teaching/Learning methods</b> <ul style="list-style-type: none"> <li>• Project work; seminar; computer exercises; excursions; training on presentation techniques in oral form</li> </ul>				
5	<b>Requirements for participation</b> Enrollment in the Master´s degree course "Biological Sciences"; Simultaneous participation in the lecture "Ecology, Evolution and Environment - Theory and Methods"				
6	<b>Type of module examinations</b> Oral presentation (100 % of the total module mark)				
7	<b>Requisites for the allocation of credits</b> Regular and active participation; Oral presentation at least "sufficient"				

*Basic Tutorial and Practical in Ecology, Evolution and Environment (MN-B-E 2) continued*

8	<b>Compatibility with other Curricula*</b> None
9	<b>Significance of the module mark for the overall grade</b> 7.5 % of the overall grade
10	<b>Module coordinator</b> Prof. Dr. Hartmut Arndt; phone 470 3100, e-mail: teach-ecology@uni-koeln.de
11	<b>Additional information</b> <b>Participating faculty:</b> Prof. Dr. H. Arndt, Prof. Dr. M. Bonkowski, apl. Prof. Dr. J. Borchering, Dr. K. Dumack, Prof. Dr. E. von Elert, PD Dr. K. Lampert, Dr. F. Nitsche, Dr. C. Sánchez Arcos, Dr. A. Scherwaß, JProf. Dr. A.-M. Waldvogel <b>Literature:</b> <ul style="list-style-type: none"><li>• Information about textbooks and other reading material will be given on the ILIAS representation of the course (<a href="https://www.ilias.uni-koeln.de/ilias/goto_uk_crs_3516848.html">https://www.ilias.uni-koeln.de/ilias/goto_uk_crs_3516848.html</a>)</li></ul> <b>General time schedule:</b> Weeks 1-14: Weeks 1-14: Seminars/tutorials and oral presentations (starting at 2:00 p.m. at different dates, more details will be given in the introduction to the module). <b>From Fri., November 27 at 12:00 a.m. to Son., November 29 at 4:00 p.m.:</b> Field studies at the Ecological Research Station of the Institute of Zoology in Rees-Grietherbusch <b>Introduction to the module:</b> November 02, 2020 at 2:00 p.m., online (further information/link will be sent to your Smail-Account)