

<b>Module Name</b> Zooplankton Chemical Ecology: The scent of death - how to detect predators						
<b>Type of Module</b> ○ Advanced Module				<b>Module Code</b> Zooplankton Chemical Ecology		
<b>Identification Number</b> MN-B-SM (E 4)	<b>Workload</b> 360 h	<b>Credit Points</b> 12 CP	<b>Term</b> 2 <sup>nd</sup> term of studying	<b>Offered Every</b> Summer term, 2 <sup>nd</sup> half	<b>Start</b> Summer term only	<b>Duration</b> 7 weeks
<b>1</b>	<b>Course Types</b> a) Lectures b) Practical/Lab c) Seminar		<b>Contact Time</b> 23 h 152 h 4 h		<b>Private Study</b> 46 h 111 h 24 h	
<b>2</b>	<b>Module Objectives and Skills to be Acquired</b> Students who successfully completed this module <ul style="list-style-type: none"> <li>• have learned how to assess vertical gradients in lakes with an emphasis on zooplankton behavior and species identification during excursions. Students will learn about the functional role of zooplankton in lakes and their adaptive responses to the presence of different predators and the importance of chemical signals in lake foodwebs.</li> <li>• have acquired detailed knowledge about the steering role of taste and smell in freshwater food webs and have been applying state-of-the-art techniques how to detect signaling molecules in water and how to use experiments with living zooplankton to measure inducible defenses.</li> <li>• can independently carry out small scientific projects related to the topic of the module.</li> <li>• have learned how to present research results in oral and written 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>					
<b>3</b>	<b>Module Content</b> <ul style="list-style-type: none"> <li>• Introduction to zooplankton ecology with excursions and field samplings</li> <li>• chemical communication among freshwater organisms</li> <li>• State-of-the-art techniques to extract and measure taste and smell from water. These techniques are as well relevant in environmental analysis of pollutants</li> <li>• Accomplishment and analysis of bioassays with invertebrate animals</li> <li>• What is a metabolome? Principles of metabolomics</li> </ul>					
<b>4</b>	<b>Teaching Methods</b> <ul style="list-style-type: none"> <li>• Lectures; Practical/Lab (Project work); Seminar; Field excursions; Guidance to independent research; Training on presentation techniques in oral and written form</li> </ul>					

5	<p><b>Prerequisites (for the Module)</b></p> <p>Enrollment in the Master's of Science degree course "Ecology, Evolution and Environment"; Completion of the basic modules Lecture, Tutorial and Seminar of the Master's of Science degree course "Ecology, Evolution and Environment"</p>
6	<p><b>Type of Examination</b></p> <p>The final examination consists of two parts: One hour written examination about topics of the lectures and the practical/lab part (50 % of the total module mark), oral presentation (20-30 min; 50 % of the total module mark)</p>
7	<p><b>Credits Awarded</b></p> <p>Regular and active participation; Each examination part at least "sufficient" (see appendix of the examination regulations for details)</p>
8	<p><b>Compatibility with other Curricula</b></p> <p>None</p>
9	<p><b>Proportion of Final Grade</b></p> <p>12.0 %</p>
10	<p><b>Module Coordinator</b></p> <p>Prof. Dr. Eric von Elert, phone 470 6084, e-mail: evelert@uni-koeln.de</p>
11	<p><b>Further Information</b></p> <p><b>Participating faculty:</b> Prof. Dr. E. von Elert, Dr. C. Sánchez-Arcos</p> <p><b>Literature:</b></p> <ul style="list-style-type: none"> <li>• Information on recommended textbooks and other reading material will be given on the ILIAS representation of the course (see <a href="https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html">https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html</a>)</li> </ul> <p><b>General time schedule:</b> Week 1-6 (Mon.-Fri.): Lectures, practical/lab and preparation for the seminar talk (topic and date will be arranged individually); 3-day excursion to the field station in Rees in week 1; Week 7 (Mon.-Fri.): Preparation for the written examination</p> <p><b>Note:</b> The module contains hand-on laboratory work conducted by small groups of students and is taught in research laboratories. The module does not contain computer-based practicals/research as a main component.</p> <p><b>Introduction to the module:</b> Further information will be sent by e-mail to the participants. The module will be taught in room -1.005.</p> <p><b>Written examination:</b> July 19, 2024, second/supplementary examination August 30, 2024; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.</p>