

Ecology of Marine and Freshwater Fish						
Identification number	Workload	Credit points	Term of studying	Frequency of occurrence	Duration	
MN-B-SM (E 5)	360 h	12 CP	1 <sup>st</sup> or 2 <sup>nd</sup> term of studying	Summer term, 2 <sup>nd</sup> half	7 weeks	
1	<b>Type of lessons</b>		<b>Contact times</b>	<b>Self-study times</b>	<b>Intended group size</b>	
	a) Lectures		22 h	44 h	max. 8	
	b) Practical/Lab		155 h	112 h	max. 8	
	c) Seminar		3 h	24 h	max. 8	
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 regarding the ecology of marine and freshwater fish with special emphasizes on spatial and temporal aspects of population dynamics.</li> <li>• have acquired first experiences on conducting and analyzing experiments on fish behaviour.</li> <li>• are able to use a variety of different fishing methods that are needed as baseline in projecting different kind of studies in the field of fish ecology.</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>					
3	<b>Contents of the module</b> <ul style="list-style-type: none"> <li>• Current topics in Ecology of marine and freshwater fish (esp. spatial and temporal aspects of ecology; incl. excursions)</li> <li>• Fish behaviour</li> <li>• Variety of fishing methods</li> <li>• Methods for field experiments</li> <li>• Analysis of juvenile fish</li> <li>• Accomplishment and analysis of field data</li> </ul>					
4	<b>Teaching/Learning methods</b> <ul style="list-style-type: none"> <li>• Lectures; Practical/Lab (Project work); Seminar; Excursions; Guidance to independent research; Training on presentation techniques in oral and written form</li> </ul>					
5	<b>Requirements for participation</b> Enrollment in the Master´s degree course "Biological Sciences" <b>Additionally recommended:</b> Knowledge of fundamental ecological principles is indispensable to participate in this module. In cases of doubt, please contact the module coordinator (see 10) before choosing this subject module.					

*Ecology of Freshwater Fish (MN-B-SM [E 5]) continued*

6	<p><b>Type of module examinations</b></p> <p>The final examination consists of three parts: Two hours written examination about topics of the lectures and the practical/lab part (50 % of the total module mark), oral presentation (25 % of the total module mark) and seminar paper (25 % of the total module mark)</p>
7	<p><b>Requisites for the allocation of credits</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>Significance of the module mark for the overall grade</b></p> <p>15 % of the overall grade (see also appendix of the examination regulations)</p>
10	<p><b>Module coordinator</b></p> <p>Prof. Dr. Jost Borchering, phone 02851-8575, e-mail: jost.borchering@uni-koeln.de</p>
11	<p><b>Additional information</b></p> <p><b>Subject module</b> of the Master´s degree course "Biological Sciences", <b>Focus of research:</b> (E) Ecology and Evolution</p> <p><b>Participating faculty:</b> Prof. Dr. J. Borchering, PD Dr. K. Heubel</p> <p><b>Location:</b> The whole module will be held either at the Ecological Research Station Rees, Grietherbusch 3a, D-46459 Rees Grietherbusch, Germany, or at the Research and Technology Centre (FTZ), Kiel University, Hafentörn 1, 25761 Büsum, Germany</p> <p><b>Literature:</b></p> <ul style="list-style-type: none"> <li>• Mittelbach, G. (2012) Community Ecology. Sinauer Associates</li> <li>• Knisely, K. (2013) A Student Handbook for Writing in Biology. 4<sup>th</sup> edition. Sinauer Associates</li> <li>• Begon, M., Townsend, C.R., Harper, J.L. (2005) Ecology: From Individuals to Ecosystems. 4<sup>th</sup> edition, Blackwell</li> <li>• Gotelli, N.J., Ellison, A.M. (2013) A Primer of Ecological Statistics. 2<sup>nd</sup> edition. Sinauer Associates</li> <li>• Additional reviews and original papers will be handed out during the module</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) as well as writing seminar paper; 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 the field and in research laboratories. The module does not contain computer-based practicals/research as a main component.</p> <p><b>Introduction to the module:</b> May 19, 2020 at 10:30 a.m., Cologne Biocenter, room 1.109 (first floor)</p> <p><b>Written examination:</b> July 17, 2020, second/supplementary examination August 28, 2020; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.</p>