

Module name: Ecology of Freshwater Fish

Identification number MN-B-E 5	Workload 360 h	Credits 12	Term of studying* 1 st or 2 nd term of studying	Frequency of occurrence Summer term, 2 nd half	Duration** 7 weeks
1	Type of lessons a) Lectures (L) b) Practical/Lab (P) c) Seminar (S)	Contact times*** a) 22 h b) 155 h c) 3 h	Self-study times 180 h (Preparing and reworking matters of L and P; Writing of a review)	Intended group size a) 6 students b) 6 students / supervising tutor c) 6 students / supervising tutor	
2	Learning outcomes / Skills Students who successfully completed this module will have acquired advanced knowledge regarding the ecology of freshwater fish with special emphasizes on spatial and temporal aspects of population dynamics. Furthermore, they will be familiar with species interactions with special emphasis on modern aspects of population ecology in fish communities. To achieve these aims, principles of ecology will be illustrated by a combination of field experiments and enclosures/lab experiments. In addition, students will have acquired knowledge about ecological characteristics of different habitats (lotic and lentic). Students will be trained to evaluate and understand the scientific literature in specific fields of contemporary ecological research and will improved their skills in presenting scientific literature in oral and written form.				
3	Contents Main topics: <ul style="list-style-type: none"> • ecology of freshwater fish (esp. spatial and temporal aspects of ecology; incl. excursions) • methods in fish ecology, including different fishing methods and methods for field experiments • soft skills: experimental design, advanced analysis writing of scientific papers, incl. literature search, oral presentations, statistics 				
4	Teaching methods Lectures; Seminar; Guidance to independent scientific research; Excursions; Training on presentation techniques in oral and written form				
5	Requirements for participation Bachelor; enrollment in the Master´s degree course “Biological Sciences” (see examination regulations for details) Additionally: Knowledge of fundamental ecological principles is indispensable to participate in this module.				
6	Type of examinations Exam prerequisites: Regular and active participation Exams: One hour written examination about topics of the lectures and practical part (accounts for 50 % of the total module mark), literature review (15-20 pages, accounts for 25 % of the total module mark) and oral presentation about a selected topic in the field of ecology of freshwater fish (10-15 min + discussion, accounts for 25 % of the total module mark) See also remark under Additional information (11) for students beginning the degree course before winter term 2013/2014.				

7	<p>Requisites for the allocation of credits</p> <p>Total module mark at least "adequate" (see § 10 of the examination regulations for details)</p>
8	<p>Compatibility with other Curricula</p> <p>None</p>
9	<p>Significance of the mark for the overall grade</p> <p>In the Master's degree course "Biological Sciences": 15 % of the overall grade (see appendix 2 of the examination regulations)</p>
10	<p>Module coordinator and Participating faculty</p> <p>Module coordinator: PD Dr. J. Borcharding, phone 02851-8575, e-mail: jost.borcharding@uni-koeln.de</p>
11	<p>Additional information</p> <ul style="list-style-type: none"> - Subject module of the Master's degree course "Biological Sciences" - Focus of research: (E) Ecology and Evolution - Literature: (i) Mittelbach, G. (2012) Community Ecology. Sinauer Associates; (ii) Knisely, K. (2013) A Student Handbook for Writing in Biology. 4th edition. Sinauer Associates; (iii) Begon, M., Townsend, C.R., Harper, J.L. (2005) Ecology: From Individuals to Ecosystems. 4th edition, Blackwell; (iv) Gotelli, N.J., Ellison, A.M. (2013) A Primer of Ecological Statistics. 2nd edition. Sinauer Associates - Additional reviews and original papers will be handed out during the module. - General time schedule: Week 1-6 (Mon.-Fri.): Lectures, seminar and practical work; Week 7 (Mon.-Fri.): Preparation for the written examination - Attention: Students who have enrolled in the MSc Biological Sciences before winter term 2013/2014 and who want to continue in the old frame of the degree course scheme (<i>i.e.</i> 15 CP per subject module) have to write an additional essay of 8-12 pages. This essay is assessed as "passed" or "failed" and does not account to the total module mark. - Introduction to the module: May 26, 2014 at 10 a.m., Zoological Institute of the University of Cologne, Ecological Field Station Grietherbusch, D-46459 Rees Grietherbusch, Germany - Written examination: July 18, 2014; more details will be given at the beginning of the module

* According to the course schedule (see appendix 2 of the examination regulations)

** Preparation times before the official start of the module are not included here.

*** All decimal numbers were rounded. The values correspond to the effective contact times over the total duration of the module (including examination times).