Module Name
Neural Function II: Analyzing the Neural Underpinning of Behavior – from Structure to Function to Behavior

Type of Module	Module Code
o Advanced Module	Neural Function II

Identification Number	Workload	Credit Points	Term	Offered Every	Start	Duration
MN-B-SM (N 4)	360 h	12 CP	2nd term of studying	Summer term, 2nd half	Summer term only	7 weeks

1	Course Types	Contact Time	Private Study
	a) Lectures	16 h	44 h
	b) Practical/Lab	100 h	160 h
	c) Seminar	10 h	30 h

2	Module Objectives and Skills to be Acquired
	Students who successfully completed this module
	• have acquired detailed knowledge about concepts and experimental approaches in the analysis of behavior and its neural basis
	• are able to perform preparations and techniques to study neural network function, and rhythmic motor behavior in different model systems (see contents of the module).
	• are able to independently design and perform small scientific projects related to topics of the module.
	• are able to analyze data, e.g. by using the programming language Matlab, the Spike2 software package or software for anatomical analysis.
	• 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.
	• are able to transfer skills acquired in this module to other fields of biology.

3	Module Content
	• Analysis of motor behavior in arthropods (e.g. cockroach, locust, fruit fly and stick insect)
	• Techniques in monitoring and recording motor behavior in different insect model systems
	• Behavioral and electrophysiological analysis of neuronal network performance
	• Data analysis with Matlab

4	Teaching Methods
	• Lectures; Practical/Lab (Project work); Seminar; Guidance to independent research; Training on presentation techniques in oral and written form

5	**Prerequisites (for the Module)**
	Enrollment in the Master's of Science degree course "Neuroscience" or in the Master's degree course "Experimental and Clinical Neuroscience"
	Additional academic requirements
	Previous attendance of the lecture module Neuroscience
6	**Type of Examination**
	The final examination consists of two parts: Oral presentation (20-30 min; 50 % of the total module mark), written report (50 % of the total module mark)
7	**Credits Awarded**
	Regular and active participation; Each examination part at least "sufficient" (see appendix of the examination regulations for details)
8	**Compatibility with other Curricula***
	Optional compulsory module in the Master's degree course "Experimental and Clinical Neuroscience"
9	**Proportion of Final Grade**
	12.0 %
10	**Module Coordinator**
	Prof. Dr. Ansgar Büschges, phone 470 2607, e-mail: ansgar.bueschges@uni-koeln.de
11	**Further Information**
	Participating faculty: Prof. Dr. A. Büschges, Dr. N. Deisig, Dr. G. di Cristina, Dr. E.A. Gorostiza, Dr. M. Gruhn, Prof. Dr. G. Gatto, Dr. S. Valtcheva, Prof. Dr. M. Nawrot, guests
	Literature:
	• Information about textbooks and other reading material will be given on the ILIAS platform of the course
	General time schedule: Week 1-6 (Mon.-Fri.): Lectures, practical/lab, analysis of self-acquired data, preparation of writing written report; Week 7 (Mon.-Fri.): Preparation for the oral presentation and completing of the written report
	Note: The module contains hands-on laboratory work conducted individually and is taught in research laboratories. The module does not contain computer-based practicals/research as a main component.
	Introduction to the module: June 03, 2024 at 10:00 a.m., Cologne Biocenter, room 1.007 (first floor) or online (in this case, further information/link will be sent to your Smail-Account); for preparation to the module before this introduction see ILIAS link under literature.
	Oral or written examination: July 18, 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.