

Module Name Drosophila Neurobiology: From genes to neuronal circuits to behaviour						
Type of Module ○ Advanced Module				Module Code Neurobiology in <i>Drosophila</i>		
Identification Number MN-B-SM (N 2)	Workload 360 h	Credit Points 12 CP	Term 2 nd term of studying	Offered Every Summer term, 1 st half	Start Summer term only	Duration 7 weeks
1	Course Types a) Lectures b) Practical/Lab c) Seminar		Contact Time 24 h 150 h 7 h		Private Study 50 h 99 h 30 h	
2	Module Objectives and Skills to be Acquired Students who successfully completed this module <ul style="list-style-type: none"> • will have gained a general understanding of neural cells and their function. • achieved basic understanding of the relationship between anatomy and function in the <i>Drosophila</i> brain. • gained insights into neuron-glia interaction and how this controls behavior. • learned state-of-the-art techniques in neurobiology. • learned how to address neurobiological questions experimentally and plan experiments. • gained insights in data evaluation, statistical methods and data management. • 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 <ul style="list-style-type: none"> • From genes to behavior: concepts of neurogenesis, neural function, and circuit formation • Molecular neurobiology • Staining methods, immunohistochemistry, state-of-the-art microscopy techniques and bio-informatic image processing methods • Basic and advanced methods in cell and molecular biology and protein biochemistry • Behavioral assays of larval and/or adult locomotion in flies • Basic and advanced <i>Drosophila</i> genetics • Scientific writing (grant proposal, paper) and presentation (oral, seminar, poster) 					
4	Teaching Methods <ul style="list-style-type: none"> • Lectures; Practical/Lab (Project work); Seminars; Guidance to independent research; Training on presentation techniques in oral and written form; Training on paper/grant writing 					

5	<p>Prerequisites (for the Module)</p> <p>Enrollment in the Master's of Science degree course "Neuroscience" or in the Master's degree course "Experimental and Clinical Neuroscience"</p> <p>Additional academic requirements</p> <p>Previous attendance of the lecture module Neuroscience</p>
6	<p>Type of Examination</p> <p>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)</p>
7	<p>Credits Awarded</p> <p>Regular and active participation; Each examination part at least "sufficient" (see appendix of the examination regulations for details)</p>
8	<p>Compatibility with other Curricula</p> <p>Optional compulsory module in the Master's degree course "Experimental and Clinical Neuroscience"</p>
9	<p>Proportion of Final Grade</p> <p>12.0 %</p>
10	<p>Module Coordinator</p> <p>Prof. Dr. Kei Ito, phone 470 5617, e-mail: k.ito@uni-koeln.de</p>
11	<p>Further Information</p> <p>Participating faculty: PD Dr. B. Altenhein, Dr. J. Zhang, Dr. H. Jones, Prof. Dr. K. Ito, Dr. T. Riemensperger, Prof. Dr. H. Scholz</p> <p>Literature:</p> <ul style="list-style-type: none"> • Information on recommended textbooks and other reading material will be given on the ILIAS representation of the course (see https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html) <p>General time schedule: Week 1 (Mon.-Fri., from 9 a.m. to 5 p.m.): Seminars, lectures, introduction to paper/grant writing and practice; Week 2-6 (Mon.-Fri., from 9 a.m. to 5 p.m.): Practical/lab; Week 7 (Mon.-Fri.): Preparation for the oral presentation and completing of the written report</p> <p>Note: The module contains hand-on laboratory work conducted individually and is taught in research laboratories. The module does not contain computer-based practicals/research as a main component.</p> <p>Introduction to the module: April 8, 2026 at 10 a.m., Cologne Biocenter, room 2.009 (second 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.</p> <p>Oral examination: June 05, 2026, second/supplementary examination August 14, 2026; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.</p>