

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

5	<p><b>Prerequisites (for the Module)</b></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><b>Additional academic requirements</b></p> <p>Previous attendance of the lecture module Neuroscience</p>
6	<p><b>Type of Examination</b></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><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>Optional compulsory module in the Master's degree course "Experimental and Clinical Neuroscience"</p>
9	<p><b>Proportion of Final Grade</b></p> <p>12.0 %</p>
10	<p><b>Module Coordinator</b></p> <p>Dr. Thomas Riemensperger, phone 470 76283, e-mail: triemens@uni-koeln.de</p>
11	<p><b>Further Information</b></p> <p><b>Participating faculty:</b> PD Dr. B. Altenhein, Dr. E. Erhardt, Dr. J. Zhang, Dr. H. Jones, Prof. Dr. K. Ito, Dr. T. Riemensperger, Prof. Dr. H. Scholz</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 (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><b>Note:</b> 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><b>Introduction to the module:</b> March 29th, 2024 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><b>Oral examination:</b> May 31, 2024, second/supplementary examination August 02, 2024; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.</p>