| Neurobiology in *Drosophila* | | | | | |
|---|---|---|---|---|---|
| Identification number | Workload | Credit points | Term of studying | Frequency of occurence | Duration |
| MN-B-SM (N 2) | 360 h | 12 CP | 1st or 2nd term of studying | Summer term, 1st half | 7 weeks |

| 1 | Type of lessons | Contact times | Self-study times | Intended group size |
|---|---|---|---|---|
| | a) Lectures | 24 h | 50 h | max. 9 |
| | b) Practical/Lab | 150 h | 99 h | max. 9 |
| | c) Seminar | 7 h | 30 h | max. 9 |

**2 Aims of the module and acquired skills**

Students who successfully complete this module …

- will have gained a general understanding of neural cells and their function
- achieved basic understanding of the relationship between anatomy and function in the *Drosophila* brain
- gained insights into neuron-glia interaction and how this controls behaviour
- 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 Contents of the module**

- 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
- Behavioural assays of larval and/or adult locomotion in flies
- Basic and advanced *Drosophila* genetics
- Scientific writing (grant proposal, paper) and presentation (oral, seminar, poster)

**4 Teaching/Learning methods**

- 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 Requirements for participation**

Enrollment in the Master´s degree course “Biological Sciences”

**6 Type of module examinations**

The final examination consists of three parts: 30 min oral examination on topics of lectures, seminars and the practical/lab part (50 % of the total module mark), oral presentation (25 % of the total module mark), and seminar paper in form of a poster (25 % of the total module mark)

| | |
|---|---|
| 7 | Requisites for the allocation of credits<br>Regular and active participation;<br>Each examination part at least "sufficient" (see appendix of the examination regulations for details) |
| 8 | Compatibility with other Curricula<br>None |
| 9 | Significance of the module mark for the overall grade<br>15 % of the overall grade (see also appendix of the examination regulations) |
| 10 | Module coordinator<br>Dr. Thomas Riemensperger, phone 470-76283, e-mail: triemens@uni-koeln.de |
| 11 | Additional information<br>Subject module of the Master´s degree course "Biological Sciences",<br>Specialization: (N) Neurobiology: Genes, Circuits, and Behavior<br>Participating faculty: PD Dr. B. Altenhein, Dr. E. Erhardt, Prof. Dr. K. Ito, Dr. T. Riemensperger, Prof. Dr. H. Scholz<br>Literature:<br>• Information about textbooks and other reading material will be given on the ILIAS representation of the course (https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html)<br>General time schedule: Week 1 (Mon.-Fri., 9 a.m. - 5 p.m.): Seminars, lectures, introduction to paper/grant writing, practice; Week 2-6 (Mon.-Fri., 9 a.m. - 5 p.m.): practical/lab; Week 7 (Mon.-Fri.): Preparation for the oral examination and final presentation<br>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.<br>Introduction to the module: April 08, 2021 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.<br>Oral examination: May 31, 2021, second/supplementary examination August 06, 2021; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module. |

Corona note! Depending on the Corona situation during the summer term, practical work may be skipped either totally or in part. In this case, some or all practical parts will be replaced by adequate alternatives so that (i) the workload and (ii) the principle content of the modules remained unchanged.