Course title: Animal models in neuroscientific research				
Identification number M-Neuro-AM10 a-b	**Workload** 270h	**Credits** 9	**Frequency of occurrence** WS/SS	**Duration** Two semesters

1	**Type of lessons** a) lecture b) practice	**Contact times** a) 42h b) 28h	**Self-study times** 170h (Preparation and post-processing of lectures, practical and exam)	**Intended group size** a) ca. 7 students b) ca. 7 students per supervisor

2	**Aims of the module and acquired skills** **Phenotyping of mouse mutants: Learning and memory** - The topic of this course is related to the main principles of animal behavior models in neuroscience. Students have to learn how behavioral testing is done in experimental animals and which test models are available for the reliable and valid testing of learning and memory functions. - Students need to acquire knowledge, related to the various limitations of unimodal testing of behavior in experimental animals. Also, the limitations of animal models will be discussed. - Extra- + intracellular derivation techniques in vivo + in vitro **Phenotyping of mouse mutants: Morphology** - Using selected examples, the students will learn how the real analysis of a mouse mutant would be compared to the wild type with regard to the CNS.
3	**Contents of the module** - <u>Phenotyping of mouse mutants: Learning and memory</u> - Various aspects of behavioral models: - Anxiety - Depression - Locomotor activity - Learning and memory tests - <u>Phenotyping of mouse mutants: Morphology</u> - Comparative anatomy and histology of selected mouse mutants
4	**Teaching/Learning Methods** Seminar format; instruction for independent practical work, presentation
5	**Requirements for participation** Enrollment in the Master's degree course "Experimental and Clinical Neurosciences" at the University of Cologne Content: Basic knowledge in biology, neuroanatomy and neurophysiology is desirable.
6	**Type of module examination** **Preliminary Examinations:** Regular participation and active cooperation, sufficient preparation for the topics **Final examination**: one-sided writing of the module content, practice evaluation
7	**Requirement for the allocation of credits** Successful practice evaluation and paper
8	**Compatibility with other Curricula** none
9	**Significance of the module mark for the overall grade** In the Master´s degree course "Experimental and Clinical Neurosciences": 9% of the overall grade (see also appendix of the examination regulations)

10	**Module coordinator**
	Teaching coordinator: Univ.-Prof. Dr. Hannsjörg Schröder, Tel. 5209, schroeder.anatomie@uni-koeln.de
	Teachers: Dr. A. Blokland, Universiteit Maastricht, Univ.-Prof. Dr. H. Schröder
11	**Additional information**
	Literature:
	- Basso DM, Beattie MS, Bresnahan JC: A sensitive and reliable locomotor rating scale for open field testing in rats. J Neurotrauma 1992 9:S129-133 - Crusio and Gerlai: Handbook of molecular-genetic techniques for brain and behavior research - Paxinos G, Franklin K: Mouse Brain in Stereotaxic Coordinates Academic Press - Watson C, Paxinos G, Puelles L, The Mouse Nervous System, Academic Press