

Course Title: Neurosurgical aspects in neuroscientific systems				
Identification number	Workload	Credit points	Frequency of occurrence	Duration
M-Neuro-AM 16a-b	180 h	6	WS	One semester
1	Type of lessons a) Lecture b) Technical/case presentation c) Problem-oriented learning (POL) d) Real-life-observation	Contact times a) 24 h b) 8 h c) 4 h d) 12 h	Self-study times 132 h (Preparation and post-processing of lectures, practical and exam)	Intended group size a) max 6
2	Aims of the module and acquired skills Aim: To impart basic aspects of neuroanatomy and pathophysiological conditions (e.g. neurodegeneration, malformation, tumor) in the context of clinical neurosurgery Skills: <ul style="list-style-type: none"> • transfer of neuroanatomical and functional aspects on disease-related symptoms • basic insight in clinically relevant technical aids and their scientific challenges • understanding the relevance of these aspects for clinical decision making 			
3	Contents of the module <ul style="list-style-type: none"> • Clinical functional neuro-anatomy • Basic systems (Motor and sensory, cognition and language, visual and acoustic, connectome/networks) • Scientific aspects (cognition and language, neoplasia, connectome/networks, radiomics) • Technical presentations (neuronavigation, intraoperative neuro-monitoring, brain mapping, deep brain stimulation planning, pre-operative imaging) • Pathological conditions (neurodegenerative, dysraphia/cerebral malformations, traumatic brain injury, neoplasia) • Real-life clinical: surgery attendance (spinal malformation, brain tumor, deep brain stimulation) 			
4	Teaching/Learning Methods Lectures Problem oriented learning on the base of clinical cases Demonstration and hands-on training TMS, navigation and DBS planning			
5	Requirements for Participation Enrollment in the Master's degree course "Experimental and Clinical Neurosciences" at the University of Cologne			

6	<p>Type of module examination</p> <p>Project presentation. Topic assignment at start, mentoring throughout the course.</p>
7	<p>Requirement for the allocation of credits</p> <p>Module attendance with a maximum absence in two events and successful module examination. Real-life events: attendance is optional</p>
8	<p>Compatibility with other Curricula</p> <p>None</p>
9	<p>Significance of the module mark for the overall grade</p> <p>In the Master's degree course "Experimental and Clinical Neurosciences": 6 % of the overall grade (see also appendix of the examination regulations)</p>
10	<p>Module coordinator: Volker Neuschmelting</p> <p>Lecturing tutors: Prof. Dr. Maximilian Ruge, Priv. Doz. Dr. Heidrun Bächli, Priv. Doz. Dr. Stefan Grau, Priv. Doz. Dr. Carolin Weiss Lucas, Dr. Marco Timmer, Dr. Stephanie Jünger, Dr. Anna-Katharina Meissner, Dr. David Reinecke, Dr. Niklas von Spreckelsen, Dr. Julia Pieczewski, Dr. Pablo Andrade Montemayor Dir. Charlotte Nettekoven, Ricardo Loucau</p>
11	<p>Additional Information</p> <p>Lectures and POL sessions are scheduled as one day/week throughout the semester. Technical presentations may be scheduled in accordance with the participants. Real-life sessions depend on the clinical case load and are timed depending on availability</p> <p>Locations: Lectures/POL Sessions: LFI building, large conference room (room No. 2.048). Technical presentations: OR/TMS Lab/Neurophysiology Lab Real-life: OR</p> <p>Literature: Current literature will be announced in class.</p>

