

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

6	<p><b>Type of module examination</b></p> <p>Project presentation. Topic assignment at start, mentoring throughout the course.</p>
7	<p><b>Requirement for the allocation of credits</b></p> <p>Module attendance with a maximum absence in two events and successful module examination. Real-life events: attendance is optional</p>
8	<p><b>Compatibility with other Curricula</b></p> <p>None</p>
9	<p><b>Significance of the module mark for the overall grade</b></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><b>Module coordinator:</b> Priv. Doz. Dr. Stefan Grau</p> <p><b>Lecturing tutors:</b> 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><b>Additional Information</b></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><b>Literature:</b> Current literature will be announced in class.</p>

