

Course title: Sensory Systems				
Identification number	Workload	Credits	Frequency of occurrence	Duration
M-Neuro-AM8 a-e	180h	6	WS	1 Semester
1	Type of lessons a) lecture b) exercises	Contact times a) 16 h b) 16 h	Self-study times 148h (Preparation and post-processing of lectures, practical and exam)	Intended group size a) 8 students b) 4 students/advisor
2	Aims of the module and acquired skills This module aims to provide a deep insight into the biological basics of peripheral and central auditory processing which allows to understand the psychophysical performance and pathophysiological changes in hearing. The students become familiar with subjective and objective hearing test procedures that are applied in the clinical context for a hearing diagnosis. In addition to theoretical lessons, practical sessions allow the students to gain a versatile insight into the diagnosis and therapy of hearing disorders.			
3	Contents of the module This module is about normal and disturbed peripheral and central hearing processes, including sensory, neurophysiological and psychophysical aspects. The theoretical knowledge is deepened by practical sessions in small groups. The students discuss clinical cases and perform subjective and objective hearing test methods, including pure-tone audiometry, speech audiometry and the registration of otoacoustic emissions. In addition, the students apply electrophysiological techniques to record different types of auditory evoked potentials (brainstem and auditory-cortex responses).			
4	Teaching/Learning Methods Seminar; instructions for independent practical work; specialist presentation, case studies			
5	Requirements for participation Enrollment in the Master's degree course "Experimental and Clinical Neurosciences" at the University of Cologne Content: Basic knowledge of anatomy, physiology and pathophysiology of the peripheral and central auditory system. Basic knowledge of sensory and neurophysiology as well as psychophysics.			
6	Type of module examination Preliminary Examinations: Regular participation and active collaboration Final examination: Paper			
7	Requirement for the allocation of credits Successful submission of the paper			
8	Compatibility with other Curricula no			
9	Significance of the module mark for the overall grade In the Master's degree course "Experimental and Clinical Neurosciences": 6 % of the overall grade (see also appendix of the examination regulations)			

10	<p>Module coordinator and teacher</p> <p>Module coordinator: Prof. Dr. rer. medic. Hartmut Meister, hartmut.meister@uni-koeln.de</p> <p>Teacher: Prof. Dr. rer. medic. Hartmut Meister (Jean Uhrmacher Institute), hartmut.meister@uni-koeln.de Prof. Dr. rer. nat. Martin Walger, martin.walger@uk-koeln.de Dr. rer. nat. Irina Schierholz, irina.schierholz@uk-koeln.de</p>
11	<p>Additional information</p> <p>Literature for interested students:</p> <ul style="list-style-type: none"> • Hoth, S., Mühler, R., Neumann, K., & Walger, M. (2015). <i>Objektive Audiometrie im Kindesalter</i>. Springer-Verlag. • Kießling, J., Kollmeier, B., Baumann, U. (2018). <i>Versorgung mit Hörgeräten und Hörimplantaten</i>. Georg Thieme Verlag, Stuttgart, New York • Mrowinski, D., Scholz, G., Stefens, T. (2017). <i>Audiometrie: Eine Anleitung für die praktische Hörprüfung</i> (5. Auflage). Thieme Stuttgart. • Pape, H. C., & Kurtz, A. & Silbernagl, S. (2019). <i>Physiologie</i> (9. Auflage). Thieme Stuttgart. • Picton T (2010). <i>Human Auditory Evoked Potentials</i>. Plural Publishing • Probst, R., Grevers, G., Iro, H. (2018). <i>Basic Otorhinolaryngology</i> (2. Auflage). Georg Thieme Verlag.