

<b>Module title</b>		<b>Abbreviation</b>
Developmental Neuroimaging		03-TN-DI-172-m01
<b>Module coordinator</b>		<b>Module offered by</b>
University Hospital, Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy		Faculty of Medicine
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
5	numerical grade	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	graduate	--
<b>Contents</b>		
<p>Students will get an introduction to basic physics of MRI, in particular the functional MRI signal (so called BOLD response). Different fMRI designs, block vs. event, will be introduced. Students will learn to critically evaluate such design differences. The basic steps for preprocessing fMRI data will be introduced and practiced. Using example data of a block and event design, there will be an introduction and practice session on how to implement a statistical model of task-based fMRI data. Students will give presentation on the topics based on state-of-the-art textbooks and research articles or implement analysis code. The course requires the students to use Statistical Parametric Mapping software in Matlab. Previous experience in Matlab is not required but beneficial.</p>		
<b>Intended learning outcomes</b>		
<p>Students who successfully completed this module will have acquired insights into the basics principles of functional and structural MRI data collection as well as how to perform data preprocessing and principles of statistical analysis. Behavioral data from an experiment conducted during functional MRI will be analyzed and implemented into the statistical analysis of brain activation of controls and patients. As an outlook, we will touch on opportunities of informing such analysis by computational modeling.</p>		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
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<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
<p>a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (approx. 10 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or e) presentation (20 to 45 minutes) Language of assessment: English</p>		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
150 h		
<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
<p>Master's degree (1 major) Translational Neuroscience (2017) Master's degree (1 major) Translational Neuroscience (2018) Supplementary course Translational Neuroscience (2018) Master's degree (1 major) Translational Neuroscience (2022) Supplementary course Translational Neuroscience (2022)</p>		

