

<b>Module Number</b> <b>4a</b>	<b>Title:</b> <b>Experimental and Translational Neuroimaging</b>		
<b>Module type:</b> compulsory elective	<b>Language:</b> English	<b>Group Size:</b> 6 students	
<b>Study semester:</b> 2	<b>Availability:</b> summer semester		<b>Duration:</b> 1 semester
<b>Workload:</b> 240 hrs	<b>Credits:</b> 8 CP	<b>Contact time:</b> 75 hrs	<b>Independent Study:</b> 165 hrs
<b>1</b>	<b>Courses</b> a) Lecture 2 PPW b) Seminar: 1 PPW c) Practical block course: 3 PPW		
<b>2</b>	<b>Intended Learning Outcomes</b> Upon completion of this module the students are capable to describe how neuroscientific questions can be adequately addressed by neuroimaging techniques and to identify the appropriate imaging technique for a specific question. The students will be able to apply commonly used neuroimaging techniques in biomedical research with regard to human and animal studies. After attending the seminar the students will be capable to describe the regulatory and ethical prerequisites for clinical and experimental studies and fundamental principles of neuroimaging techniques.		
<b>3</b>	<b>Content</b> The practical course will cover the main topics of design, application, performance and documentation of neuroimaging studies as part of clinical trials with respect to their use as primary trials for novel diagnostic methods or as secondary read-outs for the efficacy of a therapeutic candidate. The students will learn about the theoretical background of imaging techniques, mainly magnet resonance imaging (MRI) and positron emission tomography (PET) and radiation protection. Hands-on training in a representative set of practical experiments will reinforce the theoretically acquired knowledge.		
<b>4</b>	<b>Teaching methods</b> Block seminar and practical course		
<b>5</b>	<b>Prerequisites</b> <b>Formal:</b> Successful completion of module 1. Proficiency in English level B2 of Common European Framework of Reference for Languages (CEFR) <b>With regards to content:</b> Participants who have a demonstrable focus on the area of neurosciences.		
<b>6</b>	<b>Examination types</b> 1. Written exam (multiple-choice format, 63 minutes, 50% of total grade). 2. Oral presentation (e.g. Powerpoint) in seminar (15 minutes, 25% of total grade). 3. Oral presentation (e.g. Powerpoint) in seminar (15 minutes, 25% of total grade).		
<b>7</b>	<b>Requirements for award of credit points</b> Attendance of the seminar and active participation in the exercises and hands-on training session, oral presentation and delivery of protocol, passing the written examination		
<b>8</b>	<b>Module applicability (in other study courses)</b> The module is closely related to module 2a, 4c and 6.		
<b>9</b>	<b>Assessment</b> The mark given will contribute to the final grade in proper relation to its credits.		
<b>10</b>	<b>Module convenor and main lecturers</b> Prof. Dr. Andreas Bauer, Prof. Dr. David Elmenhorst, Dr. Ali Gordjinejad, Dr. Andreas Matusch, Dr. Simone Beer, Dr. Tina Kroll, Franziska Wedekind, PD. Dr. Masoud Tahmasian, PD Dr. Gerard Bischof, Dr. Henning Weis		
<b>11</b>	<b>Further information</b> Block seminar and practical course will be held at the Forschungszentrum Jülich. There will be a daily bus shuttle for participants between HHU and Forschungszentrum Jülich.		