

Module description: M.Sc. 'Sports Exercise and Human Performance'

<b>Title of Module</b>		Human Movement and Motion					
<b>Title of Module</b>		Bewegung des Menschen					
<b>Degree Program</b>		Sports, Exercise and Human Performance					
1	<b>Module Number:</b> M2	<b>Status:</b> <input checked="" type="checkbox"/> Mandatory Module <input type="checkbox"/> Elective Module					
2	<b>Frequency:</b> <input type="checkbox"/> every semester <input checked="" type="checkbox"/> every winter semester <input type="checkbox"/> every summer semester	<b>Duration:</b> <input checked="" type="checkbox"/> 1 semester <input type="checkbox"/> 2 semesters	<b>Semester:</b>  1	<b>CP:</b>  10	<b>Workload (h):</b>  300 h		
3	<b>Module Structure:</b>						
	<b>No.</b>	<b>Type</b>	<b>Course</b>	<b>Status (mandatory/elective)</b>	<b>CP</b>	<b>Attendance (h + SWS<sup>1</sup>)</b>	<b>Individual Study Time (h)</b>
	1.	S	Advanced Theories in Motor Control and Learning	<input checked="" type="checkbox"/> m <input type="checkbox"/> e	5	45 (3 SWS)	105
	2.	S	Biomechanics of Human Movement	<input checked="" type="checkbox"/> m <input type="checkbox"/> e	5	45 (3 SWS)	105
4	<p><b>Content of Module:</b></p> <p>First and foremost, a profound understanding of human movements and motions requires an in-depth biomechanical knowledge. However, motor control and learning are also concrete scientific fields of research, focusing on the mechanical characteristics of the human body, involving the active and passive locomotion system, which is linked to the cognitive neurosciences in order to provide and enable an advanced insight into the complex process of movements in physical activities and sports performances.</p> <p>The module teaches and discusses established, as well as recent theories of motor control and movement on the basis of their physiological principles within the sensorimotor system. Therefore, the essential physiological concepts are discussed and evaluated in light of their influence and interplay towards the process of motor learning.</p> <p>In addition to this, a profound understanding of theoretical and experimental analysis of human movements requires knowledge in biomechanics. Physical concepts of kinematic and dynamic analyses of motions are developed and imparted, since this basic knowledge is necessary to execute and perform reliable and accurate movement analyses. Finally, the theoretical concepts of human movements are consolidated through practical calculations and simulations.</p>						
5	<p><b>Learning Outcomes:</b></p> <p>The students deepen their basic knowledge of theories in movement sciences, involving theoretical concepts and experimental methodologies of biomechanics, as well as recent relevant theories about motor control and motor learning.</p> <p>In particular, students show abilities in kinematic analyses of human movement, in order to judge and interpret the resulting datasets and patterns of muscular activities (EMG). Students are supposed to transfer these results onto current research questions regarding human movements. By doing so, students show further abilities in identifying complex dynamic systems, human movements and use relevant methodologies and theories regarding kinematic and dynamic analysis.</p>						
6	<p><b>Options within the Module:</b></p> <p>None.</p>						
7	<p><b>Type of Examination:</b></p> <p><input checked="" type="checkbox"/> Final Module Examination <input type="checkbox"/> Module Examination <input type="checkbox"/> Course Examinations</p>						

8	<b>Degree-Relevant Examination(s):</b>	
	Number and form (e.g. written examination, oral examination); assigned to course no. <sup>2</sup> :	Duration or length
	Written Examination	90 min
		Weighting of grade for module grade in %
		100 %
<b>Required Coursework:</b>		
9	Number and form; assigned to course no.:	Duration or length
	Short but precise coursework assignments including preparation, execution and postprocessing of complete seminars are required. Possible coursework requirements are session protocols (1-2 pages) or written/oral assignments (approx. 10 pages/10-15 minutes). The depending type of coursework will be announced in advance to the session. Length and extent are oriented on the respective content. Max. 2 of the mentioned coursework requirements will be demanded per session, e.g., one protocol and one oral examination.	
<b>Requirements for Obtaining Credits (CP):</b>		
10	The credit points of the module are awarded when the entire module has been completed successfully, i.e. all degree-relevant examinations and all required coursework.	
<b>Weighting of Module Grade in Calculation of Final Overall Grade:</b>		
11	10 %	
<b>Admission to Module:</b>		
12	None.	
<b>Attendance:</b>		
13	No compulsory attendance.	
<b>This Module is also an Element of the Following Degree Programs:</b>		
14	None.	
<b>Module Coordinator:</b>		<b>Faculty:</b>
15	Prof. Dr. Heiko Wagner	FB07
<b>Additional Information:</b>		
16	-	