

M2 Human Movement and Motion

Degree Programme	M.Sc. Sports, Exercise and Human Performance
Module	Human Movement and Motion
Module Number	M2

1	Basic information
Semester	1.
Credit points (CP)	10
Workload (h) - total	300
Duration of module	1 semester
Status of module	mandatory Module

2	Profile
Objective of the module/integration into the curriculum	
<p>On the one hand, a sound understanding of human movement requires in-depth biomechanical knowledge. On the other hand, motor control and learning is a scientific discipline in which the mechanical properties of humans, including the active and passive musculoskeletal system, are combined with the findings of cognitive neuroscience to enable a sound understanding of the complex control of, in particular, athletic movements.</p>	
Content of Module	
<p>Classical and current theories of motor control of movements will be discussed, in particular the physiological basis of the sensorimotor system will be analyzed in depth. Based on these physiological relationships, the existing theories of motor control and motor learning can be critically discussed.</p>	
Learning outcomes	
<p>The students deepen their basic knowledge of theories of movement science, i.e. theoretical concepts and experimental methods in biomechanics as well as current theories of motor control and motor learning. In particular, students will be able to interpret, for example, a kinematic analysis of human movements and the resulting measurement data as well as muscular activations using the method of electro-myography. They transfer these findings to current research questions concerning human movement. By transferring this in-depth knowledge, current research results can be critically discussed and further research designs for specific problems can be developed. They recognize motor learning and the motor role of human movement as a complex dynamic system and use current methods of the theory of complex dynamic systems to analyze kinematic and dynamic data sets.</p>	

3 Module Structure						
Components of module						
No.	Course type		Course	Status (mandatory/ elective)	Workload (h)	
					Attendance (h)/SWS	Individual study time (h)
1	S		Advanced Theories in Motor Control and learning	m	(45) 3	60
2	S		Biomechanics of Human Movement	m	(45) 3	60
3	P		Inter-module self-study	m		90
Options within the Module						

4 Examination concept					
Degree-Relevant Examination(s)					
No.		Type	Duration/ Length	course no.	Weighting for Module Grade
1		Written Examination	120 min	1+2	100%
Weighting of Module Grade for Final Overall Grade			10%		
Required Coursework					
No.	Type			Duration/ Length	
1	Short and extensive coursework is required for preparation, realization and post-processing. Short and extensive coursework includes e.g. protocols (1-2 pages) and written/oral assignments (approx. 10 pages/10-15 minutes), poster presentation or written seminar paper. The depending type of coursework will be announced at the beginning of the seminar. Length and extent are oriented on the respective content. Max. 2 of the mentioned coursework requirements will be demanded per seminar, e.g., one protocol and one oral examination.				1
2	Short and extensive coursework is required for preparation, realization and post-processing. Short and extensive coursework includes e.g. protocols (1-2 pages) and written/oral assignments (approx. 10 pages/10-15 minutes), poster presentation or written seminar paper. The depending type of coursework will be announced at the beginning of the seminar. Length and extent are oriented on the respective content. Max. 2 of the mentioned coursework requirements will be demanded per seminar, e.g., one protocol and one oral examination.				2

5 CP - Distribution		
Attendance (= time of presentness)	LV No. 1	1,5 CP
	LV No. 2	1,5 CP
Degree-Relevant Examination(s)	PL No. 1	3 CP
Required Coursework	SL No. 1	2 CP
	SL No. 2	2 CP
Sum CP		10 CP

6 Requirements	
Module related participation requirements	none
Credit points	The credit points for the module are awarded if the module has been successfully completed overall, i.e. it has been demonstrated by passing all examinations and coursework that the learning outcomes assigned to the module have been acquired.
Attendance	In all courses, 100% participation is recommended. However, in the seminars, 80% attendance is necessary because personal guidance and feedback when handling data can only be given within class. Anyone who exceeds the number of permitted absences forfeits their right to take the examination.

7 Module offer		
Cycle/Timing	every WS	
Module Coordinator/Faculty	Prof. Dr. Heiko Wagner	FB 07

8 Mobility/Recognition	
Usability in other study programs	none
Module title	see title
English Translation of module component of field 3	are in English

9 Additional Information	