

Faculty	WWFIZ	Subject name	Motor learning and performance (WF/ISJ46)	
Field of study	Physical education	Study year/term	3/6	
Number of hours	30	ECTS points	6	
Subject type*	obligatory	Language	English	
Study level**	full-time	Subject form**	classes	
Preliminary and additional requirements (e.g. previous subjects)	No requirements.			
Subject objective	The aim of this subject is to prepare students to gain knowledge in the field of the theory of teaching and learning complex motor skills.			
SUBJECT LEARNING OUTCOMES (COURSE LEARNING OUTCOMES) after completing this subject, the student will be able to:				
Knowledge	S_K01. Students will know the basics of the structure and functioning of human organs. They will know how to define basic neurophysiological mechanisms of motor coordination (K_W01/P6U_W/P65_WG).			
	S_K02. Students will know theories and models of motor control. They will have general knowledge motor learning (K_W07/P6U_W/P65_WK_K_W10/P6U_W/P65_WG).			
	S_K03. They will know the means, methods and forms of education, teaching and learning in sports education. They will be able to discuss and select elements of didactic structure in the process of teaching (K_W07/P6U_W/P65_WK_K_W10/P6U_W/P65_WG, K_W26/P6U_W/P65_WG).			
Skills	S_S01. Students will possess the skill of applying the theory of teaching in the process of learning motor skills (K_U06/P6U_U/P65_UW_K_U17/P6U_U/P65_UO).			
	S_S02. Students will be able to perform motor skills and to create linear algorithms in particular phases of developing motor habits and applying methods, forms and means of teaching (K_U21/P6U_U/P65_UW_K_U22/P6U_U/P65_UW).			
	S_S03. Students will be able to perform a set of exercises, modify them in terms of complexity and difficulty as well as teach using different theories of teaching and learning motor skills (K_U21/P6U_U/P65_UW_K_U22/P6U_U/P65_UW).			
Social competences	S_SC01. When performing individual and team tasks, students are responsible for security and health of class participants. They reject activities that pose health and life risks (K_K08/P6U_K/P65_KO_K_K09/P6U_K/P65_KR).			
	S_SC02. Students take up activities connected with self-education independently. They are aware of their own limitations and know when to address their teacher (K_K07/P6U_K/P65_UK/P65_KR).			
Confirmation of achieved learning outcomes#	Continuous assessment, assessment of the execution of the acquired motor complex skills.			
Type of assessment mark##	Final assessment mark, support assessment mark.			
Content	Subject form (number of hours) ##	Subject learning outcomes	Course learning outcomes	
1. An introduction to the classes (learning outcomes, passing criteria, content).	classes (2)	S_K01, S_SC01, S_SC02	K_W01, K_K07, K_K08, K_K09	
2. Motor control and learning (definition of terms, origins of the field, key players and motor control landmarks, why study motor control?).	classes (2)	S_K01, S_K02, S_S01, S_SC02	K_W01, K_W07, K_W10, K_U06, K_U17, K_K07	
3. Classification of skills (definition of terms, task perspective skill classifications, classification from a performance proficiency perspective, movement terminology).	classes (2)	S_K01, S_K02, S_S01, S_SC02	K_W01, K_W07, K_W10, K_U06, K_U17, K_K07	
4. Measurement and assessment in motor learning and control (Outcome measures, performance measures, developing technologies, measuring learning).	classes (2)	S_K02, S_K03, S_S01, S_S02, S_SC01	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K08, K_K09	
5. Theories of learning and control (Reflex theories, hierarchical systems theories). Theories of learning and control (Dynamical systems theories).	classes (2)	S_K01, S_K02, S_S01, S_SC01	K_W01, K_W07, K_W10, K_U06, K_U17, K_K08, K_K09	
6. Theories of learning and control (Ecological theories, coordinative structure hypothesis).	classes (2)	S_K01, S_K02, S_S01, S_SC01	K_W01, K_W07, K_W10, K_U06, K_U17, K_K08, K_K09	
7. Information processing (Basic concepts, reaction time and movement time, simple, discriminative choice and recognition reaction time, factors affecting reaction time, movement time and Fitts' law).	classes (2)	S_K01, S_K02, S_S01, S_SC01	K_W01, K_W07, K_W10, K_U06, K_U17, K_K08, K_K09	
8. Sensory contributions to control (Proprioception and movement, the role of proprioception, exteroceptive information).	classes (2)	S_K01, S_K02, S_S01, S_SC02	K_W01, K_W07, K_W10, K_U06, K_U17, K_K07	
9. Theories of motor learning (Theories of motor learning, Adams' closed-loop theory).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC02	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K07	
10. Theories of motor learning (Schmidt's schema theory, dynamical systems theory).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC02	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K07	
11. Theories of motor learning (Ecological theory, The Fitts and Posner three-stage model).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC02	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K07	
12. Stages of motor learning (Bernstein's stage theory of motor learning, Gentile's two-stage model).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC02	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K07	
13. The role and function of feedback (Augmented feedback: what is it, what does it do and do we really need it?, Augmented feedback and learning skill, types of augmented feedback).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC01	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K08, K_K09	
14. The role and function of feedback (different forms of KR and KP, important considerations for giving augmented feedback, children and augmented feedback).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC02	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K07	
15. Final assessment (performance of practical task).	classes (2)	S_K02, S_K03, S_S01, S_S03, S_SC02	K_W07, K_W10, K_W26, K_U06, K_U17, K_U21, K_U22, K_K07	
Equipment	1. Projector, computer. 2. Balls, jumping rope, kettlebell.			
Passing criteria	1. Attendance and active participation in the classes. 2. Preparing a fragment of a lesson obtaining a positive mark in pedagogization.			
Exemplary exam (test) tasks	Model representing reflex theories of control (closed-loop control, open-loop control). Learning curves. Gentile's classification of skill showing the components of 16 categories.			
Literature	1. Adams J.A. (1971). A Closed Loop Theory of Motor Learning. In: Journal of Motor Behavior 3 p 116. 2. Chiviaczowsky, S., & Wulf, G. (2002). Self-controlled feedback: Does it enhance learning because performers get feedback when they need it? Research Quarterly for Exercise and Sport, 73, 408–415. 3. Cusella, L.P. (1987). Feedback, motivation, and performance. In F.M. Jablin, L. Putnam, K. H. Roberts, & L. W. Porter (Eds.), Handbook of organizational communication. An interdisciplinary perspective. pp.624-678. Newbury Park, CA: Sage. 4. Gentile, A. M. (1972). A Working Model of Skill Acquisition with Application to Teaching. Quest, 17(1), 3–23. 5. Gibson, J.J. (1979). The Ecological Approach to Visual Perception. Houghton Mifflin Company, Boston. 6. Kernodle, M. W., Johnson, R., Arnold, D. R. (2001). Verbal instruction for correcting errors versus such instructions plus videotape replay on learning the overhead throw. Perceptual & Motor Skills, 92, 1039–1051. 7. Magill R., Anderson D. (2014). Motor Learning and Control: Concepts and Applications. McGraw-Hill Publishing. 8. Schmidt, R.A. (1991) Motor Learning and Performance: From Principles to Practice. Human Kinetics, Champaign, IL. 9. Swinnen, S.P. (1996). Information feedback for motor skill learning: A review. In H.N. Zelaznik (Ed.), Advances in Motor Learning and Control (pp. 37–66). Human Kinetics, Champaign, IL. . 10. Utley A., Astill S. (2008). Motor control, learning and development. T&F, New York. 11. Wulf, G., Shea, J. B., Rice, M. (1996). Type of KR and KR frequency effects on motor learning. Journal of Human Movement Studies, 30, 1-18. 12. Wulf, G., & Shea, C. H. (2002). Principles derived from the study of simple skills do not generalize to complex skill learning. Psychonomic Bulletin & Review, 9(2), 185–211.			
ECTS points				
Number of hours with teacher (e.g. classes, office hours)		40		
Number of hours without teacher (e.g. homework)		110		
ECTS points in total		150/6		
Teacher (e-mail)		dr hab. prof. AWF Tomasz Niznikowski (tomasz.niznikowski@awf-lp.edu.pl)		

*obligatory, optional
**full-time, part-time, e-learning
***lectures, classes, laboratory classes, projects, workshops, classes conducted by students

continuous assessment (current preparation for classes), mid-term written test, mid-term oral test, final written test, final oral test, written exam, oral exam, assessment of motor skills, B.A/M.A. thesis, project realisation, attendance

final assessment mark, support assessment mark
lectures, classes, laboratory classes, projects, workshops, classes conducted by students