

## COURSE DESCRIPTION CARD – SPECIMEN

Institute of Biomedical Engineering									
Field of study	Biomedical Engineering							Degree level and programme type	Bachelor's degree/Master's degree/Doctoral degree
Specialization/ diploma path								Study profile	
Course name	Biomechanics							Course code	IS-FME-00149W
								Course type	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	winter
	15	15						No. of ECTS credits	3
Entry requirements	Human Anatomy								
Course objectives	Description of the assumed knowledge, skills and social competence the student should have acquired after the completion of the module: Presentation of the human musculoskeletal system. Explanation of the muscle action. Explanation of the human movement. Preparing for biomechanical studies of the musculoskeletal system in statics and during locomotion.								
Course content	Biomechanics of the musculoskeletal system. Muscle forces. Human locomotion.								
Teaching methods	depending on number of students enrolled: • lectures or classes: 1-8 students - self-study under supervision of a teacher; 9 and more students - lectures given by a teacher or classes with a teacher; laboratory classes: 1-2 students - 5 lab hours; 3 students - 8 lab hours; 4-5 students - 11 lab hours; 6-8 - 15 lab hours, 9 and more students - lab given by a teacher as regular classes								
Assessment method	Lecture – written exam, tests; classes – test, homework report								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
LO1	student describes a structure and functioning of the musculoskeletal system								
LO2	student knows the basic description of the human locomotion								
LO3	student calculates forces acting in the musculoskeletal system								
LO4	student determines the kinematic parameters of the gait								
LO5									
LO6									
Symbol of	Methods of assessing the learning outcomes							Type of tuition during	

learning outcome		which the outcome is assessed	
LO1	written exam, tests	L	
LO2	written exam, tests	L	
LO3	test, homework report	C	
LO4	test, homework report	C	
LO5			
LO6			
Student workload (in hours)		No. of hours	
Calculation	lecture attendance	15	
	participation in classes, laboratory classes, etc.	15	
	preparation for classes, laboratory classes, projects, seminars, etc.	15	
	working on projects, reports, etc.	15	
	participation in student-teacher sessions related to the classes/seminar/project		
	implementation of project tasks		
	preparation for and participation in exams/tests	15	
	<b>TOTAL:</b>	75	
Quantitative indicators		HOURS	No. of ECTS credits
<b>Student workload – activities that require direct teacher participation</b>			3
<b>Student workload – practical activities</b>		30	
<b>Basic references</b>	1. Ozkaya N., Nordin M., Goldsheyder D., Leger D: Fundamental of Biomechanics, Springer, 2012, 2. Knudson D.: Fundamentals of Biomechanics. Springer Science+Business Media, LLC, 2007, 3. Michael W. Whittle: Gait Analysis, An Introduction, Elsevier 2007		
<b>Supplementary references</b>			
<b>Organisational unit conducting the course</b>	Institute of Biomedical Engineering	<b>Date of issuing the programme</b>	
<b>Author of the programme</b>	Piszczatowski Szczepan, D.Sc, PhD, Eng.	24.03.2017	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar