



Subject card

Subject name and code	Engineering problems in surgery and orthopedics, PG_00064137						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2028/2029		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		Włodzimierz Żychliński				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		1.0		29.0	75
Subject objectives	Knowledge of the basics of orthopedics and traumatology in terms of human biomechanics.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K02] is aware of importance of professional dealing and to fulfill ethics obligations, he/she understands other (nontechnical) abilities of mechanical engineering professional, their influence on the society and security of environment, he/she is aware of importance of social cooperation		He ethically approaches the patient and his hardships of life in the personal and social aspect		[SK2] Assessment of progress of work [SK3] Assessment of ability to organize work		
	[K6_W01] has knowledge in the field of natural sciences, including mathematics, contemporary physics, chemistry, and human anatomy with physiology		Appropriately assesses the need for first aid, immobilization and assisted locomotion.		[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U08] is able to assess the human body physic and functioning of the body organs and is able to use medical knowledge to solve mechanical-medical problems in the scope of the study		Correctly evaluates the biomechanics of a healthy and sick person		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	Course content – lecture Issues of basic orthopedic diseases, multi-organ trauma, history of orthopedics, principles of operation of the operating block and sterilization room						
	Course content – laboratory Issues of basic orthopedic diseases, multi-organ trauma, history of orthopedics, principles of operation of the operating block and sterilization room						
Prerequisites and co-requisites	Knowledge of the anatomy of the musculoskeletal system and its biomechanics						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Test		51.0%		90.0%		
	Activity		100.0%		10.0%		

Recommended reading	Basic literature	Chirurgia Narządu Ruchu Tylman  Campbells Operative Orthopaedics  Choroby układu ruchu Anderson  Reumootropedia Sell
	Supplementary literature	Tom 2. Anatomii Człowieka Bochenek  Atlas Anatomii Netter  Anatomia i Fizjologia Człowieka Pituch
	eResources addresses	
Example issues/ example questions/ tasks being completed	History of orthopedics Anatomy of limbs, spine, Multiple organ trauma Osteoarthritis Construction and use of an orthopedic operating table Operating block, sterilization room	
Practical activities within the subject	Not applicable	

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