

GDAŃSK UNIVERSITY

Subject card

Subject name and code	Actuarial mathematics, PG_00055429								
Field of study	Mathematics								
Date of commencement of studies	October 2022		Academic year of realisation of subject			2022/2023			
Education level	second-cycle studies		Subject group			Optional subject group 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	1		Language of instruction			Polish			
Semester of study	2		ECTS credits			4.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Zakład Analizy Nielini	akład Analizy Nieliniowej -> Instytut Matematyki Stosowanej -> Faculty of Applied Physics and Mathematics						d Mathematics	
Name and surname	Subject supervisor		dr inż. Marcin Styborski						
of lecturer (lecturers)	Teachers		mgr Piotr Lebiedź						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	30.0	30.0	0.0	0.0		0.0	60	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	I didactic Participation in consultation hours		n Iours	Self-study		SUM	
	Number of study hours	60		5.0		35.0		100	
Subject objectives	The aim of the course is to familiarize students with the elementary problems of life insurance mathematics.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	К7_U08		The student uses Moivre, Weibull, Gompertz and exponential distributions in the calculation of insurance premiums and reserves.			[SU3] Assessment of ability to use knowledge gained from the subject			
	K7_W07		The student uses the basics of mathematical analysis and probability calculus to calculate net premiums and reserves.			[SW1] Assessment of factual knowledge			
	K7_W02		The student is able to solve selected problems related to insurance mathematics.			[SW1] Assessment of factual knowledge			
	K7_K02		The student presents a solution to the problem related to insurance mathematics. Can explain the significance of the assumptions of the model and discuss the tools used.			[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness			

Subject contents	During the classes, the following issues are discussed: Interest theory Cash flow Annuities Life tables Interpolation of life expectancy distributions Analytical demographic models Insurance policy Net premiums Practical exercises consisting in solving tasks are attached to the theoretical issues.						
Prerequisites	Basics of the probability theory (random variables and their characteristics).						
and co-requisites	4						
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Working in class	51.0%	30.0%				
	End-of-term project	51.0%	70.0%				
Recommended reading	Basic literature	 Błaszczyszyn B., Rolski T.: Pod życie. Wydawnictwo Naukowo- J. Czarnowska, K. Dziedziul, U ubezpieczenia komunikacyjne, 	n B., Rolski T.: Podstawy matematyki ubezpieczeń na wnictwo Naukowo-Techniczne, Warszawa 2004 ska, K. Dziedziul, Ubezpieczenia na życie i nia komunikacyjne, skrypt				
	Supplementary literature	 Gerber H.U.: Life insurance mathematics. Berlin, Heidelberg, New York: Springer-Verlag 1995. Skałba M.: Ubezpieczenia na życie. Wydawnictwa Naukowo- Techniczne, Warszawa 2003. 					
Example issues/ example questions/ tasks being completed							
Work placement	Not applicable						