



Subject card

Subject name and code	SCORING MODELS, PG_00062848						
Field of study	Economic Analytics						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2023/2024		
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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Błażej Kochański				
	Teachers		dr Błażej Kochański				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	0.0	0.0	30
	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	30		0.0		0.0	30
Subject objectives	The student is able to use scoring methods, e.g. to assess the credibility of a bank customer.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W10] has an in-depth knowledge of quantitative methods to describe and analyse socio-economic processes using information technology		The student identifies variables enabling the assessment of creditworthiness, their sources, and their predictive power. The student is able to assess the quality of the built model.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K7_U08] has the ability to implement analytical methods to independently propose solutions to economic problems and verify their effectiveness		The student presents the results of modeling using statistical methods and machine learning, making an in-depth interpretation of the obtained results.		[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment		
Subject contents	Terms: credit scoring, scoring card, creditworthiness, creditworthiness, risk assessment. Typology of bank scoring models. Data used in credit models. Credit information agencies. Selection of variables, binning, missing data. Good/bad customer, failure to repay (default), loss rate. Construction of scoring models: statistical tools and machine learning methods. Reject inference methods. The use of logistic regression in credit risk assessment. The use of classification trees. Assessment of the quality of scoring models: error table, ROC curve, Gini coefficient, KS, lift. Calibration of scoring models. Use of point assessment. Establishing cut-off points. Risk-based pricing. The process of building and implementing a scoring model, validation and monitoring. Development of banking scoring models - the latest trends.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Quizzes and calculation tasks		60.0%		50.0%		
	Project		60.0%		50.0%		

Recommended reading	Basic literature	Naeem Siddiqi Intelligent credit scoring: building and implementing better credit risk scorecards John Wiley & Sons, 2017. Raymond A. Anderson Credit intelligence & modelling: many paths through the forest Rayan Risk Analytics, Inc., 2019
	Supplementary literature	Lyn Thomas, Jonathan Crook, David Edelman Credit scoring and its applications Society for Industrial and Applied Mathematics, 2017 Mariola Kapla: O historii kredytowej i scoringu BIK ScoringExpert, 2019
	eResources addresses	Uzupełniające Adresy na platformie eNauczanie: Modele scoringowe 2024 - Moodle ID: 35335 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35335
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • Evaluate the discriminatory power of the model based on the data presented. • Build a logistic regression model using the indicated variables. • Determine the cut-off point for a scoring card with the given properties. • Assess the predictive power of individual features and their importance in the model. 	
Work placement	Not applicable	