GDAŃSK UNIVERSITY OF TECHNOLOGY

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, 2017Mariola 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	• 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	