COURSE DESCRIPTION CARD

Bialystok University of Technology **Faculty of Faculty of Engineering Management**									
Field of study	**Management**							**Degree level and programme type**	**first degree/ second degree**
Specialisation/ diploma path	**-**							**Study profile**	**-**
Course name	**Productivity analysis**							**Course code**	**IS-FM-00073W**
								Course type	**elective**
Forms and number of hours of educational activities	**L**	**C**	**LC**	**P**	**SW**	**FW**	**S**	**Semester**	**winter**
					30			**No. of ECTS credits**	**5**
Entry requirements	**-**								
Course objectives	The objective of the course is to familiarize students with methods of measuring productivity, with particular emphasis on the method of Data Envelopment Analysis (DEA)								
Course content	Definitions of productivity. Productivity measurement concepts. Review of productivity evaluation methods: Ratio Analysis, The Least-Squares Regression, Total Factor Productivity (TFP), Data Envelopment Analysis (DEA). Assumptions and applications of DEA in productivity evaluation. Productivity analysis using DEA and computer software.								
Teaching methods	presentation, discussion, case studies								
Assessment method	evaluation of the project, verification of preparation for classes								
Symbol of learning outcome	**Learning outcomes**								**Reference to the learning outcomes for the field of study**
	Knowledge: the graduate knows and understands								
LO1	Knows the basic concepts of productivity analysis								-
	Skills: the graduate is able to								
LO2	Conducts productivity analysis using Data Envelopment Analysis method and computer software								-
	Social competence: the graduate is ready to								
LO3	Is ready to work in a team, think and act creatively								-

Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO1	evaluation of the project, verification of preparation for classes	SW
LO2	evaluation of the project, verification of preparation for classes	SW
LO3	evaluation of the project, verification of preparation for classes	SW

Student workload (in hours)		No. of hours
Calculation	participation in specialization workshop	30
	working on project	60
	homework	40
	TOTAL:	130

Quantitative indicators	HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation	30	1.2
Student workload – practical activities	100	4

Basic references	1. Cook W.D., Zhu J., Data Envelopment Analysis: Modeling Operational Processes and Measuring Productivity, CreateSpace Independent Publishing Platform, 2008 2. Cooper W.W., Seiford L.M., Tone K., Introduction to Data Envelopment Analysis and Its Uses: with DEA-Solver Software and References, New York: Springer, 2006		
Supplementary references	1. Paradi, J.C., Sherman, H.D., Keung T.F., Data Envelopment Analysis in the Financial Services Industry: A Guide for Practitioners and Analysts Working in Operations Research Using DEA, Springer, 2018 2. Ozcan Y.A, Tone K., Health Care Benchmarking and Performance Evaluation: An Assessment Using Data Envelopment Analysis (DEA), Springer, 2014		

Organisational unit conducting the course	International Department of Logistics and Service Engineering	Date of issuing the programme
Author of the programme	Assoc. Prof. Ewa Chodakowska, DSc, PhD, Eng.	15.02.2022

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