

**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-00073S
								Course type	elective
Forms and number of hours of educational activities	L	C	LC	P	SW	FW	S	Semester	summer
					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	
	<b>Knowledge: the graduate knows and understands</b>								
LO1	Knows the basic concepts of productivity analysis							-	
	<b>Skills: the graduate is able to</b>								
LO2	Conducts productivity analysis using Data Envelopment Analysis method and computer software							-	
	<b>Social competence: the graduate is ready to</b>								
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	
<b>Student workload (in hours)</b>		<b>No. of hours</b>	
<b>Calculation</b>	participation in specialization workshop	30	
	working on project	60	
	homework	40	
	<b>TOTAL:</b>	<b>130</b>	
<b>Quantitative indicators</b>		<b>HOURS</b>	<b>No. of ECTS credits</b>
<b>Student workload – activities that require direct teacher participation</b>		<b>30</b>	<b>1.2</b>
<b>Student workload – practical activities</b>		<b>100</b>	<b>4</b>
<b>Basic references</b>	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		
<b>Supplementary references</b>	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		
<b>Organisational unit conducting the course</b>	<b>International Department of Logistics and Service Engineering</b>	<b>Date of issuing the programme</b>	
<b>Author of the programme</b>	<b>Assoc. Prof. Ewa Chodakowska, DSc, PhD, Eng.</b>	<b>15.02.2022</b>	

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