THE INTERNATIONAL UNIVERSITY OF LOGISTICS AND TRANSPORT IN WROCLAW

SYLLABUS

Teacher					
Course	Logistics Process Optimization and Systems Improvement				
Module	Compulsory subjects	ECTS	4	Course code	23SM.P.L.A.13.2

Field of study	Major	Academic year
LOGISTICS	Industrial Systems Engineering	2023/2024
Semester	SECOND	Year of studies: FIRST

Type of studies	Full-time				Extramural			
Type of classes	Lecture	Exercise	Laboratory	Project	Lecture	Exercise	Laboratory	Project
Amount of hours	25	14	16					
TOTAL	55							

Course objectives	The main objective of the course is to develop knowledge and skills in the analysis, optimisation and continuous improvement of logistics processes and systems. The course focuses on methods of process evaluation, identification of inefficiencies, and the application of improvement and optimisation techniques in logistics systems.

Minimum knowledge required from the student before the classes beginning
basic computer skills and basic skill about using software to create business graphics (charts and diagrams)

Recommended literature to study before the classes beginning
Hillier F.S., Lieberman G.J., Introduction to Operations Research, McGraw-Hill Education, 2021

LEARNING OUTCOMES			KEK	METHODS OF ASSESSMENT	
KNOWLEDGE	K01	The student has basic knowledge in the field of process analysis and performance evaluation in logistics systems	K2_W01_L_P	EM8	Written colloquium with open questions
	K02	The student has extended knowledge of methods used to analyse and improve logistics processes	K2_W05_L_P	EM15	Evaluation of activity in the classroom
	K03	The student has basic knowledge in the field of optimisation and improvement of logistics processes and systems	K2_W10_L_P	EM15	Evaluation of activity in the classroom
	K04				
	K05				
SKILLS	S01	The student has the basic skills to analyse logistics processes and identify areas for improvement	K2_U04_L_P	EM10	Project evaluation
	S02	The student has the skills to apply in practice methods of process evaluation and improvement	K2_U05_L_P	EM15	Evaluation of activity in the classroom
	S03	The student has the ability to use process modelling tools (e.g. BPMN, IDEF0) to support process optimisation	K2_U05_L_P	EM15	Evaluation of activity in the classroom
	S04				
	S05				
SOCIAL COMPETENCE	SC01	The student has basic competences in cooperation within a project team focused on process analysis and improvement	K2_K01_L_P;K2_K05_L_P	EM16	Evaluation of the work, co-operation of students in the classroom (verification of the acquired social
	SC02				
	SC03				
	SC04				

Course contents	Lecture	Introduction to logistics process optimisation Process performance measurement and KPIs Identification of inefficiencies and bottlenecks Methods of process analysis and evaluation Continuous improvement concepts (Lean, Kaizen) Process optimisation techniques Role of process modelling in optimisation Use of BPMN and IDEF0 in process analysis Improvement of logistics systems Monitoring and control of process performance
	Exercises	Analysis of logistics processes Identification of inefficiencies KPI calculation and evaluation Process improvement case studies Application of Lean tools Designing improvement solutions
	Laboratories	Project 1: Analysis of a logistics process using modelling tools Project 2: Development of process improvement proposals using BPMN/IDEF0

	Projects	

Teaching methods	**TM2**	**Informational lecture using multimedia techniques**
	TM16	**Laboratories – task and problem solving**

Obligatory literature	1	Slack N., Brandon-Jones A., Operations and Process Management, Pearson, 2019
	2	Albright S.C., Winston W.L., Business Analytics: Data Analysis and Decision Making, Cengage Learning, 2020
	3	Dumas M., La Rosa M., Mendling J., Reijers H.A., Fundamentals of Business Process Management, Springer, 2018

Additional literature	1	Taha H.A., Operations Research: An Introduction, Pearson, 2017
	2	
	3	

Requirements to pass the course
Completing the lecture and laboratory. Lecture - final test (minimum grade 3), Laboratory - 2 graphic projects of the map and model with the support of IDEF0 and BPMN methods (average grade for projects - minimum 3) + minimum 70% attendance