

COURSE DESCRIPTION CARD

Bialystok University of Technology Faculty of Engineering Management									
Field of study	Management							Degree level and programme type	first degree/ second degree
Specialisation/ diploma path	-							Study profile	-
Course name	Business simulation							Course code	IS-FM-00044S
								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	Presenting tools for designing and simulating digital models of production systems and processes as well as developing digital production skills in Tecnomatix Plant Simulation software								
Course content	Basic elements of Tecnomatix Plant Simulation software. Defining materials and workstations. Control of goods flows. Supplies management. Assembling and dismantling tasks. Simulation of employee tasks. Paths, transportation routes and transportation. Simulation of loading. Ancillary areas. Data analysis. Process optimization.								
Teaching methods	project method, simulation								
Assessment method	Evaluation based on the designed model of the production process in the Plant Simulation system								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
	Knowledge: the graduate knows and understands							-	
LO1	Student: identifies, defines and is able to thoroughly discuss the production and logistics processes of a selected company							-	
LO2	Student indicates the possibility of using the digital model of the production process							-	
	Skills: the graduate is able to							-	
LO3	Student is able to design production process in Plant Simulation system							-	

L04	The student analyzes and evaluates the quality of the designed process model	-
	Social competence: the graduate is ready to	-
L05	The student working in the team prepares a full production project in the Plant Simulation program	-
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
L01	assessment of preparation for exercises, didactic discussion	SW
L02	assessment of preparation for exercises, didactic discussion	SW
L03	observation and assessment of work in class, evaluation of transitional tasks solved by the student	SW
L04	observation and assessment of work in the classroom, didactic discussion	SW
L05	analysis and evaluation of the production process designed by the working groups	SW
Student workload (in hours)		No. of hours
Calculation	Participation in classes (computer lab)	30
	Participation in student-teacher sessions related to the classes	10
	Preparation for classes, laboratory classes	10
	Creating a production process model	45
	Literature review	30
	TOTAL:	125
Quantitative indicators		HOURS
Student workload – activities that require direct teacher participation		40
Student workload – practical activities		125
Basic references	<p>1. Jerzy Łunarski, Projektowanie procesów: technicznych, produkcyjnych i gospodarczych, Oficyna Wydawnicza Politechniki Rzeszowskiej, 2014.</p> <p>2. Marian M. Janczarek, Jerzy Lipski (red.), Projektowanie i sterowanie procesami, Politechnika Lubelska, 2013.</p> <p>3. Ryszard Miler, Tomasz Nowosielski, Bohdan Pac (red.), Optymalizacja systemów i procesów logistycznych, CeDeWu, 2013.</p> <p>4. Gabriela Lew (red.), Modelowanie elementów i systemów transportowych, Oficyna Wydawnicza Politechniki Warszawskiej, 2006.</p>	
Supplementary references	<p>1. Steffen Bangsow, Manufacturing simulation with plant simulation and simtalk, Springer, Berlin 2010.</p> <p>2. Piotr Blaik, Rafał Matwiejczuk, Logistyczny łańcuch tworzenia wartości, Wydawnictwo Uniwersytetu Opolskiego, 2008.</p> <p>3. Materials available on the Tecnomatix system manufacturer's website www.plm.automation.siemens.com</p>	

Organisational unit conducting the course	International Department of Logistics and Service Engineering	Date of issuing the programme
Author of the programme	Mateusz Kikolski, MA	22.02.2022

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