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-00044W**
							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	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	**-**

Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO4	The student analyzes and evaluates the quality of the designed process model	-
	Social competence: the graduate is ready to	-
LO5	The student working in the team prepares a full production project in the Plant Simulation program	-
LO1	assessment of preparation for exercises, didactic discussion	SW
LO2	assessment of preparation for exercises, didactic discussion	SW
LO3	observation and assessment of work in class, evaluation of transitional tasks solved by the student	SW
LO4	observation and assessment of work in the classroom, didactic discussion	SW
LO5	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	No. of ECTS credits
Student workload – activities that require direct teacher participation	40	1.3
Student workload – practical activities	125	4.2

Basic references	1. Jerzy Łunarski, Projektowanie procesów: technicznych, produkcyjnych I gospodarczych, Oficyna Wydawnicza Politechniki Rzeszowskiej, 2014. 2. Marian M. Janczarek, Jerzy Lipski (red.), Projektowanie i sterowanie procesami, Politechnika Lubelska, 2013. 3. Ryszard Miler, Tomasz Nowosielski, Bohdan Pac (red.), Optymalizacja systemów i procesów logistycznych, CeDeWu, 2013. 4. Gabriela Lew (red.), Modelowanie elementów i systemów transportowych, Oficyna Wydawnicza Politechniki Warszwskiej, 2006.
Supplementary references	1. Steffen Bangsow, Manufacturing simulation with plant simulation and simtalk, Springer, Berlin 2010. 2. Piotr Blaik, Rafał Matwiejczuk, Logistyczny łańcuch tworzenia wartości, Wydawnictwo Uniwersytetu Opolskiego, 2008. 3. Materials available on the Tecnomatix system manufacturer's website www.plm.automation.siemens.com

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