

<b>Course title</b>		Logistics and Mobility Modelling						<b>ECTS code</b>		14.3.EE.SZ.3580		
								<b>ECTS credits</b>		4		
<b>Name of unit administrating study</b>		KL		<b>Field of study</b>		Economics		<b>Field of specialisation</b>		L&M;		
<b>Teaching staff</b>		Cezary Mańkowski, Associate Professor										
<b>Number of hours</b>												
<b>Lectures</b>	0	<b>Classes</b>	0	<b>Tutorials</b>	0	<b>Laboratory</b>	30	<b>Seminars</b>	0	<b>Language classes</b>	0	
<b>Forma aktywności</b>							<b>Year&amp;Type of studies*</b>		1 SS2,			
Hours with the participation of the academic teacher (including office hours, exams, others):							<b>Semester:</b>		1,			
Hours without the participation of the academic teacher (student's self-study, homeworks):							<b>Type of course:</b>		obligatory			
Total number of hours:							0		<b>Language of instruction:</b>		English	
<b>Teaching form</b>		in-class learning										
<b>Teaching methods</b>		Work in computer laboratories, Individual projects, Case studies,										
<b>Prerequisites (required courses and introductory requirements)</b>												
<b>Required courses</b>		No requirements										
<b>Introductory requirements</b>		General knowledge on menageral economics										
<b>Assessment method, forms and criteria</b>												
<b>Assessment method</b>		Course completion (graded)										
<b>Assessment criteria</b>		Development of a graphic EPC model of a selected logistics or mobility process and written description of the model according to the EPC terminology. The main assessment criteria include: 1) correctness of the graphic model and its written description; 2) complexity of the model ; 3) no absence in the classes.										
<b>Course objectives</b>												
The objective of the course is to complement the implementation of selected learning objectives in terms of knowledge, skills and social competence in the area of logistics and mobility modelling.												
<b>Learning outcomes</b>												
<b>Knowledge</b>		E2_W08		Student knows statistical and econometric methods and tools for description and macro- and microeconomic modelling of economic structures and public institutions and processes occurring in them, in relation to logistics and mobility								
<b>Verification of learning outcomes - Knowledge</b>												
<b>Outcomes</b>		written exam	oral exam	test	essay/paper /portfolio	tasks/ homeworks	individual presentation	group presentation	classroom activities	classroom discussion	individual project	group project
E2_W08											X	
<b>Skills</b>		E2_U04		Student can forecast and model complex economic and social processes using quantitative and qualitative methods and tools developed by economic sciences (including statistics and econometrics), in relation to logistics and mobility								
<b>Verification of learning outcomes - Skills</b>												
<b>Outcomes</b>		written exam	oral exam	test	essay/paper /portfolio	tasks/ homeworks	individual presentation	group presentation	classroom activities	classroom discussion	individual project	group project
E2_U04											X	
<b>Attitudes</b>		E2_K05		Student correctly identifies, diagnoses and solves dilemmas and alternative solutions								

	related to the profession, in relation to logistics and mobility										
Verification of learning outcomes - Attitudes											
Outcomes	written exam	oral exam	test	essay/paper /portfolio	tasks/ homeworks	individual presentation	group presentation	classroom activities	classroom discussion	individual project	group project
E2_K05										X	
Course contents											
<p><b>1. Structure of logistics and mobility processes</b> Main ontologies, processualism, eventism, reism, relationism, systemism, architectures of business processes (ARIS, CIM OSA, Zachman's framework), logistics and mobility processes, structure, elements, quantitative and qualitative parameters</p> <p><b>2. Development of EPC model of logistics or mobility process</b> Methods and tools of logistics or mobility process modelling. Constructing a model of a selected logistics or mobility process according to the EPC standard of modelling</p> <p><b>3. Analysis of logistics or mobility process model</b> Heuristics, benchmarking, simulation, time/cost/quality analysis</p> <p><b>4. Improvement of logistics or mobility process</b> Vision, redesigning, reengineering</p> <p><b>5. Presentation and discussion on the model of improved logistics or mobility process</b> Presentation, estimation, discussion</p>											
Recommended reading lists											
<p><b>Literature obligatory:</b></p> <p>1) Rosing M., A-W. Scheer, H. Scheel: The Complete Business Process Modeling Handbook. Body of Knowledge from Process Modeling to BPM (Volume 1). Morgan Kaufmann, Waltham 2015. Available <a href="#">HERE</a></p> <p>2) Mańkowski C.: Ontological Foundations for Business Logistic Process Modeling. "Railway Transport and Logistics" 2007, no. 2, p. 30-38. Available <a href="#">HERE</a></p> <p>3) Mańkowski C.: Architectures of logistics processes and systems, Transport Economics and Logistics, Gdańsk University Press, vol. 68, 2017, p. 25-38. Available <a href="#">HERE</a></p> <p>4) Mańkowski C., Chałampowicz J.: Managing maritime container ports' sustainability: a reference model. "Sustainability", MDPI, vol. 13, nr 18, 2021, p. 1-15. Available <a href="#">HERE</a></p> <p><b>Additional sources:</b></p> <p>1) A.-W. Scheer: ARIS-Business Process Modeling. Springer Verlag, Berlin 2000</p> <p>2) J. Mendling: Metrics for process models. Springer Verlag, Berlin 2008</p> <p>3) <a href="http://supply-chain.org/">Http://supply-chain.org/</a>  <a href="http://www.ariscommunity.com">Http://www.ariscommunity.com</a>  <a href="http://www.softwareag.com">Http://www.softwareag.com</a>  <a href="http://www.idef.com">Http://www.idef.com</a>  <a href="http://www.wonderware.com">Http://www.wonderware.com</a></p>											
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\* SS1- undergraduate studies \* SS2 - graduate studies \* SDang - doctoral studies  
 \*\* MSG - International Economic Relations