THE INTERNATIONAL UNIVERSITY OF LOGISTICS AND TRANSPORT IN WROCLAW

SYLLABUS

Teacher					
Course	Information systems and logistics services				
Module	Compulsory subjects	ECTS	4	Course code	23SM.P.L.A.11

Major	Speciality	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	Laboratories	Project	Lecture	Exercise	Laboratories	Project
Amount of hours	16	12	30					
TOTAL	58							

Course objectives	**Knowledge of the purpose, nature and area of application of information technology in business management, including the automation of basic logistics processes in the area of production, procurement, storage and distribution. Knowledge about methods of using integrated IT systems in logistics - MRP, MRPII and ERP systems**

Minimum knowledge required from the student before the classes beginning
Knowledge in the field of logistics as well as management information systems and computer science basic tools (MS Office package)

Recommended literature to study before the classes beginning
Laudon K.C., Laudon J.P., Management Information Systems: Managing the Digital Firm, Pearson, 2020

LEARNING OUTCOMES			KEK	METHODS OF ASSESSMENT	
KNOWLEDGE	K01	**Utilize ability apply the theoretical knowledge to use MIS and DSS to model of selected logistics processes in the enterprise**	**K2_W04_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
	K02	**Demonstrate proficiency to identify opportunities for the development of logistics oriented and integrated business management using various information management systems**	**K2_W06_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
	K03	**Use the ability to plan and organize technological processes in logistics. Demonstrate basic skills in the implementation of ERP-class systems and similar**	**K2_W07_L_P**	**EM1 EM9**	Oral exam. Written test with computational tasks
	K04	**Explain the selected ERP class IT systems as support for logistics processes used in a modern enterprise. Efficiently explain them in English**	**K2_W04_L_P K2_W07_L_P**	**EM1 EM15**	Oral exam. Evaluation of activity in the class-room
SKILLS	S01	**Utilize integrated knowledge from various logistics fields, as well as to select appropriate methods and tools for identify, interpret, describe and analyse problems and areas of logistics and its conditions**	**K2_U01_L_P**	**EM1 EM10**	Oral exam. Written test in the form of open tasks. Project evaluation
	S02	**Demonstrate proficiency to initiate and manage logistics projects using IT tools. Utilize ability to formulate and present in English the general and functional strategies for enterprises and logistics services on the domestic and international market**	**K2_U03_L_P K2_U05_L_P**	**EM10 EM15**	Project evaluation Evaluation of activity in the class-room
	S03	**Student gather the basic skill in the area of database design and implementation**	**K2_U01_L_P K2_U05_L_P**	**EM1 EM8**	Oral exam. Written test in the form of open tasks
	S04				
SOCIAL COMPETENCE	SC01	**Utilize ability to think and act in an entrepreneurial way and is prepared to create and organize economic projects**	**K2_K02_L_P**	**EM16**	Assessment of the work, students co-operation in the classroom
	SC02	**Utilize ability to analyse data that is needed to make business decisions in a way that allows computer processing and presentation**	**K2_K05_L_P**	**EM15 EM16**	Evaluation of activity in the lab. Project evaluation Evaluation of activity in the classroom

	SC03	**Demonstrate proficiency to cooperate for the preparation of economic projects, taking into account legal, economic and technical aspects and understand the effects of the actions taken, including their impact on the environment and the related responsibility for the decisions made.**	**K2_K05_L_P**	**EM15 EM16**	Evaluation of activity in the lab. Project evaluation Evaluation of activity in the classroom

Course contents	Lecture	The basic concept of e-economy. Marking logistics units in EAN-UCC and RFID systems. Expert models used in logistics systems. The presentation of exemplary project solutions and goods labelling with barcodes. Electronic data interchange (EDI). Documents interchange based on XML language. Electronic system of supply chain management (E-SCM). Electronic system of customer relationship management (E-CRM). E-economy. Mass product online sale. Databases – basic concepts. Presentation and description of rules for model databases (data warehouses) in ORACLE IT system
	Exercise	1.The position of computer science in logistics management Logistics management. Logistics system. Information system vs. IT system. Conditioning of IT support for logistics 2.The organization of data and databases Basic concepts of databases. The architecture of database systems. Basic models of databases (hierarchic, network, object, relational). Issues of relational databases design. Data warehouses. The presentation and discussion on rules governing model databases (data warehouses) in ORACLE system 3. The organization of data and databases Database design for a part of logistics chain support system (ERD diagram). Converting of a prepared model to a relational database. Preparing an invoice sheet with the usage of database and 'search' function 4.Expert models in logistics systems Introduction to methods of artificial intelligence and to expert systems. Presentation of concepts (neuron networks, genetic algorithms, fuzzy systems, algorithms based on the theory of mathematical evidence, minimum-distance algorithms) Designing of expert systems for logistics support Practical application of expert methods in logistics systems and the possibility to develop these systems 5. Expert models in logistics systems Designing an expert system which supports intelligent management of a supply chain and production planning with the usage of combination rule of Dempster-Shafer, fuzzy sets and k-NN algorithm. Practical checking of the correctness of a designer model. 6. Computer networks. The Internet Basic concepts connected with networks Computer networks design. The Internet. 7. E-signature Introduction. E-documents protection. E-signature. Methods of information encoding. Digital certificates. Public key infrastructure 8. E-signature – exporting a certificate Acquiring a qualified certificate for information protection and exporting it to a certificate warehouse. Protection of an e-mail box by means of a certificate 9. Automatic identification of marketed products Basic concepts connected with barcodes. Types of barcode : EAN-13, EAN-8, EAN-128, CODE 39, CODE 128, ITF.
	Laboratories & project	Rules for building and implementation of electronic informants in chosen industrial sectors for the purpose of distribution and promotion. Code marking of consumer bulk units based on EAN-UCC barcode system. Designing a database including information in the form of a code. Preparation of an invoice sheet with the use of a database and a 'search' function. The usage of expert methods for preparing a logistics system project (theories of: mathematical evidence, fuzzy logic, minimum-distance algorithm). Logistics label design with the usage of software 'label designer'. Preparing a label and scanning it. Presentation of a wholesaler's database in a system based on ORACLE database. Presentation of and discussion on warehouse management supporting system based on Q-TORAGA3000 system of QBS company. Examples of implementation of Q-TORAGA3000 system for a chosen producer. The presentation of computer-supported management based on MOVEX-ERP system – logistics modules. A project of a warehouse-transport system and computer simulation of its effectiveness with the usage of QGUAR/MOVEX system.

Teaching methods	**TM2**	**A lecture with a multimedia presentation, topic-related films, discussions**
	TM14	**Laboratories – experiment and laboratory analysis**
	TM8	**Project method**

Obligatory literature	1	Laudon K.C., Laudon J.P., Management Information Systems: Managing the Digital Firm, Pearson, 2020
	2	Chopra S., Supply Chain Management: Strategy, Planning, and Operation, Pearson, 2019
	3	Sanders N.R., Big Data Driven Supply Chain Management: A Framework for Implementing Analytics and Turning Information into Intelligence, Pearson, 2019

Additional literature	1	Galliers R.D., Leidner D.E., Simeonova B., Strategic Information Management: Theory and Practice, Routledge, 2020
	2	Hugos M.H., Essentials of Supply Chain Management, Wiley, 2018
	3	Turban E., Pollard C., Wood G., Information Technology for Management: Driving Digital Transformation to Increase Local and Global Performance, Growth and Sustainability, Wiley, 2018

Requirements to pass the course
Exercises are evaluated on the basis of the student's activity during the classes and on the basis of a written colloquium. The laboratory consists of practical classes that are assessed on an ongoing basis for the performance of the lecturer's instructions and for activity in the classroom. Students solve tasks individually and in teams. The subject ends with an oral exam, which refers to the content presented at the lectures. The share of each grade in the final evaluation in the part of the assessment is as follows: 50% oral exam, 30% laboratory grade, 20% exercise grade. To obtain a satisfactory result of the exam, the student must get 50% of points from the basic sum.