POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Inventory management [N1Log2>ZZ]

Course

Field of study
Logistics

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
18

Laboratory classes
0

Other (e.g. online)
0

Tutorials
10

Projects/seminars
0

Number of credit points

4,00

Coordinators

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Lecturers

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Prerequisites

The student knows the basic logistical issues such as functional separation of logistics, nature customer service, the nature of transport and storage logistics. Student is able to calculate a simple task with the content. He can use statistical formulas such as the mean and statistical deviation.

Course objective

The course aims are to familiarize students with the most important problems of inventory management in terms of independent demand and training in operational decision-making skills for reordering stock.

Course-related learning outcomes

Knowledge:
1. Student has a basic knowledge of inventory management [P6S_WG_05] [P6S_WK_06]
2. Student is able to identify and formulate the basic relationship between inventory and, storage, transport and other functional areas of logistics [P6S_WK_04]

3. The student knows the methods of stock renewal and their impact on the supply chains management [P6S_WK_05]

Skills:
1. Student can design a process to analyze the efficiency of inventory management [P6S_UW_06][P6S_UK_02]
2. Student is able to define the problem of renewal of stocks in terms of demand independent [P6S_UW_01][P6S_UW_03][P6S_UO_01]
3. Students can use a spreadsheet with a simple algorithm to design a reordering of stocks [P6S_UK_01][P6S_UU_01]

Social competences:
1. Student shows a willingness to cooperate and assist in the design group [P6S_KR_02]
2. The student is responsible for the identification and resolution of the dilemmas associated with inventory management [P6S_KR_01]
3. Student is determined to think in an entrepreneurial way of inventory management [P6S_KO_02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: On the basis of exam - written work on the issues discussed during the lecture. The exam can be applied after obtaining the ratings of the project and the laboratory. The exam is passed, after giving the correct answers to most questions.
Tutorials: on the basis of the quality of the project and answers to questions about the project.

Programme content

Lecture: The issue of course includes the following topics: functions of inventory in logistic systems (includes implementation of VMI process), classification of inventory, the structure of supply (inventory cycle, safety, surplus - identifies causes for stock obsolescence and redundancy and propose ways for minimising this), the basic elements of inventory management to cover the needs of dependent and independent (includes push/pull logic, lead time definition, product cycle vs. level of inventory management), the costs of rising, maintenance and lack of supply, demand analysis (includes method of improves the demand management process), demand forecasting (9 stages of forecasting process), definitions of customer service (CS in the demand management process), developing supply security, reordering systems inventory (optimize level of inventory), optimize inventory turnover (volume of deliveries), the square root law (safety stocks in the dispersion of stock), inventory management of product groups (includes CPFR method), measures of stock (KPI in inventory management).
Tutorials: Case study and the use of a spreadsheet to build classic models of replenishment of inventories, determining the level of safety stock and assessment of the inventory structure, practical exercises in the field of building the ABC / XYZ / 123 classification

Teaching methods

Lectures: conversational lecture, information lecture.
Tutorials: computer simulation method, project method.

Bibliography

Basic:
1. Cyplik P., Hadaś Ł., Zarządzanie zapasami w łańcuchu dostaw, Wydawnictwo Politechniki Poznańskiej, Poznań, 2012.
2. Krzyżaniak S., Podstawy zarządzania zapasami w przykładach, ILiM, Poznań, 2008.
3. Sarjusz-Wolski Z., Sterowanie zapasami w przedsiębiorstwie, PWE, Warszawa, 2000.
4. Cyplik P., AN APPLICATION OF SPARE SUPPLIES MANAGEMENT FOR WAREHOUSE SUPPLIES OPTIMIZATION USING CLASSICAL METHODS - CASE STUDY, Logforum 1.3 (2005): 4.
5. Cyplik P., Hadaś Ł., Domański R., Implementation of the theory of constraints in the area of stock management within the supply chain - a case study, LogForum, Vol. 5, Issue 3, No 6,2009, https://www.logforum.net/pdf/5_3_6_09.pdf

Additional:

1. Coyle J. J., Bardi E. I., Langley J. Jr., Zarządzanie logistyczne, PWE, Warszawa, 2002.
2. Krzyżaniak S., Cyplik P., Zapasy i magazynowanie, Tom I Zapasy, Podręcznik do kształcenia w zawodzie
technik logistyk, ILiM, Poznań, 2007.
3. Domański R., Adamczak M., Analysis of the influence of the lot sizing on the efficiency of material flow
in the supply chain, LogForum 13 (3) 2017, https://www.logforum.net/pdf/13_3_8_17.pdf

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	30	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	70	2,50