KARTA PRZEDMIOTU

Nazwa przedmiotu: ***Quantitative methods in logistics (ZIPAOZ>SM2QMiL19S)***
Name:
Nazwa w języku polskim:
Name in Polish:
Nazwa w jęz. angielskim: ***Quantitative methods in logistics***
Name in English:

Dane dotyczące przedmiotu:
Information on course:

Jednostka oferująca przedmiot:	Wydział Organizacji i Zarządzania
Course offered by department:	Faculty of Organization and Management
Przedmiot dla jednostki:	Politechnika Śląska
Course for department:	Silesian University of Technology
Cykl dydaktyczny:	Semestr letni 2022/2023
Term:	Summer semester 2022/2023
Koordynator przedmiotu cyklu: **Cordinator of course edition:**	Dr inż. Mateusz Zaczyk

Domyślny typ protokołu dla przedmiotu:

ZAL

Default type of course examination report:

ZAL

Język wykładowy:

angielski

Language:

English

Strona WWW:
Course homepage:

https://platforma2.polsl.pl/roz/course/view.php?id=301

Short description:

The course presents a wide range of quantitative methods used in the field of logistics. Students will learn about the quantitative techniques chosen by the tutor during lectures. Practical classes consist in improving the skills acquired during the lectures. As part of the classes, students perform a number of tasks verifying their practical skills in the use of quantitative methods in logistics.

Description:

The aim of the course is to familiarize students with the wide spectrum of quantitative methods used in logistics. Students will learn the methodological assumptions of the presented methods in the form of a lecture. During the classes, students will perform a series of tasks leading to the deepening of knowledge flowing from lectures and the practical application of this knowledge. The pre-requisite qualifications for the subject are connected with obtaining the knowledge from subjects as: Fundamentals of Logistics, Fundamentals of Management.
The content of Lecture part of the subject contains:
1. Introduction – qualitative and quantitative methods of research (2 hours)
2. Basic methods of materials classification (2)
3. Demand forecasting in logistics (2)
4. Critical Path Analysis – project management (2)
5. Quality Function Deployment and FMEA analysis (2)
6. Balanced and unbalanced transportation problems (2)
8. Final test (1)
Classes
Selected logistic problems' solving on the basis of quantitative methods including:
1. Basic methods of materials classification (6)
2. Demand forecasting (6)
3. Critical Path Analysis (6)
4. QFD and FMEA (6)
5. Transportation problems (4)
6. Final colloquium (2)

Contact hours for the subject:
-Lecture - 30
-Classes - 30
-Total - 60

The ECTS points amount - 2.

Bibliography:

Primary sources:
1. Bendkowski J, Kramarz M., Kramarz W.: Metody i techniki ilościowe w logistyce stosowanej. Wybrane zagadnienia, Wydawnictwo Politechniki Śląskiej, Gliwice 2010.
2. Brandimarte P.: Quantitative Methods: An Introduction for Business Management, Wiley, 2011.
3. Christou I. T.: Quantitative Methods in Supply Chain Management Models and Algorithms, Springer-Verlag, London, 2012.
Secondary sources:
1. Farmer D., MacMillan K.: The benefits of reducing opportunism in buyer–supplier relationships, Purchasing and Supply Management, May 1978, pp 10-13.
2. Krawczyk S.: Metody ilościowe w logistyce (przedsiębiorstwa), Beck, Warszawa 2001.

3. Miśkiewicz R.: Organisational structure in the process of integration. On the example of iron and steel industry enterprises in Poland. Difin, Warszawa 2017.
4. Stock J.R., Lambert D.M., Strategic Logistics Management, McGraw-Hill Companies Inc., New York 2001.

Learning outcomes:

1. Student can explain the role of quantitative data collection. Student understands the importance of sampling and data analysis.
K2A_W04
K2A_U01
K2A_U06

2. Student is able to characterize key quantitative methods used in the field of logistics.
K2A_W04
K2A_U01
K2A_U07
K2A_K05

3. The student is able to characterize quantitative techniques of problems solving. Student is able to identify set of each method's advantages and disadvantages.
K2A_W06
K2A_U01
K2A_U06
K2A_K05

4. The student is able to identify benefits of quantitative methods in logistics using in order to analyse logistics problems.
K2A_W04
K2A_W06
K2A_U01
K2A_U06

5. Student is able to identify and use different types of quantitative. Student has a knowledge in the field of complex logistics trade-offs resolving.
K2A_W04
K2A_U01
K2A_U06
K2A_U07
K2A_U09
K2A_K05

Assessment methods and assessment criteria:

Lecture:
-written test with few open questions and few single-choice questions,
-passing criteria - minimum 50% of total amount of points to achieve.

Classes:
-uploading the set of tasks solutions,
-written colloquium,
-grading conditions - (tasks grade+colloquium grade)/2

Dane dotyczące przedmiotu cyklu:
Information on course edition:

Domyślny typ protokołu dla przedmiotu cyklu:

ZAL

Default type of course examination report:

ZAL

Bibliography:

missing bibliography in English

Szczegóły zajęć i grup
Details of classes and study groups

wykład (30 godzin)
lecture (30 hours)

Dane grup zajęciowych
Study groups details

brak szczegółowych danych o grupach zajęciowych
missing study groups details

ćwiczenia (30 godzin)
classes (30 hours)

Dane grup zajęciowych
Study groups details

brak szczegółowych danych o grupach zajęciowych
missing study groups details