

SYLLABUS

Name: Safety in logistics (ZIPAOZ>SM2SiL19S)

Name in Polish:

Name in English: Safety in logistics

Information on course:

Course offered by department: Faculty of Organization and Management

Course for department: Silesian University of Technology

Term: Summer semester 2022/2023

Cordinator of course edition: Dr hab. inż. Katarzyna Sienkiewicz-Małyjurek

Default type of course examination report:

ZAL

Language:

English

Short description:

The objectives of the course are to systematize and extend existing knowledge in logistics and logistics management in the scope of: sources of threats in supply chains and logistics processes, areas of risk and safety management in the supply chains and logistics processes, solving problems related to the safety of the supply chains and logistics processes.

Description:

Lectures:

Each lecture consists of three parts: 1. introduction including a reminder of the issues from the previous lecture; 2. presentation and discussion of the lecture topic; 3. summary including repetition of key issues from the current lecture regarding practical situations and problems.

Organizational information, required literature and conditions for passing the course are presented to students at the beginning of the first lecture.

Lecture topics include:

1. Introduction to safety in logistics issues: This lecture consists of two parts. The first one concerns the theoretical foundations of logistics processes. Areas of logistics and the importance of logistics processes in supply chain management are indicated. Students are also introduced to operational processes implemented in supply chains and management components of these processes. The second part of the lecture refers to the broadly understood issue of safety, on the basis of which the issues and framework of safety research in logistics are presented.
2. Approaches used in safety in logistics – risk management: During this lecture such topics are discussed: the need for risk assessment in the safety management process in logistics, framework and process of risk management according to ISO 31 000 and ISO 31 010. These topics will be analyzed based on the guidelines of the ISO 28000:2007 and ISO 28002:2010
3. Threats and disruptions in logistics processes – risk assessment methodology: During this lecture, students are familiarized with risk in supply chains in general, and internal and external sources of this risk are indicated. On this basis, the need for risk assessment is explained and selected risk assessment techniques are presented along with their advantages and disadvantages.
4. Vulnerability: At the beginning of this lecture, statistics resulting from technological development and threats related to logistics processes in supply chains are presented. Then, the rationale for examining vulnerabilities in logistics processes is explained. In order to better understand the vulnerability of logistics processes, students are familiarized with the theory of vulnerability and the difference between vulnerability and risk. Supply chain vulnerability drivers, dimensions and factors are indicated on this basis. The lecture ends with tips on how to examine vulnerability in logistics.
5. Resilience: This lecture has two parts. The first one presents the general theory of resilience, along with the characteristics, components, dimensions and factors of this construct. Then, the importance of resilience in logistics processes and key strategies for building this resilience are discussed.
6. Collaboration and transmission of threats: This lecture presented the basics of collaboration theory, the intensity of inter-organizational relations, and the model and criteria of effective inter-organizational collaboration. Then, the impact of collaboration on logistics processes, reasons, scope, and elements of collaboration are discussed. On this basis, the issue of risk transmission in supply chains is presented.
7. Adaptive supply chain and Business Continuity Management: During the lecture, students become familiar with the issue of adaptation to changing and unpredictable situations. The differences between coping and adaptation are indicated, and adaptation cycles are discussed. Then, the connections and interdependencies between risk, resilience, vulnerability and adaptability are presented in relation to the previously discussed issues. On this basis, elements and determinants of the adaptive supply chain are introduced. Then, the issues of Business Continuity Management, its process and the possibilities it allows to achieve are also discussed. The lecture ends with a summary of the course.

Teaching methods used during lectures: lecture, discussion, demonstration

Projects:

Project classes consist of two parts: 1. presentation of the method planned to be used along with practical examples; 2. preparation of part of the project based on a presented method by students under the supervision of a teacher. Students receive materials facilitating the use of a given method. Additionally, as needed, all problems and requirements related to the current progress of the project are discussed.

The project's topics include:

1. Analyzing threats in logistics processes

2. Assessment of risk connected with threats in logistics processes
3. Developing scenario of safety in logistics
4. Preparing safety plans
5. Analyzing approaches to dealing with threats
6. Implementing preventive actions
7. Discussing results

Teaching methods used during project classes: problem analysis, brainstorming, measurement and reasoning, design

Bibliography:

1. Rudd, J. (2020). Health and Safety in Logistics: Assessing and Avoiding Risk in Warehousing and Transportation. Kogan Page Publishers.
2. Actual problems of logistics, ed. by Aleksander Śladkowski. Gliwice: Wydawnictwo Politechniki Śląskiej. 2012.
3. Eßig, M., Hülsmann, M., Kern, E.-M., Klein-Schmeink, S. (Eds.) Supply Chain Safety Management, Security and Robustness in Logistics, Springer-Verlag Berlin Heidelberg, 2013.
4. Advances in safety, reliability and risk management: proceedings of the European Safety and Reliability Conference, ESREL 2011, Troyes, France, 18-22 September 2011, editors: Christophe Bérenguer & Antoine Grall, C. Guedes Soares. - Boca Raton [etc.] : CRC Press, cop. 2012.
5. Martin Christopher, Logistics and supply chain management: strategies for reducing cost and improving service. Harlow: Financial Times Prentice Hall, 2011.
6. Maruchek, A., Greis, N., Mena, C., Cai, L. (2011) Product safety and security in the global supply chain: Issues, challenges and research opportunities. Journal of Operations Management 29(7-8), pp. 707-720
7. Speier, C., Whipple, J.M., Closs, D.J., Voss, M.D. (2011) Global supply chain design considerations: Mitigating product safety and security risks. Journal of Operations Management. 29(7-8), pp. 721-736
8. Kleindorfer, P.R., Singhal, K., Van Wassenhove, L.N. (2005) Sustainable operations management . Production and Operations Management 14(4), pp. 482-492
9. Sienkiewicz-Małyjurek K. (2021) Safety in the public services supply chains – the case of emergency management. Organization & Management Scientific Quarterly 1(53), pp. 91-109.

Learning outcomes:

Knowledge:

K2A_W03: Students know and understand basic processes taking place in logistics systems, threats and risks connected with these processes

K2A_W13: Students know and understands fundamental dilemmas of the contemporary world, vulnerability of logistics systems and connections of these systems with worldwide processes

Skills:

K2A_U02: Students are able to perform tasks as well as formulate and solve problems in the field of safety in logistics processes using new knowledge, using available methods

K2A_U03: Students are able to use analytical methods, considering their systemic and non-technical aspects, and designing engineering activities when identifying, formulating, and solving problems in the field of safety in logistics

K2A_U08: Students are able to integrate and use advanced knowledge related to the safety of logistics processes and the vulnerability and resilience of these processes, and they are able to solve engineering tasks.

Social competence:

K2A_K03: Students are ready to fulfil social obligations in general logistics processes, inspiring and organizing activities for the social environment based on designing safe logistics operations and initiating activities for the public interest.

Assessment methods and assessment criteria:

The final grade consists of 50% of the project prepared in a group of students and 50% of the test result from lectures.

Information on course edition:

Default type of course examination report:

ZAL

Bibliography:

missing bibliography in English

Course credits in various terms:

Management and Production Engineering, full-time master degree studies 3 sem. (ZIPAOZ-SM3)			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	2	2020/2021-L	