POZNAN UNIVERSITY OF TECHNOLOGY

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Supply Chain Management [N1Log2>ZŁD]

Course

Field of study
Logistics

Year/Semester
3/5

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
8

Laboratory classes
0

Other (e.g. online)
0

Tutorials
10

Projects/seminars
0

Number of credit points

2,00

Coordinators

dr hab. inż. Katarzyna Grzybowska prof. PP
katarzyna.grzybowska@put.poznan.pl

Lecturers

Prerequisites

Student knows the basics of production organization and logistics. Student is able to use basic measures of customer service level. The student shows willingness to cooperate in a group.

Course objective

Mastering the student's knowledge, skills and social competences related to supply chain management. Familiarizing students with the essence and principles of operation of supply chains. Students learn basic solutions used in this area.

Course-related learning outcomes

Knowledge:
1. Student knows the basic concepts of supply chain management [P6S_WG_05]
2. Student knows the basic management issues specific to supply chain management [P6S_WG_08]
3. Student knows the basic relationships in supply chain management [P6S_WK_04]
4. Student knows the basic phenomena and contemporary trends characteristic of supply chain management [P6S_WK_05]
5. Student knows the best practices in supply chain management [P6S_WK_06]

Skills:
1. Student can search based on the literature and other sources and present information on a problem within the scope of supply chain management in an orderly manner [P6S_UW_01]
2. Student can apply to solve the problem within the studied subject appropriate experimental and measuring techniques in the framework of supply chain management [P6S_UW_03]
3. Student is able to assess and make a critical economic analysis of the selected problem, falling within the framework of supply chain management [P6S_UW_06]
4. Student is able to design, using appropriate methods and techniques, an object, system or process that meets the requirements of supply chain management [P6S_UW_07]
5. Student is able to present, using properly selected means, a problem within the scope of supply chain management [P6S_UK_01]
6. Student can prepare in Polish and English at B2 level of the European Language Training Description System well documented development of logistics problems [P6S_UK_02]
7. Student is able to identify changes in requirements, standards, regulations, technical progress and the reality of the labor market, and based on them determine the needs to supplement knowledge [P6S_UU_01]

Social competences:
1. Student is aware of the critical assessment and perception of cause-effect relationships in achieving the set goals and ranking the significance of the tasks [P6S_KK_01]
2. Student is aware of the recognition of the importance of knowledge in the field of supply chain management in solving cognitive and practical problems [P6S_KK_02]
3. Student is aware of cooperation and work in a group on solving problems falling within the area of supply chain management [P6S_KR_02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lectures: Formative assessment: acquired knowledge is verified on the basis of answers to questions about the material discussed during the lectures (two tests, differently scored) and the student's own work. Summative rating: acquired knowledge is verified on the basis of credit in writing (open questions, various points); Passing threshold: 60% of points.
Tutorial: Formative assessment: the acquired knowledge is verified on the basis of activity during the classes and assessment of the current progress of partial tasks carried out (independent and group work, expressing own views and opinions). Summative rating: the acquired knowledge is verified on the basis of the points obtained from the partial tasks of the forming assessment; Passing threshold: 60% of points.

Programme content

- general issues of supply chain management; global supply chain management trends
- the essence and principles of supply chain management and operation
- characteristics of organizational and technical solutions used in the area of supply chain management

Course topics

Lecture: Introduction (definition of supply chain; principles of supply chain operation; maintaining inventory in the supply chain; strategies for managing fluctuating demand in the supply chain (buffer management / inventory buffers / buffer capacity; time reduction strategy; deferral strategy, collaborative processes; forecasting and planning); problems supply chain). Supply chain relationality (cooperation in supply chains - JiT, JiTII, CPFR, VMI, conventional and integrated supply chains, lean and agile supply chain; relationships in supply chains; building partnerships). Reverse Supply Chain (Closed-loop Supply Chain; logistics operator in the supply chain (3rd party logistics, 4th party logistics), SCORM model, APICS SCOR model). Responsible supply chain (Green Supply Chain; Sustainable Supply Chain; Food Supply Chain; Global Supply Chain). Auxiliary Supply Chain (Humanitarian Supply Chain; Service Supply Chain). Digitalised supply chain; Multichannel Supply Chain; Multiagent Supply Chain, Blockchain, Cloud Computing (CC), Autonomous Vehicles (AV), Artificial Intelligence (AI), Internet of Things (IoT), Big Data Analytics (BDA). Resilient supply chain; supply chain complexity, supply chain design, supply chain disruptions, supply chain resilience, supply chain risk, supply chain security, supply chain volatility

reduction, supply chain benchmarking, resource bottlenecks).
Tutorial: Risk and uncertainty analysis in the supply chain. Identification of uncertain events in the supply chain. Analysis of adverse events. Classification of undesirable events. Minimization and elimination of undesirable events. Presentation of the results. Grades.

Teaching methods

Lecture: In terms of lectures: informative lecture (multimedia presentation, illustrated with examples), seminar lecture, Oxford Discussion. In terms of independent work: work with a book.
Tutorial: Problem solving techniques (brainstorming, Mind Mapping, 5 why; Cause-and-effect analysis; PDCA cycle). Techniques for solving problems in the process (problem definition, information gathering, identification of alternative solutions; evaluation of options and selection of the best solution, evaluation of activities). Identification of process improvement opportunities (value stream mapping, Six Sigma). Analysis using value stream mapping (diagram technique); Product / work flow visualization; Identification of value-adding and non-value-adding activities; Identifying process improvement opportunities (Kaizen). Round table discussion.

Bibliography

Basic:
1. Ciesielski M., Zarządzanie łańcuchami dostaw, PWE, Warszawa, 2011.
2. Ciesielski M., Długosz J., Strategie łańcuchów dostaw, PWE, Warszawa, 2010.
3. Witkowski J., Zarządzanie łańcuchem dostaw. Koncepcje - procedury - doświadczenia, PWE, Warszawa, 2010.
4. Awasthi A., Grzybowska K., Barriers of the supply chain integration process [w:] Golinska P. (ed.), Logistics Operations, Supply Chain Management and Sustainability, Springer International Publishing, 2014, s. 15-30, 2014, DOI: 10.1007/978-3-319-07287-6_2.
5. Grzybowska K., Modele referencyjne wybranych mechanizmów koordynacji działań w łańcuchu dostaw, Logistyka Nr 3/2015, s. 5660-5664.
6. Grzybowska K., Awasthi A., Sawhney R. (eds.), Sustainable Logistics and Production in Industry 4.0 - new opportunities and challenges, EcoProduction (Environmental Issues in Logistics and Manufacturing). Springer, Cham, 2020.
7. Grzybowska K., Stachowiak A., Classification of trends and supply chains development directions, Golinska-Dawson P., Tsai KM., Kosacka-Olejnik M. (eds) Smart and Sustainable Supply Chain and Logistics - Trends, Challenges, Methods and Best Practices. EcoProduction (Environmental Issues in Logistics and Manufacturing). Springer, Cham., 307-322, 2020.
8. Grzybowska K., Identification and classification of global theoretical trends and supply chain development directions, Energies, 14/2021, art. 4414.
9. Tubis A.A., Grzybowska K., Król B., Supply Chain in the Digital Age: A Scientometric-Thematic Literature Review, Sustainability 15(14)/2023, 11391.

Additional:
1. Grzybowska K., Koordynacja - Systematyczna dyrektywa sprawnego działania systemów złożonych - wybrane spekty, Nauki o Zarządzaniu, 3 (28)/2016, s. 30-39, 2016
2. Grzybowska K., Koopetycja - współczesna forma współpracy w łańcuchu dostaw, Logistyka nr 6, s. 32-34, 2011
3. Hoffa-Dąbrowska P., Grzybowska K., Simulation modeling of the sustainable supply chain, Sustainability 12(15), 6007, 2020

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	18	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	32	1,00