# COURSE DESCRIPTION CARD - SYLLABUS

Course name
Logistics Strategies

## Course

Field of study
Transport

Year/Semester
1/2

Area of study (specialization)
Logistics of Transport

Profile of study
general academic

Level of study
Second-cycle studies

Course offered in
polish

Form of study
part-time

Requirements
elective

## Number of hours

Lecture
18

Laboratory classes
0

Other (e.g. online)
0

Tutorials
9

Projects/seminars
0

## Number of credit points

3

## Lecturers

Responsible for the course/lecturer:
dr inż. Paweł Zmuda-Trzebiatowski
pawel.zmuda-trzebiatowski@put.poznan.pl
61 665 2716
Faculty of Civil and Transport Engineering
ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

## Prerequisites

Knowledge: The student has basic knowledge in the field of logistics (transport and warehousing) and management
Skills: The student is able to integrate the obtained information, make their interpretation, draw conclusions, formulate and justify the opinions of the ability to see, connect and interpret phenomena
Social competencies: The student is aware of the importance and understands the non-technical aspects and effects of the use of individual logistics strategies

## Course objective

To familiarize students with the basic logistics strategies utilized in companies

## Course-related learning outcomes

Knowledge

1. has advanced and in-depth knowledge in the field of transport engineering, theoretical foundations,

tools and means used to solve simple engineering problems
2. has advanced and detailed knowledge of the processes taking place in the life cycle of transport systems
3. has advanced and detailed knowledge of selected issues in the field of transport engineering

Skills

1. can - when formulating and solving engineering tasks - integrate knowledge from various transport areas (and if necessary also knowledge from other scientific disciplines) and apply a systemic approach, also taking into account non-technical aspects
2. can make a critical analysis of existing technical solutions and propose their improvements (improvements)
3. can determine the directions of further learning and realize the process of self-education

Social competences

1. is aware of the need to develop professional achievements and comply with the rules of professional ethics
2. understands the importance of using the latest knowledge in the field of transport engineering in solving research and practical problems

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:
Lecture: Preparation as part of lectures, subject to assessment, presentation of an example of real application in a selected company / companies (preferably in Polish conditions), a given type of strategy and as part of the exercises to solve tasks asked on particular classes. And a written test (multiple choice) summarizing the subject.
Exercises: Average marks from written reports on classes

## Programme content

1. Introduction to the subject: Basic concepts and definitions - strategy classification, supply chain, push and pull systems, Third-party Logistics - 3PL, LLP / 4PL, dropshipping, direct plant shipment, direct store delivery
2. Strategy of focusing on key competences: Outsourcing - essence, goals, scope, effects of application. Insourcing, Co-sourcing, make / do or buy analysis, application effects. Application example.
3. Lean Management / Production / Distribution - LM / LP / LD: definitions, basic principles, goals, application effects., 5S. Application example.
4. Toyota Production System / Toyota Production System - TPS / Kaizen: Name and essence of TPS, basic elements, implementation, application possibilities. KAIZEN, HEIJUNKA, SMED, 5 WHY. 6-SIGMA - essence, sense of application, tools: Process analysis - process maps, cause-and-effect matrices, "what and how" analysis, cause and effect diagrams, waste elimination, spaghetti diagram, Pareto analysis. Application example.
5. 6 SIGMA: Essence, goals, effects, application possibilities. Application example. COPQ - Cost of Poor Quality, DPO - Defects Per Opportunity, DPMO - Defect Per Million Oportunities.
6. Strategy of competing in time - shortening the cycle: Just-in-Time (JiT) - the essence, goals, effects,

possibilities of application. Pull. Kanban - being, elements, Kanban in production, Kanban in distribution, WIP. Application example.
7. Time competition strategy - increasing asset productivity: Cross-Docking (x-docking) - the essence, goals, effects, application possibilities, advantages and disadvantages. Application example.
8. Setting strategic directions of changes, assessment of logistics: Benchmarking - the essence, objectives, premises, types, stages of implementation, effects of application, typical measures. Application example.
9. Advanced cycle shortening concept: Material Requirement Planning - MRP - essence, structure, MRP, MRP II, PUSH system, main production schedule - MPS, material list / register - BOM, inventory / stock register - IS. Application example.
10. Inventory management strategy: Distribution Requirement Planning - DRP, DRP comparison and MRP, available stock, optimal delivery batch size, replenishment cycle, level of DRP safety margin. ERP systems
11. Inventory management strategy in supply chains: Vendor Managed Inventory - VMI, SMI (supplier managed inventory), Supply Chain Management (SCM), EDI, RFID, barcodes.
12. Postponement / logistic postponement: Delaying strategy, postponement of activities in the logistics system, postponement of changes in the location of stocks.
13. Supply chain integration strategy: Efficient Consumer Response - ECR, basic elements, application effects, EDI, EDIFACT, GS1, EFT, ABC analysis, results control.
14. Review of other strategies: QR, TQM, Process modeling, CM, CPFR, eCommerce fulfillment and others

## Teaching methods

Lecturing, demonstrating, collaborating

## Bibliography

Basic

1. Murphy P.R. jr, Wood D.F.: Nowoczesna Logistyka. HELION, Gliwice, 2011
2. Coyle J., Bardi E., Langley C.: Zarządzanie logistyczne. PWE, Warszawa, 2010

Additional

## Breakdown of average student's workload

| | Hours | ECTS |
|---|---|---|
| Total workload | 75 | 3,0 |
| Classes requiring direct contact with the teacher | 27 | 1,0 |
| Student's own work (preparation for laboratory classes/tutorials, preparation for tests/exam, presentations preparation) [1] | 48 | 2,0 |

[1] delete or add other activities as appropriate