COURSE DESCRIPTION CARD - SYLLABUS

Course name

Designing logistics systems and processes

Course

Field of study

Logistics

Area of study (specialization)

Corporate Logistics

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

Tutorials

Projects/seminars

15

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Paweł Pawlewski

email: pawel.pawlewski@put.poznan.pl

tel. 616653413

Wydział Inżynierii Zarządzania

ul. Jacka Rychlewskiego 2, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

student has extensive knowledge about the use of logistics processes in design? methods of enterprise

integration, simulation technologies, methods of process improvement and improvement, has knowledge of available simulation packages, knows the concepts of process verification using simulation experiments, has knowledge of methods and techniques for process improvement

Course objective

acquiring skills and competences in the field of designing the enterprise's logistics system; understanding of the basic methods used in the design of logistics systems; designing and managing business processes

Course-related learning outcomes

Knowledge

1.the governing dependencies in a given area and their connections with logistics [P7S_WG_01]

2. knows the issues of process mapping, process orientation in logistics and process simulation [P7S_WG_03]

3. knows the extended issues of the life cycle of socio-technical systems (logistics systems) and the life cycle of industrial products [P7S_WG_06]

4. knows the detailed methods, tools and techniques characteristic of the studied subject in logistics [P7S_WK_01]

5. knowledge of phenomena and contemporary trends characteristic of logistics and its specific issues and supply chain management [P7S_WK_03]

Skills

1. can gather based on the literature and other sources (in Polish and English) and provide information in an orderly manner about a problem within logistics and its specific issues, and supply chain management [P7S_UW_01]

2. is able to communicate using properly selected means in a professional environment and in other environments within logistics and its specific issues, and supply chain management [P7S_UW_02]

3. is able to make a critical analysis of technical solutions used in the analyzed logistics system (in particular in relation to devices, objects and processes) [P7S_UW_04]

4. is able to design, using appropriate methods and techniques, an object, system or logistic process and the process associated with it, along with determining the path of its implementation and potential threats or restrictions in this respect [P7S_UW_05]

5. 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 own and other knowledge [P7S_UU_01]

Social competences

1. recognizes the cause-and-effect relationships in achieving the set goals and grading the significance of alternative or competitive tasks [P7S_KK_01]

2. is aware of the responsibility for own work and willingness to comply with the principles of teamwork and taking responsibility for jointly implemented tasks [P7S_KR_01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:
Formative assessment:

- in the area of lectures - presence and activity during classes

- in the area of laboratories - discussion of the implemented model

- in the area of projects - discussion of the implemented project

Summative rating:

- in the area of lectures - exam - discussion of project results, written exam 5 questions, 25 points max. from 13

- in the area of laboratories - presentation and passing of the simulation model

- in the area of projects - presentation and completion of the project

Programme content

System approach to logistics. Designing a logistics system. Methods used in the design of logistics systems. Functional and process orientation in company management. Process approach in logistics. Models and standardization of processes. Process mapping. Process design and implementation of changes. Implementing a process approach in the enterprise. Forms of process organization in an enterprise. Methodology of business process management. Process attributes (parameters), process meters in the context of the company's logistics system and supply chain, Process meters as the basis of process management. Process life cycle. Implementation and financial aspects - management of objectives, resources, efficiency. Measurement of effectiveness and efficiency. Simulation and optimization of processes.

Teaching methods

Lectures - informative lecture (conventional) (transfer of information in a systematic way)?

may be of course (propedeutic) or monographic (specialist) character

Laboratories - Laboratory method (experiment) (independent conducting of experiments by students)

Projects - Project method (individual or team implementation of a large, multi-stage cognitive or practical task, the effect of which is the creation of a work)

Bibliography

Basic

P. Pawlewski, „METHODOLOGY FOR LAYOUT AND INTRALOGISTICS REDESIGN USING SIMULATION2018 Winter Simulation Conference (WSC), Gothenburg, Sweden, 2018, pp. 3193-3204.

P. Pawlewski, Symulacja wsparciem dla Lean, 2019, Kaizen (37), nr 2, kwiecień,-maj 2019, pp. 32-37.

P. Pawlewski, „Built-In Lean Management Tools in Simulation Modeling," 2019 Winter Simulation Conference (WSC), National Harbor, MD, USA, 2019, pp. 2665-2676.

Pawlewski P. (2018) „Using PFEP For Simulation Modeling of Production Systems", Procedia Manufacturing, Volume 17, 2018, Pages 811-818

P. Pawlewski, 7 rzeczy dla milk-run, 2019, Kaizen (38), nr 3, czerwiec-lipiec 2019, pp. 43-47.

Additional

Greenwood A.G., Kluska K., Pawlewski P. (2017) A Multi-level Framework for Simulating Milk-Run, In-plant Logistics Operations. In: Bajo J. et al. (eds) Highlights of Practical Applications of Cyber-Physical Multi-Agent Systems. PAAMS 2017. Communications in Computer and Information Science, vol 722. Springer, Cham

Kluska, K., Pawlewski, P., (2018) „The use of simulation in the design of Milk-Run intralogistics systems", IFAC-PapersOnLine, Volume 51, Issue 11, 2018, Pages 1428-1433

Teoria i inżynieria systemów, Cz. Cempel, Instytut Technologii Eksploatacji - PIB/2008

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	75	3,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	25	1,0

[1] delete or add other activities as appropriate