

SYLLABUS

Name: Industry 4.0 in Logistics
Name in Polish: Przemysł 4.0 w logistyce
Name in English: Industry 4.0 in Logistics

Information on course:

Course offered by department: Faculty of Organisation and Management
Course for department: Silesian University of Technology
Study level and form: Master's degree, Full-time
Term: winter semester (3), 2020/2021
Coordinator of course edition: Prof. PŚ dr hab. Monika Odlanicka-Poczobutt

Default type of course examination report:

zał

Language:

English

Course homepage:

<https://platforma.polsl.pl/roz /course/view.php?id=401#>

ECTS

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Short description:

The aim of the course is to highlight the changes that have occurred through digital transformation, which has affected the entire supply chain. The new model of logistics activities involves the use of solutions focused on innovation and the effective use of ICT.

Description:

Lecture 1 Introduction to Industry 4.0 - basic definitions
 Lecture 2 (R)Evolution of logistics
 Lecture 3 Contemporary directions of logistics development - e-logistics, Smart Logistics, IoT, IoS
 Lecture 4 Application of RFID in logistics
 Lecture 5 Application of RFID solutions outside industry
 Lecture 6 Virtual supply chains and networks
 Lecture 7 Selected IT solutions

Bibliography:

1. Blaik P., 2010. *Logistyka. Koncepcja zintegrowanego zarządzania*, Wyd. PWE, Warszawa, 2010.
2. Bowersox D.J., Closs D.J., Bixby Cooper M. (2010). *Supply chain logistics management*, Boston.
3. Brettel, M., Friederichsen, N., Keller, M., & Rosenberg, M. (2014). *How Virtualization, Decentralization and Network Building Change the Manufacturing Landscape: An Industry 4.0 Perspective*. World Academy of Science, Engineering and Technology, International Journal of Information and Communication Engineering Vol 8, No 1.
4. Bujak A., (2017). *Rewolucja przemysłowa-4.0 i jej wpływ na logistykę XXI wieku*, Czasopismo Logistyka nr 6/2017, s. 1338.
5. Bukowski L. (2019a). *Logistics decision-making based on the maturity assessment of imperfect knowledge*, Engineering Management in Production and Services, Vol 11, Issue 4.
6. Deloitte. (2014). *Industry 4.0. Challenges and solutions for the digital transformation and use of exponential technologies*.
7. *Industry 4.0. Opportunities and challenges of the industrial internet*. <https://www.pwc.pl/pl/pdf/industry-4-0.pdf>
8. Marjan S., Lerher T. Gajšek B., Maturity levels for logistics 4.0 based on nrw's industry 4.0 maturity model, 18 international scientific conference Business Logistics In Modern Management, October 11-12,2018-Osijek, Croatia.
9. Odlanicka-Poczobutt M. (2014). *System automatycznej identyfikacji RFID w bibliotece akademickiej. Cz.1 w: Biblioteka akademicka. Infrastruktura - uczelnia - otoczenie*,. Pod red. M. Odlanickiej-Poczobutt i K. Ziolo, Wydaw. Politechniki Śląskiej, Gliwice 2014, s. 291-305.
10. Odlanicka-Poczobutt M. Barcik R. (2021). *Logistyka 4.0. Logistyka 4.0 – wybrane zastosowania*, Wydawnictwo Towarzystwa Naukowego Organizacji i Kierownictwa – Stowarzyszenie Wyższej Użyteczności „Dom Organizatora”, Toruń 2021. https://repolis.bg.polsl.pl/Content/70898/Barcik-Ryszard_Odlanicka-Poczobutt-Monika_Logistyka-4.0_2020.pdf
11. Schwab K. (2018). *Czwarta rewolucja przemysłowa*. Wydawnictwo Studio Emka, 2018.

Learning outcomes:

E1 At an in-depth level - selected facts, objects and phenomena, as well as methods, theories and conditions explaining the complex relationships between them and constituting advanced general knowledge in the field of mechanical engineering in connection with other fields. K2A_W01
 E2 Main trends of development in the discipline of mechanical engineering in connection with other disciplines. K2A_W02
 E3 Perform tasks as well as formulate and solve problems using new knowledge, including the knowledge from other fields; use analytical, simulation and experimental methods, see their systemic and non-technical aspects, and make a preliminary economic assessment of proposed solutions and undertaken engineering activities. K2A_U02 K2A_U03
 E4 Integrate and use advanced knowledge related to the field of study of management and production engineering when formulating and solving engineering tasks. K2A_U08
 E5 Recognition of the importance of knowledge in solving cognitive and practical problems; consulting experts in the event of difficulties in solving the problem on his/her own. K2A_K02

Assessment methods and assessment criteria:

Credit conditions:

- ✓ Lecture - writing a test on the subject based on lecture materials - 50%;
- ✓ Project - preparation of a presentation of Industry 4.0 in Logistics on the example of selected company - 50% (an example may come from the internet, but it must be labeled with own commentary).

Practical placement:

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