COURSE DESCRIPTION CARD - SYLLABUS

Course name
Production Management in Industry 4.0

Course

Field of study	Year/Semester
Engineering Management	1/2
Area of study (specialization)	Profile of study
Managing Enterprise of the Future	general academic
Level of study	Course offered in
Second-cycle studies	Polish
Form of study	Requirements
part-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
10		
Tutorials	Projects/seminars	
	10	

Number of credit points

3

Lecturers

Responsible for the course/lecturer:	Responsible for the course/lecturer:
Prof. Stefan Trzcieliński, Ph.D., D.Sc., Eng.	Ph.D., Eng. Edmund Pawłowski
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Faculty of Engineering Management	Faculty of Engineering Management
ul. J. Rychlewskiego 2, 60-965 Poznań	ul. J. Rychlewskiego 2, 60-965 Poznań

Prerequisites

General knowledge about machine technology, production control and infrastructure of Industry 4.0

The ability to thematic search and selection of literature sources.

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Course objective

Preparation of the student to organize and manage production systems in the conditions of automated and robotic processes.

Course-related learning outcomes

Knowledge

Knowledge about: functions covered by operations management, technologies and their role in industry 4.0, the consequences of the way the value stream is organized and controled, methods of transforming a company into Enterprise 4.0 [P7S_WG_04], [P7S_WG_05], [P7S_WG_06], [P7S_WG_10].

Skills

Skills in: assessing the impact of external conditions on operations management, generating ideas to solve problems related to operations management, choosing methods to support the transformation of the company into Enterprise 4.0 [P7S_UW_01], [P7S_UW_04], [[P7S_UW_09], [P7S_UO_01].

Social competences

He can work and play various roles in a team [P7S_KK_01], [P7S_KK_02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Individual or team micro-tasks verifying understanding of lecture content done during the lecture.

Project: development of a team project.

Programme content

Technologies that changed the world. Operations / production management functions. Business context of operations / production management. Key technologies of Industry 4.0. Capital and organizational consequences of value stream flow; circular economy. Methods supporting the digital transformation of manufacturing enterprises.

Teaching methods

Conversational lecture with multimedia presentation.

Team project including elements of digital transformation of company into Enterprise 4.0.

Bibliography

Basic

Unstundag A., Cevickan E. (2018). Industry 4.0: Managing the Digital Transformation. Springer, Cham.

Bartodziej Ch.J. (2017) The Concept Industry 4.0. Springer, Wiesbaden.

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Trzcieliński S. (2020). Stan dostosowania systemow utrzymania ruchu do warunkow Przemysłu 4.0. Red. S. Gregorczyk, G. Urbanek, Zarządzanie Strategiczne w Dobie Cyfrowej Gospodarki Sieciopwej. Wydawnictwo Uniwersytetu Łódzkiego, Łódź.

Additional

Sharma, K.L.S. (2017). Overview of Industrial Process Automation, Elsevier Inc.

Artyuły dostępne na Research Gate; Aricles available at Research Gate

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	25	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests, project preparation) [1]	50	2,0

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[1] delete or add other activities as appropriate