COURSE DESCRIPTION CARD - SYLLABUS

Course name
Management of Information Systems in Industry 4.0 [S2IZarz1E-ZPP>ZSIwP]

Course

Field of study
Engineering Management

Year/Semester
1/2

Area of study (specialization)
Managing Enterprise of the Future

Profile of study
general academic

Level of study
second-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
15

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge of Industry 4.0

Course objective

The aim of the course is to present the IT systems used by Industry 4.0 and the possibilities of managing them.

Course-related learning outcomes

Knowledge:
The student defines the principles of design, implementation and management of integrated information systems within the concept of Industry 4.0, with particular emphasis on cloud solutions and intra-enterprise communication [P7S_WG_02].
The student explains the methods and tools used to model information processes in an enterprise from the perspective of Industry 4.0, including virtualization and VPS servers [P7S_WG_05].
The student characterizes the architecture and management of IT infrastructure in networked organizations, including the impact of virtual business units on operational efficiency [P7S_WG_06].
The student describes modern systems, facilities and technical devices used in information systems and

their impact on business organizations in Industry 4.0 [P7S_WG_10].

Skills:
The student applies knowledge of information systems to create strategies for managing data and technology infrastructure in the context of Industry 4.0 [P7S_UW_01].
The student conducts critical analysis and optimization of existing IT systems, identifying the potential to improve them using the latest cloud solutions [P7S_UW_04].
The student plans and implements IT solutions, such as cloud computing, to increase the flexibility and scalability of business operations [P7S_UW_09].

Social competences:
The student integrates multidisciplinary technical, business and operational aspects to effectively manage IT systems in Industry 4.0 enterprises [P7S_KK_01].
The student analyzes cause-effect relationships in the area of information systems and sets priorities in solving complex IT problems [P7S_KK_02].
The student plans and manages IT projects, taking into account the strategic goals of the company in terms of innovation and competitiveness in the market of Industry 4.0 [P7S_KO_03].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Knowledge acquired during the lecture is verified by completing one problem-solving task and a final test, pass mark: 50% of points.
Exercises: Students complete group tasks that are assessed.

Programme content

1. Discussion of Industry 4.0 as a modern concept.
2. Presenting IT solutions for intra-company communication.
3. Cloud solutions - solution review and operation overview.
4. Implementation of cloud computing in the enterprise - virtualization, VPS servers for Public and Private Cloud.
5. Cloud computing management using Public Cloud.

Course topics

Lecture / exercises:
1. Discussion of Industry 4.0 as a modern concept.
2. Presentation of IT solutions for intra-company communication.
3. Cloud solutions - overview of solutions and discussion of operation.
4. Implementation of cloud computing in the enterprise - virtualization, VPS servers for Public and Private Cloud.
5. Management of cloud computing using Public Cloud.

Teaching methods

Lecture: multimedia presentation, illustrated with examples on the board.
Project: lecturers - multimedia presentation, students - multimedia and graphic presentation (poster), short lecture, lecture

Bibliography

Basic:
1. Scrum. O zwinnym zarzadzaniu projektami, Chrapko Mariusz, Helion, 2014
2. Czwarta rewolucja przemysłowa Schwab Klaus, Wydawnictwo Emka, 2018

Additional:
1. The Scrum Fieldbook: Faster performance. Better results. Starting now.J.J. Sutherland , 2019;
2. The Fourth Industrial Revolution, Schwab Klaus, 2017

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00