



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Management of Information Systems in Industry 4.0 [S2IZarz1E-ZPP>ZSlwP]

### 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

dr inż. Katarzyna Ragin-Skorecka

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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 zarządzaniu 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