



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Management of Information Systems in Industry 4.0

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### Course

Field of study

Engineering Management

Area of study (specialization)

Managing Enterprise of the Future

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

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### Number of hours

Lecture

15

Tutorials

Laboratory classes

Projects/seminars

15

Other (e.g. online)

### Number of credit points

2

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### Lecturers

Responsible for the course/lecturer:

Ph.D., Eng. Michał Trziszka

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Faculty of Engineering Management

ul. J. Rychlewskiego 2, 60-965 Poznań

Responsible for the course/lecturer:

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### 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:

Knowledge acquired during the lecture is verified by one colloquium at the last lecture. The test consists of 10-15 questions (test and open), variously scored. Passing threshold: 50% of points. Final issues on the basis of which questions are prepared will be sent to students by e-mail using the university e-mail system.



During exercises, students work in groups on specific topics, which they present in the form of a multimedia presentation. For each of the 7 tasks students receive grades (7 grades). The final grade is the average of these 7 ratings. The content of the tasks is related to the subject, and the scope of tasks includes lecture issues.

### 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.

### 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

Scrum. O zwinnym zarządzaniu projektami, Chrapko Mariusz, Helion, 2014

Czwarta rewolucja przemysłowa Schwab Klaus, Wydawnictwo Emka, 2018

Additional

The Scrum Fieldbook: Faster performance. Better results. Starting now.J.J. Sutherland , 2019;

The Fourth Industrial Revolution, Schwab Klaus, 2017

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests, project preparation) <sup>1</sup>	20	1,0

<sup>1</sup> delete or add other activities as appropriate