



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Infrastructure of Industry 4.0

### Course

Field of study

Engineering Management

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

3/6

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

10

Laboratory classes

Tutorials

Projects/seminars

Other (e.g. online)

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

Michał Trziszka Ph.D., Eng.

Responsible for the course/lecturer:

Faculty of Engineering Management

Institute of Management and Information  
Systems

Department of Management Systems

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### Prerequisites

Contemporary production management concepts. Basic knowledge about industry 4.0.

### Course objective

The aim of the course is to familiarize students with the basic concepts related to industry 4.0 and its impact on the functioning of enterprises in terms of program and server infrastructure.



### **Course-related learning outcomes**

#### Knowledge

1. has basic knowledge of machine life cycle
2. has basic knowledge of the life cycle of industrial products

#### Skills

1. is able to use analytical, simulation and experimental methods to formulate and solve engineering tasks
2. is able to identify design tasks and solve simple design tasks in the field of machine construction and operation
3. is able to design the construction and technology of simple machine parts and subassemblies, and design the organization of first-stage complexity production units

#### Social competences

1. is aware that creating products that meet the needs of users requires a systematic approach taking into account technical, economic, marketing, legal, organizational and financial issues
2. is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the associated responsibility for the decisions taken

### **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.

### **Programme content**

1. Introduction to Industry 4.0 - concept, scope of impact
2. Cyber-physical systems. Virtualization, modeling and examples of use.
3. Internet of Things. Characteristics, implementation requirements.
4. Cloud computing.



5. Cloud infrastructure solutions
6. Impact of the development of industry 4.0 on the functioning of enterprises.
7. Management in industry 4.0

### Teaching methods

Lecture: multimedia presentation, illustrated with examples on the board.

### Bibliography

Basic

Czwarta rewolucja przemysłowa, Schwab Klaus, Wydawnictwo Studio Emka, 2018

Additional

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	10	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	40	1,5

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