



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Organization auxiliary processes

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### Course

Field of study

Management engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/4

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

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### Number of hours

Lecture

15

Tutorials

15

Laboratory classes

Projects/seminars

Other (e.g. online)

### Number of credit points

3

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### Lecturers

Responsible for the course/lecturer:

dr hab. inż. Małgorzata Jasiulewicz-Kaczmarek

Wydział Inżynierii Zarządzania

Instytut Inżynierii Bezpieczeństwa i Jakości

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Responsible for the course/lecturer:



### Prerequisites

The student starting this subject should have knowledge of the basics of business operations, design of technological processes, basics of machine construction and organization of production. He should also be able to obtain information from sources indicated by the teacher and be ready to cooperate within a team.

### Course objective

Acquiring by the student the knowledge (systematics and methodology) needed to shape processes supporting the implementation of basic processes in the enterprise

### Course-related learning outcomes

#### Knowledge

P6S\_WG\_17; P6S\_WG\_18: has detailed knowledge about the functioning and trends of development of ancillary processes and issues in the field of technical safety and health and safety related to the implementation of these processes

P6S\_WG\_15; P6S\_WG\_16; P6S\_WK\_02: knows the issues of the life cycle of devices, objects, systems and technical systems, as well as methods and techniques of quality engineering supporting the achievement of the goals of each phase of the life cycle

#### Skills

P6S\_UW\_11; P6S\_UW\_13; P6S\_UW\_14: is able to select adequate sources and information necessary for the assessment and analysis of the functioning of auxiliary processes in the enterprise, is able to correctly formulate conclusions from the analysis and correctly select the means of communication for their presentation for various environments within the enterprise and outside.

P6S\_UW\_15; P6S\_UW\_16: using the right methods can design and present selected elements of support processes, taking into account security aspects, indicating elements that due to potential changes in requirements may result in the need to adapt or build new standards.

#### Social competences

P6S\_KK\_01; P6S\_KO\_01; P6S\_KO\_02: understands that knowledge and skills in the field of auxiliary processes requires continuous improvement due to the development of new technologies developed in basic processes and new threats that are introduced into the work environment.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired during the lecture is verified on an ongoing basis during classes, through short exercises performed during the lecture, and based on one test (about 30 minutes) at the last lecture. Tests consist of 20-30 (test) questions, scored on a two-point scale of 0, 1. Passing threshold: 50% of points. Assessment issues on the basis of which questions are prepared are based on the content provided to students during lectures, and additional materials indicated by the teacher.



Skills acquired as part of the tutorials are verified on an ongoing basis based on the tasks performed by the students during the classes.

Skills acquired during design classes are verified on an ongoing basis based on the progress of design work, at the end of classes based on the completed design task and its presentation on the forum

### Programme content

Lecture:

1) Maintenance: a) reliability (reliability functions), durability, moral wear; systems, methods, principles of operating technical facilities as well as workshop tools and aids; b) maintenance in the life cycle of the machine; c) tendencies to improve the process of technical systems service (TPM, RCM, Maintenance 4.0); d) management of spare parts and consumables; e) measures and indicators for assessing the efficiency of technical facilities and maintenance.

2) Warehouse management: a) functions and types of warehouses, b) storage program and size of the warehouse, c) means of transport and storage facilities, d) functional and spatial arrangements of warehouses, methods of storage; e) classification and technical solutions of transport systems in warehouses; f) organization of warehouse work.

Exercises:

Calculation of KPIs (e.g. MTBF, MTTR, ...), analysis of an emergency event, reporting an emergency event by the operator, instructions for replacing parts by a technical department / operator (e.g. OPL), checklist of machine receipt after repair, selection of means of transport and warehouse equipment, warehouse work instructions

Project: Designing a selected element of the support process (maintenance, warehouse management)

### Teaching methods

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

2) Exercises: multimedia presentation illustrated with examples given on a blackboard and performance of tasks given by the teacher - practical exercises.

3) Project: discussion of proposals for solutions to design issues and presentation on the forum

### Bibliography

Basic

Legutko S., Eksploatacja maszyn, Wydawnictwo Politechniki Poznańskiej, Poznań 2007

Kolman M (red)., Zarządzanie magazynem Zapasy, WMS, Lean, Bezpieczeństwo, Wydawnictwo: Wiedza i Praktyka 2019



Antosz K., METODYKA MODELOWANIA OCENY I DOSKONALENIA KONCEPCJI LEAN MAINTENANCE, Politechnika Rzeszowska, Rzeszów 2019

Jasiulewicz-Kaczmarek M., Sustainable maintenance assessment model of enterprise technical infrastructure. Wydawnictwo Politechniki Poznańskiej, Poznań 2019

Additional

Antosz K., Utrzymanie ruchu – identyfikacja i analiza luki kompetencyjnej, Eksploatacja i Niezawodność – Maintenance and Reliability 2018; 20 (3): 484–494, <http://dx.doi.org/10.17531/ein.2018.3.19>.

Losta A., Wybrane aspekty komputerowego wspomaganie zarządzania eksploatacją i utrzymaniem ruchu. Oficyna Wydawnicza Polskiego Zarządzania Produkcją, Opole 2012

Journals:

Inżynieria & Utrzymanie Ruchu Zakładów Przemysłowych,

Służby Utrzymania Ruchu,

Logistyka

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	45	1,5

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