



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Organization of Supporting Processes

Course

Field of study

Engineering Management

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

English

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

Other (e.g. online)

Tutorials

15

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

Faculty of Engineering Management

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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

The student describes the functions of reliability, durability, and moral wear of machines, as well as the principles of handling technical objects [P6S_WG_15].

The student identifies methods, techniques, tools, and materials used in maintenance and warehouse management [P6S_WG_16].

The student characterizes industrial technologies used in maintenance processes, including TPM (Total Productive Maintenance), RCM (Reliability Centered Maintenance), and Maintenance 4.0 [P6S_WG_17].

The student explains the basic principles of safety and hygiene in the context of maintenance and warehouse management [P6S_WG_18].

The student has knowledge about quality management and conducting business activities in the aspect of maintenance [P6S_WK_02].

Skills

The student analyzes technological processes and production systems, considering their systemic, organizational, and economic aspects [P6S_UW_11].

The student critically evaluates maintenance processes and warehouse work organization, using measures and indicators of efficiency [P6S_UW_13].

The student identifies and solves design tasks related to maintenance, including management of spare parts and consumables [P6S_UW_14].

The student applies methods to solve problems in the area of maintenance and warehouse management [P6S_UW_15].

The student designs the organization of auxiliary processes, including functional-spatial layouts of warehouses and transport systems [P6S_UW_16].

Social competences

The student independently searches for and utilizes educational resources to develop competencies in the field of maintenance and warehouse management [P6S_KK_01].



The student substantively contributes to projects related to the organization of auxiliary processes, considering legal, economic, and organizational aspects [P6S_KO_01].

The student is aware of the importance of a systemic approach in creating efficient auxiliary processes, considering technical and economic aspects [P6S_KO_02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

- a) tutorials: assessment of current progress of task implementation
- b) lectures: answers to questions about the content of previous lectures,

Summative rating:

- a) tutorials: presentation of reports on exercises performed (arithmetic average of partial grades);
- b) lectures: The pass a test questions, scored on a two-point scale of 0, 1. Passing threshold: 50% of the points.

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.

Tutorials:

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) Tutorials: 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

Dhillon B.S., Engineering maintenance : a modern approach. 2002,

http://site.iugaza.edu.ps/sabdelall/files/2010/02/Engineering_Maintenance_a_modern_approach.pdf

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., Maintenance – identification and analysis of the competency gap, Eksploatacja i

Niezawodność – Maintenance and Reliability 2018; 20 (3): 484–494,

<http://dx.doi.org/10.17531/ein.2018.3.19>.

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	35	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests, project preparation) ¹	40	1,5

¹ delete or add other activities as appropriate