COURSE DESCRIPTION CARD - SYLLABUS

Course name
Organization auxiliary processes [N1IBez2>OPPom]

Course

Field of study
Safety Engineering

Year/Semester
3/5

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
polish

Form of study
part-time

Requirements
elective

Number of hours

Lecture
10

Laboratory classes
0

Other (e.g. online)
0

Tutorials
18

Projects/seminars
8

Number of credit points

4,00

Coordinators

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Lecturers

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:
1. Knows concepts of technical safety, safety systems, Occupational Health and Safety and problems of hazards and their consequences [K1_W02].
2. Knows advanced knowledge about concepts of the life cycle of industrial products and life cycle of objects, systems and technical systems [K1_W06].
3. Knows advanced knowledge about concepts of engineering management in the field of product and

process [K1_W07].
4. Knows the fundamental problems of modern civilization and development trends as well as best practices [K1_W10].

Skills:
1. Is able to collect on the basis of the literature of the subject and other sources information on the problem, make critical analysis, assessment and synthesis [K1_U01].
2. Is able to communicate using appropriately selected resources in a professional environment and in other environments [K1_U02].
3. Is able to make a critical analysis of the way it functions and assess - in conjunction with Safety Engineering - existing technical solutions, in particular machines, devices, objects, systems, processes and services [K1_U06].
4. Can design an object, system or process that meets the requirements of safety engineering using appropriate methods and techniques and make a preliminary economic assessment [K1_U07].
5. Is able to take part in the debate, present using properly selected means, a problem within the framework of safety engineering [K1_U09].
6. Is able to identify changes in requirements, standards, regulations and technical progress and the reality of the labor market, and based on them determine the needs of supplementing knowledge [K1_U12].

Social competences:
1. Is aware of the importance of knowledge in solving cognitive and practical problems in the scope of safety engineering and continuous improvement of the knowledge [K1_K02].
2. Is aware of responsibility for own work and readiness to comply with the rules of working in a team and taking responsibility for the tasks carried out jointly [K1_K07].

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 Niezawodnosc – Maintenance and Reliability 2018; 20 (3): 484–494, http://dx.doi.org/10.17531/ein.2018.3.19.
Losta A., Wybrane aspekty komputerowego wspomagania zarządzania eksploatacją i utrzymaniem ruchu. Oficyna Wydawnicza Polskiego Zarzadzania Produkcją, Opole 2012
Czasopisma:
Inżynieria & Utrzymanie Ruchu Zakładów Przemysłowych,
Służby Utrzymania Ruchu,
Logistyka

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	36	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	64	2,00