COURSE DESCRIPTION CARD - SYLLABUS

Course name
Standardization in safety and quality management [S1IBiJ1>NwZBiJ]

Course

Field of study
Safety and Quality Engineering

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
0

Tutorials
15

Projects/seminars
15

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

The student knows and understands the basic concepts of the organization's activities, especially management sciences (at the high school level). The student is able to interpret the phenomena occurring in the business and work environment and their impact on the functioning of the organization. Uses the known methods of researching phenomena and relations, and applies logical thinking to associate and evaluate them.

Course objective

Acquainting with the construction of ISO standards and the HLS concept. Presentation of the subject of the use of standards, as well as the way of their interpretation. Initial preparation of it for the use of standards in professional life and decisions regarding the activities of the organization. The acquired knowledge, skills and competences will allow the student to initially recognize problems in the field of adapting the work of the organization and its effects (products) to market requirements.

Course-related learning outcomes

Knowledge:
1. Describes the structure, ISO standards requirements, and the concept of High Level Structure,

identifying differences between individual standards and their significance for safety and quality management [K1_W02].
2. Characterizes phenomena related to the life cycle of products, devices, objects, systems, and technical systems, emphasizing their impact on safety and quality [K1_W06].
3. Lists key issues in quality engineering focused on optimizing processes and products in the context of quality norms and standards [K1_W07].

Skills:
1. Interprets selected standards, including the CE mark, using skills in identifying and analyzing norm requirements and High Level Structure [K1_U01].
2. Recognizes systemic, socio-technical, organizational, and economic aspects related to standardization in safety and quality management [K1_U03].
3. Analyzes and evaluates existing technical solutions in the context of applicable norms and standards, proposing optimizations to enhance safety and quality [K1_U06].
4. Classifies changes in requirements, standards, and regulations, adjusting safety and quality management strategies to current regulations [K1_U12].

Social competences:
1. Develops awareness of the importance of knowledge in the field of standardization for solving problems in safety and quality engineering, aiming for continuous improvement [K1_K02].
2. Becomes aware of the non-technical aspects and consequences of engineering activity, including environmental impact, and takes responsibility for decisions made in the context of norms and standards [K1_K03].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:
- classes: evaluation of the exercises and tasks to be performed independently (60% of the final mark), evaluation of the written test (40% of the final mark);
- project: preparation of a project on a given topic (evaluation for each stage) and its presentation.
Passing on the first and second attempt min. 50% of all points.

Programme content

The topics of the classes include the issues of standardization in product safety and quality.

Course topics

Exercises:
Tasks on the construction of ISO standards including identification of the requirements of the standards; identification of the High Level Structure concept; division of standards.
Project: Analysis of selected standards including their interpretation with particular emphasis on the CE mark.

Teaching methods

Classes: subject exercises in connection with the analysis of case studies and elements of the problem lecture.
Projects: design method with case study analysis.

Bibliography

Basic:
1. Bugdol M., Jedynak P., Współczesne systemy zarządzania. Jakość, bezpieczeństwo, ryzyko, Wyd.HELION, Gliwice 2012.
2. Urbaniak M., Zarządzanie jakością. Teoria i praktyka, Wyd. Difin, Warszawa 2004.
3. Tomaszewski Z. (2002), Bezpieczeństwo wyrobów oraz ich zgodność ze standardami Unii Europejskiej, Wydawnictwo Politechniki Poznańskiej, Poznań.
4. Standards given in classes.

Additional:
1. Stasiuk-Piekarska A., Innowacyjne wykorzystanie założeń metody FMEA dla potrzeb zarządzania ryzykiem organizacyjnym w systemach produkcyjnych [w:] Problemy Jakości 6/2017, Wyd. Sigma-NOT, DOI: 10.15199/48.2017.6.4 , s. 26-31.
2. Starzyńska B., Hamrol A., Grabowska M., Poradnik menadżera jakości. Kompendium wiedzy o narzędziach jakości, COMPRINT-Wydawnictwo Politechniki Poznańskiej, Poznań 2010.
3. Hamrol A., Mantura W., Zarządzanie jakością teoria i praktyka, Wydawnictwo Naukowe PWN, Warszawa 2005.
4. Mrugalska B., Prussak W., Projektowanie systemów bezpieczeństwa, Wyd. Politechniki Poznańskiej, Poznań 2011.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	0,50