



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Quality engineering 2 [S1IBez2>IJ2]

### Course

Field of study

Safety Engineering

Year/Semester

3/6

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

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

15

Projects/seminars

30

### Number of credit points

4,00

### Coordinators

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### Lecturers

### Prerequisites

Knowledge and skills related to engineering aspects of the quality of products, processes and systems. Knowledge of quality management tools that can be used in various aspects related to security issues.

### Course objective

Providing students with knowledge and skills related to engineering aspects of pro-quality systems. Acquainting students with the essence of normalization and standardization, indicating links with selected pro-quality systems in relation to systems and products. To familiarize students with selected methods of quality engineering.

### Course-related learning outcomes

Knowledge:

The student knows the issues related to quality engineering and knows how they are related to the quality level of products and processes [K1\_W07].

Skills:

The student is able to use the appropriate methods and techniques to design a selected production

process in an organization using the process description model included in ISO 9001: 2015 and to assess the economic aspects related to the certification of the quality management system [K1\_U07].

The student is able to interpret and apply the requirements of the ISO 9001: 2015 standard to design selected elements of the quality management system and connect these issues with safety engineering [K1\_U08].

The student individually or in a team is able to plan, organize and implement the process of identifying threats in the process, propose improvement actions and then, as a result of simulation, evaluate the results after the implementation of these actions and draw conclusions [K1\_U11].

Social competences:

The student notices the cause-effect relationships, is able to define priorities in pursuit of the goals set in the tasks and projects being implemented [K1\_K01].

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Tutorials:

Formative assessment: ongoing assessment of the tasks performed. For each task the student receives the number of points specified in the conditions for passing the task. It is possible to complete the task with a minimum of 51% of the points.

Summative assessment: each task must be passed for a minimum of 51%, the sum of points obtained for each task is converted into a grade. The grade is entered according to the following rules: 96 - 100 points - Very Good; 84 - 95 points - Good plus; 73 - 83 points - Good; 61 - 72 points - Satisfactory plus; 51- 60 points - Satisfactory; 00 - 50 points - Unsatisfactory.

Design:

Formative assessment: assessment of the current progress of the project stages. For each stage of the project, the Student receives a certain number of points. Each stage must be passed at a minimum of 51%.

Summative assessment: the assessment is the sum of the points obtained for all stages of the project. Passing threshold 51%. The grade is entered according to the following rules: 96 - 100 points - Very Good; 84 - 95 points - Good plus; 73 - 83 points - Good; 61 - 72 points - Satisfactory plus; 51- 60 points - Satisfactory; 00 - 50 points - Unsatisfactory.

Lecture:

Formative assessment: answers to questions about the content of previous lectures,

Summative assessment: Test of the knowledge provided during the lectures, scored on a two-point scale 0, 1. Passing point: 51% of points.

## Programme content

Lecture: Principles of quality management. Pro-quality systems related to the functioning of the organization. Quality management system acc. To ISO 9001: 2015 - selected elements.

Tutorials: Quality management methods used in quality engineering of processes, products and systems.

Application of quality function expansion to solving problems related to safety engineering. FMEA method process - application in the areas of safety engineering. Quality plan - a method of designing, monitoring, supervising and improving processes.

Project: Selected elements of the quality management system according to ISO 9001: 2015. Practical application of the principles of quality management. The context of the organization. Analysis of the company's surroundings and design of the quality policy. Determining the scope of the quality management system. Business process map. Process documentation templates. Basics of the risk-based approach.

## Teaching methods

Lecture: information lecture, problem lecture, work with a book, lecture.

Tutorials: problem lecture, lecture with explanation and explanation, case study, brainstorming

Project: case study, brainstorming, project method

## Bibliography

Basic:

Jasiulewicz-Kaczmarek M., Misztal A., Projektowanie i integracja systemów zarządzania

projakściowego, Wydawnictwo PP, Poznań 2014.

Mazur A., Gołaś H., Zasady, metody i techniki wykorzystywane w zarządzaniu jakością, Wydawnictwo Politechniki Poznańskiej, ISBN 978-83-7143-908-7, Poznań 2010, s. 113.

Mazur A., Małecka J., Kompleksowe wykorzystanie metod i narzędzi jakości w FMEA procesu, Problemy Jakości 07/2019, s. 14-19.

Zymonik Z., Hamrol A., Grudowski P., Zarządzanie jakością i bezpieczeństwem Polskie Wydawnictwo Ekonomiczne, 2013.

PN-EN ISO 9001:2015 System zarządzania jakością. Wymagania. PKN, Warszawa, 2016.

PN-EN ISO 9000:2015. System zarządzania jakością. Podstawy i terminologia. PKN, Warszawa, 2016.

Additional:

Gołaś H., Mazur A., Piasek P., Czajkowski P., Zastosowanie standaryzacji w procesie kontroli jakości wyrobów, Problemy Jakości 2/2017, s. 10-14.

Prussak W., Jasiulewicz-Kaczmarek M., Wydawnictwo Politechniki Poznańskiej, Poznań 2010 .

### Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	60	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	40	1,50