COURSE DESCRIPTION CARD - SYLLABUS

Course name
Quality engineering 1

Course

Field of study
Safety Engineering
Area of study (specialization)

Level of study
First-cycle studies
Form of study
full-time

Year/Semester
3/5
Profile of study
general academic
Course offered in
Polish
Requirements
compulsory

Number of hours

Lecture
15
Tutorials

Laboratory classes
15
Projects/seminars

Other (e.g. online)

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
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Responsible for the course/lecturer:
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Prerequisites

Basic knowledge of technical issues, statistics and work organization

Course objective

Acquiring knowledge and skills related to engineering aspects of product and process quality, in particular regarding quality evaluation, methods of product quality control as well as critical process control points and their supervision

Course-related learning outcomes

Knowledge

1. The student has advance knowledge of quality engineering in relation to products and processes [K1_W07].

Skills

1. The student is able to design, using appropriate methods and techniques, an object, system or process that meets the requirements of safety engineering and make its initial economic assessment [K1_U07].

2. The student is able to apply standards and norms in solving practical engineering tasks in the field of Safety Engineering [K1_U08]

3. The student is able to plan, organize and implement individual and team work and carry out experiments, including measurements and computer simulations, interpret the obtained results and draw conclusions [K1_U11]

Social competences

1. The student is able to see the cause-effect relationships in the implementation of the set goals and use the ranks in relation to the significance of alternative or competitive tasks [K1_K01]

2. The student is aware of the importance of knowledge in solving problems in the field of safety engineering and continuous improvement [K1_K02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

a) Laboratory: 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.

b) lectures: answers to questions about the content of previous lectures,

Summative assessment:

a) Laboratory: 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 - Sufficient plus; 51– 60 points - Fair; 00 - 50 points - Insufficient.

b) lectures: The test consists of 20-30 questions (test), scored on a two-point scale 0, 1. Passing point: 50% of points. Passing issues, on the basis of which the questions are developed, are based on the content provided to students during the lectures and additional materials indicated by the teacher.

Programme content

Lecture:

Basic concepts related to quality, product quality features, quality engineering in product design, manufacture, operation and utilization, quality assessment and analysis, quality control and control, tools and methods of quality control and SKO and SPC control, visualization tools, determining causes and effects and determining the importance of problems affecting product quality.

laboratory classes:

Tools used to visualize quality problems: flowchart, flowchart, process map, control sheet - examples. Tools used to identify the causes and effects of quality problems: Ishikawa diagram, relationship diagram, matrix diagram - examples. Tools used to determine the importance of problems with quality, e.g. the Pareto-Lorentz diagram.

Teaching methods

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

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

Bibliography

Basic

Hamrol A.: Zarządzanie i inżynieria jakości. Warszawa PWN, Warszawa 2017.

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

Mazur A., Iwanowicz A., Ławniczak I., Mazurek P., Doskonalenie stanowiska pracy operatora wózka widłowego z wykorzystaniem instrumentarium zarządzania jakością, Logistyka nr 6/2014, Instytut Logistyki i Magazynowania, Poznań, 2014, s. 12310-12315.

Prussak W., Jasiulewicz-Kaczmarek M., Elementy inżynierii systemów zarządzania jakością. Wydawnictwo Politechniki Poznańskiej, Poznań 2010 .

Sałaciński T.: Inżynieria jakości w technikach wytwarzania. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2016.

Additional

Grudowski P., Przybylski W., Siemiątkowski M.: Inżynieria jakości w technologii maszyn. Wydawnictwo Politechniki Gdańskiej, Gdańsk 2006.

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, laboratory classes [1]	30	1,0

[1] delete or add other activities as appropriate