



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

part-time

Year/Semester

3/5

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

10

Laboratory classes

10

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Małgorzata Jasiulewicz-Kaczmarek

Wydział Inżynierii Zarządzania

Instytut Inżynierii Bezpieczeństwa i Jakości

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Responsible for the course/lecturer:

dr inż Anna Mazur

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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

P6S_WG_07: The student knows the basic methods, techniques and tools used in quality engineering. has expanded, theoretically founded general knowledge related to statistical methods used in process control and product control

Skills

P6S_UW_07: Student is able to obtain information from literature, databases and other sources; interpret and critically evaluate them, can form opinions related to the causes and errors of production resulting in a decrease in the quality of production.

P6S_UW_07: Student is able to effectively use methods and tools used in quality engineering

Social competences

P6S_KK_01; P6S_KK_02: understands that knowledge and skills in identifying problem / incompatibility analysis needs to be systematically supplemented, recognizes the cause-and-effect relationship between events / incompatibilities and can rank and prioritize them.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

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

Summative rating:

- a) exercises: presentation of reports on exercises performed (arithmetic average of partial grades);
- b) lectures: Tests consist of 20-30 questions (test), 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.

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.

exercises:

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. Exercises: 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 zarządzaniu 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	75	3,0
Classes requiring direct contact with the teacher	20	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	55	1,5

¹ delete or add other activities as appropriate