

# Quality Management - course description

General information	
Course name	Quality Management
Course ID	06.9-WM-MaPE-P-QM-23
Faculty	<a href="#">Faculty of Mechanical Engineering</a>
Field of study	Management and Production Engineering
Education profile	academic
Level of studies	First-cycle studies leading to Engineer's degree
Beginning semester	winter term 2023/2024

Course information	
Semester	5
ECTS credits to win	2
Course type	obligatory
Teaching language	english
Author of syllabus	<ul style="list-style-type: none"><li>dr inż. Joanna Cyganiuk</li></ul>

Classes forms					
The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	15	1	-	-	Credit with grade
Project	15	1	-	-	Credit with grade

## Aim of the course

The aim of the course is to provide basic knowledge in the field of quality and safety management, in particular, to familiarize students with the modern concept of management through quality and the basics of total quality TQM in the company, taking into account the environment and occupational safety for the use in the further education process and future work.

## Prerequisites

Business management

## Scope

**The lecture covers the following issues:**

W 1. Introduction to quality management.

W 2. Quality management philosophy. Quality management concepts.

W 3. Quality management through the total commitment - the concept of TQM.

W 4. Quality management by complying with recognized standards - ISO 9000 standards, automotive, defense and food standards.

W 5. Quality management by measuring the effectiveness and efficiency of activities - SPC, SIX SIGMA. 8 principles of quality management.

W 6. Deming's philosophy - model, cycle, 14 principles. Tools supporting quality management.

W 7. Design methods for quality (QFD, FMEA, DoE). Control methods including statistical control techniques. Implementing quality management. Quality costs. Environmental management system according to ISO 14001, occupational safety management system according to ISO 18001, HACCP product safety system, good practice system (GAP, GMP, GHP, GLP).

W 8. Designing the company's strategy, taking into account quality, environment and work safety.

**The project covers the following issues:**

P 1. Selected QMS methods - as instruments for continuous improvement of processes or products.

P 2. Practical application of QFD, FMEA, DoE methods.

P 3. Identification and defining quality problems.

P 4. Selection of methods and tools in quality management to solve practical problems related to the identification and analysis of defects in products or processes.

P 5. Ability to identify and prioritize causes of errors in the process.

P 6. Indication of actions that could eliminate or at least reduce the possibility of potential errors in the product.

P 7. Proposing a comprehensive solution of the identified problem.

## Teaching methods

**Lecture** - conventional.

**Project** – group work, brainstorming.

## Learning outcomes and methods of theirs verification

Outcome description	Outcome symbols	Methods of verification	The class form
He/She knows the rules of occupational health and safety, is able to design and apply safe working conditions while maintaining ergonomics and process optimization.	• <a href="#">K_U18</a>	• a preparation of a project	• Project
He/She has structured and theoretically based general knowledge in the field of management, in particular quality management, occupational safety and ergonomics in production using the methods of Mechanical Engineering.	• <a href="#">K_W23</a>	• an exam - oral, descriptive, test and other	• Lecture
He/She is able to list and interpret the standards of the ISO series. Is aware of the importance and understanding of non-technical aspects and effects of engineering activities, including its impact on the environment, and the related responsibility for decisions made.	• <a href="#">K_W29</a>	• an exam - oral, descriptive, test and other	• Lecture
He/She can use the known analytical methods and quality management tools to simulate and evaluate quality management systems, make decisions and plan of the production.	• <a href="#">K_U13</a>	• a preparation of a project • a project	• Project
He/She can choose the appropriate method of supporting decision-making in management. On the basis of decision analysis, he/she is able to interpret the source of a quality problem. He/she is able to choose the right tool and develop a system that eliminates the problem, meeting the requirements / specifications.	• <a href="#">K_W28</a>	• a preparation of a project	• Project

## Assignment conditions

**Lecture** - to pass the lecture part Student has to obtain a positive mark from the test, which includes the verification of knowledge of basic issues. The student gets 5 questions about the topics of the subject. The final test mark consists of marks from 5 questions. The average mark of 5 questions is entered.

**Project** - to pass the lecture part Student has to obtain a positive mark consisting of positive marks from three partial projects, confirming the skills acquisition related to the implementation of project tasks to be implemented under the laboratory program. The average rating is the final laboratory mark. Projects should be made in electronic form and in the form of presentations.

**Course credit:** The final grade for the course is the arithmetic average of the grades from the exam and the project.

## Recommended reading

1. Abuhav I. , ISO 9001: 2015 - A Complete Guide to Quality Management Systems, CRC Press, 2021,
2. Dentch M.P., The ISO 9001:2015 Implementation Handbook: Using the Process Approach to Build a Quality Management System, ASQ Quality Press, 2016
3. Kiran D.R., Total Quality Management: Key Concepts and Case Studies, BSP BH, 2016,
4. Rocha-Lona L. et al, Building Quality Management Systems: Selecting the Right Methods and Tools 1st Edition, CRC Press, 2013,
5. Tricker R., Quality Management Systems: A Practical Guide to Standards Implementation, Routledge, 2019,

## Further reading

## Notes

Brak

Modified by dr inż. Joanna Cyganiuk (last modification: 30-04-2023 19:35)

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