



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Quality tools and methods

Course

Field of study

Production Engineering and Management

Area of study (specialization)

Quality Management

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

Polish

Requirements

elective

Number of hours

Lecture

30

Laboratory classes

Other (e.g. online)

Tutorials

15

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

PhD. Beata Starzyńska

email: beata.starzynska@put.poznan.pl

ph. 61 665 27 41

Faculty of Mechanical Engineering

Piotrowo Street, No 3 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Student has a fundamental knowledge in the field of management basics and in the field of quality and safety management; Student has an ability enabling her/him to select and use in practice management methods and techniques as well as basic quality tools; Student is aware of the role and the importance of quality category in manufacturing enterprises functioning.



Course objective

To acquaint the student with extended knowledge in the field of quality management methods and tools, dedicated towards quality problem solutions and improvement activities as concerns the processes; to develop abilities in scope of selection and usage of those methods and tools in practice, as well as the ability to interpret quality data/information, resulting from their usage in practice.

Course-related learning outcomes

Knowledge

Student knows a broad spectrum of methods and tools applied in quality management, especially for quality problems solutions and for process capacity improvement to fulfil the quality requirements.

Student distinguishes different methodologies of quality problem solutions and improvement methodologies (of processes, products, organizations).

Student knows the relationships among different quality management instruments.

Skills

Student is able to select the methods and quality tools adequately to the nature of the problem.

Student is able to interpret and use in practice the data and information obtained as the result of quality tools and methods implementation.

Student is able to join the appropriate tools in methodological sequences.

Social competences

Student is aware of the role and the importance of quality category in engineering activities and their results.

Student active participates in pro-quality initiatives.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

Passing the written exam is a prerequisite for credit. The exam consists of five general questions/tasks. Credit is given in case of correct answer for minimum three questions/tasks. The exam is provided in the end of the semester.

Classes:

Evaluation is based on the grades, resulting from the classes results and student activity, provided by the tutor.

Programme content

Lecture:

The terminology of the subject. The elements of the quality management instruments. Methodologies of quality problem solution and process improvement. The classifications of quality management instruments. Representatives of rules, attitudes, methodologies, methods and tools. Quality



management methods. Traditional and new quality tools. The goals of usage and functionality of quality tools: decomposition, grouping, flow description, statistical analyze, ranking, pointing to critical elements, pointing to relationships, change management. The role and importance of teamwork in quality management. Creative techniques of work in team.

Classes:

Solving problems with the usage of quality tools. Examples of quality management methods usage.

Teaching methods

Bibliography

Basic

Tague N.R., 2005, *The Quality Toolbox*, ASQ Quality Press, Milwaukee.

Additional

Asaka T., Ozeki K., 1996, *Handbook of quality tools. The Japanese approach*, Productivity Press, Portland, Oregon.

Oakland J., 1994, *Total Quality Management – The route to improving performance*, Butterworth – Heinemann, Oxford.

Ishikawa K., 1985, *What is Total Quality Control. The Japanese Way*. Prentice-Hall, Inc. Englewood Cliffs, New Jersey, USA.

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3
Classes requiring direct contact with the teacher	45	2
Student's own work (literature studies, preparation for tutorials, preparation for tests/exam) ¹	30	1

¹ delete or add other activities as appropriate

