COURSE DESCRIPTION CARD - SYLLABUS

Course name
Solving problems and improving processes [N2ZiIP2-IiZJ>RPOD]

Course

Field of study
Management and Production Engineering

Year/Semester
2/3

Area of study (specialization)
Quality Engineering and Management

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
16

Laboratory classes
0

Other (e.g. online)
0

Tutorials
8

Projects/seminars
16

Number of credit points

6,00

Coordinators

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Lecturers

Prerequisites

The student has knowledge related to quality management in organizations, is aware of the importance of quality in the operation of enterprises and is aware of the role of an enterprise in the economic system. In addition, the student demonstrates the ability to think logically and associate facts; can independently obtain information from various sources (including e-sources); understands the need for continuous learning and expanding knowledge.

Course objective

The aim of the course is to convey knowledge and skills related to dealing in a practical way with problems and challenges occurring in enterprises and related to the implementation of the principle of continuous improvement; the subject of research and inquiry are the processes implemented in manufacturing and service enterprises.

Course-related learning outcomes

Knowledge:
The student gains updated knowledge concerning strategies, approaches and methodologies in solving problems and improving processes.

Skills:
The student can properly select and apply quality management tools in methodological sequences aimed at solving the above-mentioned problems, improving processes and maintaining positive results obtained.

Social competences:
The student is aware that managerial practice - especially in the area of quality management - is supported by achievements in the discipline of management science.
The student shares knowledge and engages in teamwork to solve a given problem, respecting the views of other team members.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: multiple choice test. Passing the lecture if obtaining at least 50.1% correct answers. Up to 50.0% - ndst, from 50.1% to 60.0% - dst, from 60.1% to 70.0% - dst+, from 70.1 to 80 - db, from 80.1% to 90 .0% - db+, from 90.1% - very good.
Tutorials: case study analysis
Project: carrying out two thematic projects in teams - assessment based on project reports and presentation of their results

Programme content

Models, concepts and tools for dealing with problematic situations in the operations of a manufacturing enterprise and taking advantage of opportunities through process improvement.

Course topics

1. process approach in management; elements describing processes
2. 'how do we know we have a problem?' - symptoms, assessment methods, indicator values, other internal sources of information
3. "Problem solving" - problem solving methodologies
4. problem solving vs. improvement - relationships
5. dilemma in improvement: "quality - cost - time"
6. reactive, incremental and step improvement (breakthrough projects)
7. methods and tools used
8. models of improvement programmes
9. connection with management concepts functioning in enterprises (quality, lean, agile, other)
10. methods and tools for analyzing the causes of problems and/or improvement factors
11. Root Cause Analysis and RCA tools
12. support tools
13. causes of problems vs. phases of the production process: in the preparatory phase (e.g. inadequate recognition of customer expectations), in the execution phase (e.g. quality of material supplies), in the post-production phase (delays in delivery)
14. complaints and customer satisfaction surveys as an example of information supplies from the enterprise's environment
15. managing changes in processe

Teaching methods

Lectures: a lecture illustrated with a multimedia presentation; discussion as a form of activating students
Tutorials: practical classes

Bibliography

Basic:
1. Hamrol A., Zarządzanie i inżynieria jakości, PWN, Warszawa, 2023
2. Barsalou M. A., Root Cause Analysis, CRC Press, Boca Raton 2015
3. Starzyńska B., Hamrol A., Grabowska M., Poradnik menedżera jakości. Kompendium wiedzy o

narzędziach jakości, Wydawnictwo Politechniki Poznańskiej, Poznań 2010

Additional:
1. Ammerman M., The Root Cause Analysis Handbook, CRC Press, Boca Raton 1998

Breakdown of average student's workload

	Hours	ECTS
Total workload	150	6,00
Classes requiring direct contact with the teacher	42	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	108	4,50