GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	QUALITY ENGINEERING, PG_00057046		
Field of study	Engineering Management		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Management Engineering and Quality -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Elwira Brodnicka	
	Teachers	dr inż. Elwira Brodnicka	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	16.0	0.0	16.0	0.0	0.0	32

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	32	0.0	0.0	32

Subject objectives

Presentation of Quality Engineering concept based both on the experiences of Polish School of Quality and international achievements.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U08] analyses engineering and managerial solutions in decision-making processes, taking into account pro-quality and pro-environmental aspects, as well as safety of work processes	Student can take advantage of specialized statistical software (eg. Minitab) to support management processes using methods of quality engineering	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment
[K6_W13] has a basic knowledge of the design, modelling and optimisation of technical processes and systems	The student has knowledge of modeling, design and process improvement with the use of quality engineering methods - in particular Six Sigma.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge

Subject contents	LECTURE: Introduction - basic definitions, credit conditions Measuring system Statistical methods in assessing the quality of the process The ability and stability of the process Traditional and new tools for quality engineering Six Sigma as an innovative approach in process improvement Quality costsTEST LABORATORY: LABORATORY 1 - INTRODUCTION; LABORATORY 2 - CHARACTERISTICS OF MEASURING EQUIPMENT LABORATORY; LABORATORY 3 - MEASUREMENT SYSTEM ASSESMENT - measurement LABORATORY 4 - MEASUREMENT SYSTEM ASSESMENT - Minitab LABORATORY 5 - STATISTICAL PROCESS CONTROL - measurement LABORATORY 6 - STATISTICAL PROCESS CONTROL - Minitab LABORATORY 7 - ELECTRICAL PARAMETERS CONTROL LABORATORY 7 - LAB SESSION MAKE-UP LABORATORY 8 - TEST
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test of laboratory	60.0%	30.0%
test of lecture	60.0%	35.0%
raport	60.0%	35.0%

Recommended reading	
Basic literature	Keller, P., 2023. The Six SIGMA Handbook, Sixth Edition: A Complete Guide for Green Belts, Black Belts, and Managers at All Levels, MCGRAW HILL BOOK CO. George, L. M, Maxey, J. Rowlands, D.T. 2004. The Lean Six SIGMA Pocket Toolbook: A Quick Reference Guide to Nearly 100 Tools for Improving Quality and Speed, McGraw-Hill Education Ltd
Supplementary literature	Not required
eResources addresses	Adresy na platformie eNauczanie: Inżynieria Jakości _NST_2025 - Moodle ID: 45134 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45134
Example issues/ example questions/ tasks being completed	1. Evaluation of the measurement system 2. Application of ISHIKAWA; PARETO diagram 3. Applications of SPC methodology 4. Application of 5 WHY form
Work placement	Not applicable

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