



## Subject card

Subject name and code	Quality Management, PG_00039960						
Field of study	Management and Production Engineering, Management and Production Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Manufacturing and Production Engineering -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Bogdan Ścibiorski					
	Teachers	dr inż. Bogdan Ścibiorski dr inż. Mieczysław Siemiątkowski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	15.0	0.0	60
	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	60		5.0		10.0	75
Subject objectives	The aim of the course is to provide with the issues of quality management methods and tools used in quality management and the requirements of ISO 9000.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K6_K01	The student defines the principles of managing people in quality systems. The student knows and is able to apply the principles of leadership and motivation. The student understands the need to update their knowledge and is able to identify and use the sources of knowledge. The student knows the principles of Continuing Improvement and the benefits of skilful use of the potential of human resources in terms of creativity and innovation.	[SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work [SK1] Assessment of group work skills [SK4] Assessment of communication skills, including language correctness
	K6_U01	The student uses the basic tools to diagnose quality problems. Designs and analyzes control cards, calculates and analyzes the process quality capability coefficients. Student classifies methods and tools of quality management. The student is able to obtain information needed to carry out tasks related to quality management based on external and internal sources of information.	[SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
	K6_W08	He is able to influence employees and managers, using the knowledge of management and quality engineering, taking into account selected methods and tools.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

## Subject contents

Quality, its definitions, aspects and meaning. Other basic concepts The concept of TQM as the basis of management systems. Models of excellence as the basis of self-assessment of the organization. Industry quality systems, legal conditions of product quality. Quality system model according to ISO 9001. Structure. Requirements Process orientation in management systems. Basic tools for process evaluation and improvement. Control cards. Qualitative ability analysis. Acceptance inspection. Quality costs. Environmental management systems, occupational health and safety and information security management. Integration of management systems.

### **Lectures:**

1. Quality Management Methods
2. Quality Management Tools
3. Quality Management Strategies
4. Measuring devices
5. Measurement analysis software

### **Laboratory:**

1. Control cards
2. Descriptive statistics
3. Ishikawa diagram
4. Pareto diagram
5. QFD method and its tools
6. Selection of measuring tools
7. Coordinate Measuring Machine part 1
8. Coordinate Measuring Machine part 2
9. SGP / GPS

### **Project:**

1. Characteristics of the company and the manufactured item
2. Technological process (process map and production line layout)
3. SMART quality policy and objectives
4. Turtle diagram and systematics
5. Reporting non-conformities

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory	60.0%	20.0%
	Project	60.0%	40.0%
	Lecture. Exam (written)	60.0%	40.0%
Recommended reading	Basic literature	<p>1. Notatki wykładowe materiały niepublikowane - dostępne w formie elektronicznej na stronie wykładowcy/eKursu.</p> <p>2. Hamrol A.: Zarządzanie i inżynieria jakości, PWN, Warszawa 2017</p> <p>3. Grudowski P., Przybylski W., Siemiątkowski M. (red. W. Przybylski) Inżynieria jakości w technologii maszyn, Wydawnictwo PG, 2006</p> <p>4. Hamrol A. Mantura W. Zarządzanie jakością. Teoria i praktyka. PWN, Warszawa 2005</p> <p>5. Grudowski P. Projektowanie, nadzorowanie i doskonalenie systemu jakości według normy PN-EN ISO 9001:2009 w oparciu o podejście procesowe, ODDK, Gdańsk 2010</p>	
	Supplementary literature	<p>1. Hamrol A.: Zapewnienie jakości w procesach wytwarzania. Wydawnictwo Politechniki Poznańskiej, Poznań 1995.</p> <p>2. Grudowski P. Jakość, środowisko i bhp w systemach zarządzania. Bydgoszcz: Wydawnictwo OPO-AJG, 2004</p> <p>3. Muhlemann A. P., Oakland J. S., Lockyer K. G.: Zarządzanie. Produkcja i usługi, Wydawnictwo Naukowe PWN, Warszawa 1997</p> <p>4. Bugdol, M.: System zarządzania jakością według normy ISO 9001:2015, Helion 2018,</p> <p>5. Hamrol A.: Strategie i praktyki sprawnego działania Lean, Six sigma i inne, PWN, Wyd. II, Warszawa 2018</p>	
	eResources addresses	<p>Adresy na platformie eNauczanie: Zarządzanie Jakością, W/P/L, ZiIP, sem. 05, zimowy 22/23 (M: 31824W0) - Moodle ID: 24027 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24027">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=24027</a></p>	
Example issues/ example questions/ tasks being completed	<p>1. Methods and tools of quality management</p> <p>2. Statistical process control</p> <p>3. Model of the quality system according to ISO 9001</p> <p>4. Receiving inspection</p>		
Work placement	Not applicable		