



### MODULE DESCRIPTION

Module code	full-time studies:	<b>Z-ZIP1-E-503</b>
	part-time studies:	<b>Z-ZIPN1-E-503</b>
Module name	<b>Quality Management</b>	
Module name in Polish	<b>Zarządzanie jakością</b>	
Valid from academic year	<b>2023/2024</b>	

### MODULE PLACEMENT IN THE SYLLABUS

Field of study	<b>MANAGEMENT AND PRODUCTION ENGINEERING</b>
Level of education	<b>1st degree</b>
Studies profile	<b>General</b>
Form and method of conducting classes	<b>Full-time and Part-time</b>
Specialisation	<b>All</b>
Unit conducting the module	<b>Department of Quality Management and Intellectual Property</b>
Module co-ordinator	<b>Agnieszka Czajkowska, PhD</b>
Approved by:	<b>Dariusz Bojczuk, PhD, DSc</b>

### MODULE OVERVIEW

Type of subject / group of subjects	<b>Major</b>
Module status	<b>Compulsory</b>
Language of conducting classes	<b>English</b>
Module placement in the syllabus - semester	<b>Semesetr V</b>
Initial requirements	<b>No requirements</b>
Examination (YES/NO)	<b>NO</b>
Number of ECTS credit points	<b>2</b>

Method of conducting classes		Lecture	Classes	Laboratory	Project	Other
Per semester	full-time studies:	<b>30</b>				
	part-time studies:	<b>18</b>				

## TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning outcomes
Knowledge	W01	A student has the knowledge of the importance of the quality in the manufacturing processes and services. Knows the methods, tools and systems related to the quality management.	ZIP1_W09 ZIP1_W14
	W02	A student has the knowledge of the role of the quality management at different stages of the product life cycle.	ZIP1_W14
	W03	A student has the knowledge of the methods and techniques to support the process of modification of the existing and introducing new products. Understands the role of innovation.	ZIP1_W16 ZIP1_W18
Skills	U01	A student is able to identify tools and methods adequate for the realization of basic activities related to the quality decisions.	ZIP1_U01 ZIP1_U08 ZIP1_U19
Social competences	K01	A student understands the need for continuous replenishment of the knowledge in the area of the quality management.	ZIP1_K01
	K02	A student is ready to think and act with consideration of entrepreneurial non-technical aspects of the manufacturing processes.	ZIP1_K02
	K03	A student is aware of the role of the university graduates in the process of knowledge transfer and shaping the public opinion.	ZIP1_K06

## TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	<p>Contemporary perception and the concept of quality. Class quality, reliability issue. Evolutionary changes in the approach to quality issues.</p> <p>The concept of TQM, the principles and essence of the concept. The creators of the concept (Deming, Crosby and others). Quality awards - procedures for granting awards. Benchmarking.</p> <p>Quality management standards – the series of ISO 9000. The issue of certification, auditing.</p> <p>Environmental management systems (related to ISO 9001). Occupational health and safety management systems.</p> <p>Hazard analysis and critical control points HACCP – the issue of food safety. The principles and essence of the HACCP system. Critical control points.</p> <p>Assessment of the conformity of products - CE mark.</p> <p>Quality management tools: Descriptive quality tools - block diagram, plan of action, a flowchart; Creative quality tools - Ishikawa diagram, similarities diagram, relationship diagram, systematics diagram, matrix data analysis, brainstorming.</p> <p>Quality management tools: Quantitative tools - check sheet, Pareto diagram; Statistical tools - data collection, histogram, analysis of variance, regression analysis; Control charts, SPC, the ability of process quality.</p> <p>Methods supporting the quality management: FMEA - Failure mode and effects analysis.</p> <p>Methods supporting the quality management: QFD - Quality function deployment, DOE – Design of experiments, Shainina and Taguchi experiments.</p>

	<p>The concept of Six Sigma, the principles of the concept, the introduction of Six Sigma.</p> <p>Examples of other activities for quality: Poka Yoke, TPM, SMED.</p> <p>The issue of the quality costs, definitions, classification, the basis for calculating the quality costs.</p> <p>Designing the company's strategy with regard to quality, environment and safety.</p> <p>Computer systems supporting quality management</p>
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### **METHODS OF ASSESSING TEACHING RESULTS**

Symbol	Methods of checking the learning outcomes <i>(select X)</i>					
	Oral exam	Written exam	Test	Project	Statement	Other
W01			X			
W02			X			
W03			X			
U01			X			X
K01			X			X
K02			X			X
K03			X			X

### **FORM AND CONDITIONS OF PASSING**

Form of classes	Form of credit	Passing conditions
Lecture	Credit with grade	Obtaining at least 50% of the points of the final test.

## STUDENT WORKLOAD

Balance of ECTS points												
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
		Lc	C	Lb	P	O	Lc	C	Lb	P	O	
1.	Participation in the activities	30					18					h
2.	Other (consultation, exam)	2					2					h
3.	<b>Number of hours of a student's assisted work</b>	<b>32</b>					<b>20</b>					h
4.	<b>Number of ECTS credit points which are allocated for assisted work</b>	<b>1,3</b>					<b>0,8</b>					ECTS
5.	<b>Number of hours of a student's unassisted work</b>	<b>18</b>					<b>30</b>					h
6.	<b>Number of ECTS credit points which a student receives for unassisted work</b>	<b>0,7</b>					<b>1,2</b>					ECTS
7.	<b>Work input connected with practical classes</b>	<b>0</b>					<b>0</b>					h
8.	<b>Number of ECTS credit points which a student receives for practical classes</b>	<b>0,0</b>					<b>0,0</b>					ECTS
9.	<b>Total number of hours of a student's work</b>	<b>50</b>					<b>50</b>					h
10.	<b>Punkty ECTS za modul</b> <i>1 ECTS=25 hours</i>	<b>2</b>										ECTS

## LITERATURE

1. Dahlgaard J.J, Kristensen K., Kanji G.K. (2007): *Fundamentals of Total Quality Management: Process Analysis and Improvement*, Taylor & Francis Group.
2. Mauch R. D. (2009), *Quality Management. Teory and Application*, CRC press (<https://pqm-online.com/assets/files/lib/books/mouch.pdf>)
3. Pyzdek T. , Keller P. (2013), *The Handbook for Quality Management. A Complete Guide to Operational Excellence*, McGraw-Hill ([http://www.btng.education/uploads/9/3/9/2/9392622/quality\\_management.pdf](http://www.btng.education/uploads/9/3/9/2/9392622/quality_management.pdf))