GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Quality control and standardization, PG_00068137		
Field of study			
Date of commencement of studies	February 2027	Academic year of realisation of subject	2027/2028
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Polymer Technology -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Janusz Datta	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	9.0	0.0	0.0	0.0	9.0	18

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	18	4.0	28.0	50

Subject objectives

Familiarizing students with the principles of standardization and classification of materials, the practical application of standards, and product quality assessment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K04] is able to cooperate and work in a group, taking on different roles	He is ready to work as part of a team, both in a research setting and in the workplace.	[SK1] Assessment of group work skills
[K7_W02] knows measurement techniques and instrumental analysis used to study various material groups, including infrared spectroscopy, thermogravimetry, optical microscopy	knows measurement techniques and instrumental analysis methods used in material testing.	[SW2] Assessment of knowledge contained in presentation
[K7_K03] is aware of the non-technical aspects and effects of the Master of Science in Chemical Engineering's activities, including the impact on the environment, and is aware of the responsibility for the decisions made, the observance and development of the principles of professional ethics and actions to ensure compliance with these principles	is aware of professional responsibility and the environmental impact of engineering activities.	[SK5] Assessment of ability to solve problems that arise in practice
[K7_U04] is able to conduct a detailed analysis of the obtained results and develop them in the form of a technical report or presentation, also in English	can analyze research results and present them in the form of a technical report or presentation, also in English.	[SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>Course content – lecture

Standardization in industry, types of standards, designations of national, European and international standards, and principles of their application. Application of standards in the testing of materials and products, requirements for test methods and material properties. Quality control, quality assessment methods and tools, statistical quality control, assessment of the conformity of test results with standard requirements, and documentation and interpretation of quality control results.

Course content – seminar

Analysis of standardization and quality control problems in industry using case studies. Application of methods for identifying the causes of non-conformities and solving quality-related problems. Student presentations, problem-based debates, and discussions on the practical application of standards and decision-making in quality management.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Seminar: assesment of presentation</td><td>60.0%</td><td>40.0%</td></tr>
<tr><td>Lecture: written test</td><td>50.0%</td><td>60.0%</td></tr>
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</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1.Zymonik Z., Hamrol A., Grudowski P.,Zarządzanie jakością i bezpieczeństwem, PWE,Warszawa, 2013.

2.Blicharski M.: Inżynieria materiałowa. Stal. WNT Warszawa, 2004

.</td></tr>
<tr><td>Supplementary literature</td><td>1. Standards; PN, PN-EN, ISO, ASTM, przepisy UDT.\

2. Sałaciński T. .SPC – statystyczne sterowanie procesami produkcji, Oficyna Wydawnicza Politechniki Warszawskiej,

Warszawa, 2022.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Explain how a test method standard is used in the quality control of polymer materials.

2. Discuss the differences between quality control, quality assurance, and quality management.

3. Discuss the application of the 5 Whys method to identifying the root causes of quality non-conformities.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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