



## Subject card

Subject name and code	Quality and chemical production management, PG_00069034						
Field of study	Zarządzanie jakością i produkcją chemiczną						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2028/2029		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Process Engineering and Chemical Technology -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Karolina Kucharska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	30
	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	30		2.0		18.0	50
Subject objectives	The student masters the information related to the introduction of quality management systems in a company with a chemical profile. The student anticipates the effects of the activities carried out and is prepared for the critical selection of the quality management system, its implementation, and also uses the knowledge learned to conduct the audit.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U06] Recognizes the relationships between technological issues and their impact on the environment, taking into account the principles of sustainable development, systemic and non-technical aspects, and occupational health and safety principles		The student updates knowledge and improves professional skills in the field of quality management systems, occupational health and safety, and environmental protection. The student collaborates in a team in a professional manner		[SU4] Ocena umiejętności korzystania z metod i narzędzi [SU1] Ocena realizacji zadania		
	[K6_W05] Has knowledge of electrical engineering, automation and computer science, including the operation of measurement and control systems		213 / 5 000 The student has knowledge of electrical engineering, automation and computer science, including the operation of measurement and control systems, and is able to apply standards and guidelines to create validation and calibration protocols.		[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym		
	[K6_W04] Possesses the technical knowledge necessary to analyze processes and design installations in the chemical industry.		Possesses the technical knowledge necessary to analyze processes and design installations in the chemical industry in accordance with current legal literature and technical requirements		[SW2] Ocena wiedzy zawartej w prezentacji		

Subject contents	<p>Course content – lecture History of Quality Management Systems.</p> <p>Discussing the Deming cycle and the risk-based approach.</p> <p>Principles of Good Manufacturing Practice</p> <p>Principles of Good Laboratory Practice</p> <p>Discussion of the assumptions of the ISO 9001: 2015 standard in relation to chemical production.</p> <p>Discussion of the assumptions of ISO 14001: 2015 in relation to chemical production</p> <p>Discussion of the assumptions of ISO 45001: 2018 in relation to chemical production</p> <p>Auditing techniques</p> <p>Audit plan, checklist and audit report.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	presentation	60.0%	35.0%
	group work-report	60.0%	35.0%
	test	60.0%	30.0%
Recommended reading	<p>Basic literature</p> <ol style="list-style-type: none"> <li>1. A. Hamrol <i>Zarządzanie jakością z przykładami</i>, PWN, Warszawa, <b>2007</b>.</li> <li>2. B. Gajdzik, A. Wyciślik <i>Jakość, środowisko i bezpieczeństwo pracy w zarządzaniu przedsiębiorstwem</i>, Wyd. Pol. Śl., Gliwice, <b>2010</b>.</li> <li>3. B. Hancyk <i>ADR, REACH, CLP Niebezpieczne chemikalia Poradnik</i>, Atest, Kraków, <b>2012</b>.</li> <li>4. R. Wolniak, B. Skotnicka-Zasadzień <i>Zarządzanie jakością dla inżynierów</i>, Wyd. Pol. Śl., Gliwice, <b>2010</b>.</li> <li>5. ISO 9001:2015</li> <li>6. ISO 18001:2015</li> <li>7. ISO 45001:2018</li> <li>8. Crosby Ph., <i>Quality is still Free</i>, McGraw-Hill, New York <b>1996</b>.</li> </ol>		

	Supplementary literature	<p>1. Deming E.W., Out of the Crisis, Massachusetts Institute of Technology, Cambridge <b>1982</b>.</p> <p>2. Feigenbaum A.V., Total Quality Control, McGraw-Hill, Inc., New York <b>1991</b>.</p> <p>3. Juran J.M., Gryna Frank M., Jr., Jakość projektowanie analiza, Wydawnictwo Naukowo-Techniczne, Warszawa <b>1974</b>.</p> <p>4. Juran J.M., Juran's Quality Control Handbook, McGraw-Hill, Inc., New York <b>1988</b>.</p> <p>5. Taguchi G., Elsayed E.A., Hsiang T., Quality Engineering in Production Systems, McGraw-Hill, Inc., New York <b>1989</b>.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p><b>The student answers the questions of the presentation presented at the seminar, examples of questions:</b></p> <ol style="list-style-type: none"> <li>1. Health and safety requirements and fire protection in chemical production.</li> <li>2. Basic legal acts in the field of waste management in the chemical industry</li> <li>3. Types of audits.</li> <li>4. Rules of the auditor's work.</li> </ol> <p><b>Student prepares a multimedia presentation, examples of topics:</b></p> <ol style="list-style-type: none"> <li>1. Planning of material needs in chemical production. MRP method.</li> <li>2. Principles of GLP Good Laboratory Practice according to the Regulation of the Minister of Health of May 22, 2013, Coll. 2013 item 665.</li> <li>3. Production according to the principles of Good Manufacturing Practice GMP according to the Regulation of the Minister of Health of March 18, 2019, Journal of Laws 2019 item 728</li> <li>4. Validation and verification of the process according to the principles of Good Manufacturing Practice GMP according to the Regulation of the Minister of Health of March 18, 2019, Journal of Laws 2019 item 728</li> <li>5. Supervision over the quality of cosmetic products according to the Act OJ 2018 item 2227</li> </ol> <p><b>The student prepares a report on the task entrusted to him while working in a group, examples of tasks:</b></p> <ol style="list-style-type: none"> <li>1. Audit plan</li> <li>2. List of control questions</li> <li>3. Audit report</li> </ol>	
Practical activities within the subject	Workshops on standards and audits	

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