



Subject card

Subject name and code		History of Chemistry, PG_00071018						
Field of study		Mathematics						
Date of commencement of studies		October 2025	Academic year of realisation of subject			2025/2026		
Education level		second-cycle studies	Subject group					
Mode of study		Full-time studies	Mode of delivery			e-learning		
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 Physical Chemistry -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)		Subject supervisor		dr hab. inż. Jarosław Wawer				
		Teachers		dr hab. inż. Jarosław Wawer				
Lesson types		Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
		Number of study hours	30.0	0.0	0.0	0.0	0.0	30
		E-learning hours included: 30.0						
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		Acquisition by the student of knowledge about the history of chemistry, the historical trends and conditions of its development, as well as the mistakes made during this process and the non-technical aspects of the development of this field of science. Indicating the changing social role of chemistry throughout history.						
Learning outcomes		Course outcome		Subject outcome		Method of verification		
		[K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications		The student is aware of the importance of well-considered actions carried out not only in a planned but also in a creative manner. The student understands the significance of knowledge accumulated over the centuries for the further development of science.		[SW1] Assessment of factual knowledge		
		[K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems		The student is aware of the importance of the non-technical aspects and consequences of engineering activities, including their impact on the environment and the associated responsibility for the decisions made. The student is familiar with historical examples concerning, among other things, ethical issues in the development of chemistry that enable the evaluation of their own actions.		[SU3] Assessment of ability to use knowledge gained from the subject		
		[K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment		The student has knowledge of the history of chemistry, particularly the development of its theories and methodologies, as well as issues related to the responsibility of a scientist and/or engineer for the results and consequences of their work, including its social and ethical implications.		[SK5] Assessment of ability to solve problems that arise in practice		

Subject contents	<p>Course content – lecture</p> <p>It is difficult to imagine the modern world without modern chemistry. However, we should remember that the path from the first attempts to influence matter to the achievements familiar to us from everyday life was long and required overcoming countless difficulties. Humanity not only had to learn how to produce particular substances, but also to understand the causes of the changes taking place in order to increase the effectiveness of its efforts. Success was achieved through the synergistic development of applied chemistry and increasingly accurate hypotheses concerning the nature of phenomena. The lectures present the evolutionary path that chemistry has undergone. It was an exceptionally fascinating process, marked by sudden changes in views, the formulation of bold theories, the repetition of errors, but also spectacular discoveries and vivid experiments. The pre-alchemical period, alchemy, and the process of abandoning alchemy in favor of modern chemistry are discussed. It is shown how the ideas of Greek philosophers misled experimenters and theorists for many centuries. The interesting development of ideas and practical discoveries from the Middle Ages to the Renaissance is also presented. Particular emphasis is placed on the breakthrough in thinking about chemistry brought about by the discoveries of Boyle and Lavoisier. The lectures present the development of research on the composition and structure of matter, the nature of the chemical bond, the concept of the element and the classification of elements, as well as the causes of chemical transformations. The foundations that led to the emergence of modern chemistry are also briefly presented, including the development of quantum mechanics and organic synthesis. Each lecture concludes with a reflection on the lessons that can be drawn from the history of the development of chemistry in the context of the challenges we face today and those we will encounter in the future.</p>											
Prerequisites and co-requisites	-											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="448 624 798 658">Subject passing criteria</th> <th data-bbox="802 624 1142 658">Passing threshold</th> <th data-bbox="1147 624 1487 658">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 665 798 719">Assessment of participation during classes</td> <td data-bbox="802 665 1142 719">50.0%</td> <td data-bbox="1147 665 1487 719">10.0%</td> </tr> <tr> <td data-bbox="448 725 798 775">Final written test OR presentation on a selected topic</td> <td data-bbox="802 725 1142 775">50.0%</td> <td data-bbox="1147 725 1487 775">90.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Assessment of participation during classes	50.0%	10.0%	Final written test OR presentation on a selected topic	50.0%	90.0%
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Recommended reading	Basic literature	1) H. Lichočka "Historia chemii" 2011 (pozycja dostępna za darmo)  2) J. Hudson "The History of Chemistry" 1992  Chapman & Hall (Springer)  3) W. H. Brock "Historia chemii" Prószyński 1999										
	Supplementary literature	1) "The Mystery of Matter" (YouTube)  <a href="https://www.youtube.com/watch?v=GWQZE0HPoAY">https://www.youtube.com/watch?v=GWQZE0HPoAY</a>  2) H. Lichočka "Historia chemii" 2011  <a href="https://depot.ceon.pl/bitstream/handle/123456789/12455/historia%20chemii.pdf?sequence=3&amp;isAllowed=y">https://depot.ceon.pl/bitstream/handle/123456789/12455/historia%20chemii.pdf?sequence=3&amp;isAllowed=y</a>										
	eResources addresses											
Example issues/ example questions/ tasks being completed	1. Description of the history of a selected product (e.g., glass, matches, metal alloys, nitric acid). 2. Description of the life and work of a selected discoverer. 3. Description of the history of a single idea (e.g., the philosophers stone, the periodic table of elements). 4. Description of a spectacular failure (e.g., thalidomide, cold fusion). 5. Description of the history of symbolism in alchemy. 6. Description of the history of the discovery of the chemical composition of stars.											
Practical activities within the subject	Not applicable											

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