GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Safety at Work, PG_00060839		
Field of study	Chemical Technology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	1	Language of instruction	Polish
Semester of study	1	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	dr hab. inż. Justyna Kucińska-Lipka	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	0.0	0.0	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

Familiarizing students with the issues in the field of work safety.

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 can list and describe safe work practices and types of workplace hazards. The student can identify burdensome and harmful factors in the workplace and select appropriate personal protective equipment (using, among other things, Material Safety Data Sheets).	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment
[K6_K02] is aware of the responsibility for his/her work and is ready to work in a team and share responsibility for common tasks.	The student understands and applies the principles of safe work in the chemical industry, ensuring their own safety and the safety of others. The student knows the principles of occupational risk assessment in positions related to the chemical industry. The student is able to analyze a situation related to a workplace accident, draw appropriate conclusions (corrective actions), and knows the principles of preparing an accident report.	[SK1] Assessment of group work skills [SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice
[K6_K03] Understands the need for continuous learning and knows the opportunities to improve professional, personal and social competences, and is able to think and act in an entrepreneurial manner.	The student responsibly carries out the assigned tasks, including the use of the principles of safe work in laboratories and technological halls.	[SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work

Subject contents	Course content – lecture • National and international legal regulations regarding occupational health and safety. Analysis of safety procedures in a given workplace (e.g., technological halls, chemical warehouses). • General principles of working with machinery and equipment in the chemical industry. • Hazards in the workplace, including those occurring during work in technological halls causes, consequences, and methods of prevention. • Nuisance and harmful factors in the workplace measurements at workstations (e.g., noise). • Hazards in the workplace, including those occurring during work in chemical laboratories. Characterization of selected harmful and burdensome factors. • Personal protective equipment, protective clothing, workwear. • Material safety data sheets for chemical substances. Toxicity of chemical substances and methods of labeling. • Hazard-related markings (pictographs). • The effects of hazards, including methods for minimizing these hazards, including preventing hazards in the workplace. • Selected examples of workplace accidents in the chemical industry/laboratory.Solving situational/job-specific problems. • Teamwork organization division and responsibilities in the field of occupational safety. • Role and hierarchy of responsibilities in the field of occupational safety within the company. • Monitoring occupational safety. Managing occupational safety and risk. • Assessment methods and calculation of occupational risk assessment. Course content – laboratory • Noise level and airflow measurements in technological halls. • Safe work practices for processing equipment gas emission and temperature control. • Safe work practices and monitoring of nuisance factors when working with rolling mills and hydraulic presses. • Workplace hazards causes, consequences, and prevention methods. • Case studies technologial hall and chemical laboratory. Equipment labeling. • Accident report. Occupational risk assessment sheet. • Introduction to toxicological testing, including the REACH system and data contained in material safety data sheets. • Determination of selected toxicological effect measures using bioluminescent bacteria. • Calculation of toxicological parameters based on the obtained biological data.
Prerequisites and co-requisites	Passed health and safety training for students beginning their education at PG
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
test	50.0%	50.0%
laboratory completion	50.0%	50.0%

Recommended reading	Basic literature
	1. ACT of June 26, 1974 Labor Code, Journal of Laws. 1974 No. 24 item 141 2. Marek Wasielewski, Wiktor Nikołajewicz Dawydow, Bezpieczeństwo w pracowni chemicznej, Wydawnictwa Naukowo-Techniczne, Warszawa 2008 3. Rączkowski B., BHP w praktyce, oddk Gdańsk, 2022 i wydania wcześniejsze 4.Firkowski A., Religa P., ,,Bezpieczeństwo pracy z substancjami i preparatami chemicznymi, Uniwersytet Technologiczno-Humanistyczny w Radomiu, Radom 2009 5. Collective work/Praca zbiorowa, BHP w firmie Bezpieczeństwo i higiena pracy od A do Z, Wydawnictwo: Wiedza i Praktyka, 2022
	Supplementary literature
	1. Regulation of the Council of Ministers of September 2, 1997 on the service of occupational safety and health. 2. Skowroń J., Zapór L., Pośniak M., Szewczyńska M., Lisowski A., Czynniki chemiczne w środowisku pracy, Centralny Instytut Ochrony pracy, Państwowy Instytut Badawczy, 2006 3. Michalik J. S., Poważne awarie chemiczne, Centralny Instytut Ochrony pracy, Państwowy Instytut Badawczy, 2007 4. Michalik J. S., Zapobieganie poważnym awariom przemysłowym, Centralny Instytut Ochrony pracy, Państwowy Instytut Badawczy, 2005

	eResources addresses	
Example issues/ example questions/ tasks being completed	Theoretical issues: regulations for safe work. Knowledge of the designations of basic hazards in chemical laboratories, material laboratories or process halls. Legal regulations on safe work. Rules of conduct in case of danger (including fire, chemical contamination, biological contamination) in the workplace. Laboratory issues: the ability to analyze the data sheet of chemical substances (toxicity of chemicals, determination of toxicity); design of procedures to be followed in case of a) fire, b) failure of water and sewage system, c) biological contamination, d) electrical system; measurement of noise in technological halls, measurement of concentrations of selected harmful factors. Calculation of occupational risk - determination of consequences and probability of danger.	
Practical activites within the subject	Not applicable	

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