



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

A Short Course in Occupational Safety [S1Bioinf1>BHP]

### Course

Field of study Bioinformatics	Year/Semester 1/1
Area of study (specialization) –	Profile of study general academic
Level of study first-cycle	Course offered in Polish
Form of study full-time	Requirements compulsory

### Number of hours

Lecture 4	Laboratory classes 0	Other 0
Tutorials 0	Projects/seminars 0	

### Number of credit points

0,00

### Coordinators

dr hab. inż. Ewa Stanisław  
ewa.stanislaw@put.poznan.pl

dr inż. Adam Górny  
adam.gorny@put.poznan.pl

### Lecturers

### Prerequisites

The student has the knowledge of the basic hazards to human health and life. Understands the need to apply the acquired knowledge throughout the study process and is able to take responsible action in an emergency. Understands the need to study.

### Course objective

To familiarize students with the safety work and fire protection regulations, being in operation at the Poznań University of Technology. In particular, to familiarize students with the basic principles of safety work in a chemical and biological laboratory, the emergency situations that may occur in chemical laboratories and the risks associated with exposure to chemical substances.

### Course-related learning outcomes

Knowledge:

1. Has knowledge on the principles of liability for ensuring safety in area at Poznan University of

Technology, including its scope of responsibilities and obligations. Knows the basic principles of occupational health and safety in the education of a chemist and biology, in particular the principles of safe work in a laboratory and work with chemical substances. [K\_W29]

2. Has knowledge of the risks associated with the implementation of basic chemical and biological processes. He knows the principles of risk assessment, knows Polish, international and EU directives on occupational safety in the laboratory. [K\_W29; K\_W04; K\_W01]

3. He knows the basic principles of action in case of fire and first aid. [K\_W29]

Skills:

1. Is able to obtain information from literature, databases and other properly selected sources, necessary to ensure safe functioning at the Poznań University of Technology, as well as draw conclusions and formulate and agree their opinions. [K\_U01; K\_U02]

2. Has the ability to assess and prevent hazards in the laboratory. He knows the rules of occupational health and safety. [K\_U01; K\_U02]

3. Applies basic regulations and adheres to health and safety rules related to the work performed, and implements appropriate waste management [K\_U12].

4. Has the ability to use safety data sheets for chemical substances and correctly recognizes pictograms, which he can assign appropriate meaning [K\_U12].

Social competences:

1. Is aware of the importance and understands the social aspects of practical application of the acquired knowledge and the related responsibility [K\_K06].

2. Understands the need for training [K\_K01].

3. Is aware of the impact of following the safe work rules on the safety of himself and others [K\_06].

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Passing the course based on the results of the final test (carried out in a stationary or remote mode (e-Kursy platform), depending on the situation). Passing threshold: 85% of points.

### Programme content

During the first part of the lecture, selected legal regulations in the field of labor law concerning health and safety at work will be discussed, including:

a) the rights and obligations of students and the University in the field of occupational health and safety and liability for violation of health and safety rules and regulations, b) accidents and diseases, c) prevention in the field of student health protection.

Impact of hazardous, harmful and nuisance factors on safety and health. Assessment of hazards occurring in learning and working processes as well as characteristics of hazards protection methods. Problems related to the organization of workstations, including ergonomics, including workstations with screen monitors and other office equipment. Proceedings in the event of accidents and emergency situations (e.g. fire, breakdowns), including rules on providing first aid for victims of accidents.

During the second part of the lecture, selected basic issues related to occupational safety and health in a chemical and biological laboratory will be discussed: (1) BASIC PRINCIPLES: Issues related to green chemistry. (2) EMERGENCY RESPONSES: Chemical spills; Lab-related emergencies; First aid in chemistry

and biological laboratories. (3) UNDERSTANDING LABORATORY HAZARDS: Routes of exposures to hazards; The language of safety (signs, symbols, and labels); Finding hazard information: safety data sheets (SDS); The globally harmonized system of classification and labelling of chemicals (GHS). (4) INTRODUCTION TO THE LABORATORY: Personal protective equipment (PPE); Common laboratory operations; Chemical and biological management: storage and waste; Covid-19 related regulations; Basic guidelines for safety work.

### Course topics

Lecture: Selected legal regulations in the field of labor law, concerning health and safety at work, including: the rights and obligations of students and the University in the field of occupational health and safety and liability for violation of health and safety rules and regulations, accidents and diseases, prevention in the

field of student health protection. Impact of hazardous, harmful and nuisance factors on safety and health. Assessment of hazards occurring in learning and working processes as well as characteristics of hazards protection methods. Problems related to the organization of workstations, including ergonomics, including workstations with screen monitors and other office equipment. Proceedings in the event of accidents and emergency situations (e.g. fire, breakdowns), including rules on providing first aid for victims of accidents.

## Teaching methods

Lecture: multimedia presentation, discussion.

## Bibliography

### Basic

1. Statut Politechniki Poznańskiej uchwalony przez Senat Akademicki Politechniki Poznańskiej (Uchwała Nr 175/2016-2020 z dnia 10 lipca 2019 roku).
2. Regulamin studiów pierwszego i drugiego stopnia, uchwalony przez Senat Akademicki Politechniki Poznańskiej (Uchwała Nr 42/2020-2024 z dnia 31 maja 2021 r.).
3. Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 30 października 2018 r. w sprawie sposobu zapewnienia w uczelni bezpiecznych i higienicznych warunków pracy i kształcenia (Dz. U. 2018, poz. 2090).
4. M. Wasilewski, W. Dawydow, Bezpieczeństwo w pracowni chemicznej, WNT, Warszawa 2008.
5. P. Kowalski, Laboratorium chemii organicznej. Techniki pracy i przepisy BHP, WNT, Warszawa 2008.
6. H. Wojciechowska-Piskorska, Bezpieczeństwo i higiena pracy w laboratoriach chemicznych. Laboratoria: naukowo-badawcze, doświadczalne dla przemysłu, kontrolno-ruchowe, produkcyjne. ODDK, 2013.

### Additional

1. Ustawa z dnia 20 lipca 2018 r., Prawo o szkolnictwie wyższym i nauce (tekst jedn.: Dz. U. 2021, poz. 2232, ze zm.).
2. Górny A., Zastosowanie środków technicznych i działań organizacyjnych w poprawie warunków pracy, Studia Ekonomiczne Regionu Łódzkiego, 2017, nr 24, ss. 205-216.
3. Konarska M., Gedliczka A., Sprawdź, czy twoje stanowisko pracy z komputerem jest ergonomiczne, Centralny Instytut Ochrony Pracy, Warszawa, 2001.
4. R. H. Hill, Jr. and D C. Finster, Laboratory Safety for Chemistry Students, John Wiley & Sons, Inc., 2010.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	4	0,00
Classes requiring direct contact with the teacher	4	0,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	0	0,00