

# SYLLABUS

## 1. General information on the course

<b>Full course name</b>	Labor Safety in Branch
<b>Full official name of a higher education institution</b>	Sumy State University
<b>Full name of a structural unit</b>	Academic and Research Medical Institute. Кафедра громадського здоров'я
<b>Author(s)</b>	Liubchak Vladyslav Viktorovych
<b>Cycle/higher education level</b>	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
<b>Semester</b>	18 weeks during the 3rd semester or 18 weeks during the 4th semester
<b>Workload</b>	The volume of the discipline is 5 ECTS credits, 150 hours, of which 36 hours is contact work with the teacher (36 hours of practical classes), 114 hours is independent work
<b>Language(s)</b>	English

## 2. Place in the study programme

<b>Relation to curriculum</b>	Elective course available for study programme "Medicine"
<b>Prerequisites</b>	There are no specific pre-requisites
<b>Additional requirements</b>	There are no specific requirements
<b>Restrictions</b>	There are no specific restrictions

## 3. Aims of the course

The purpose of the academic discipline is the formation of theoretical knowledge regarding the preservation of human health and life in modern living conditions and protection against dangers of various origins.

## 4. Contents

<b>Module 1. Life safety</b>
Topic 1 Theoretical foundations of occupational health and safety Subject, method, principles and tasks of life safety as an educational discipline. Concepts and signs of life safety. The concept of danger and its characteristics. Classification of emergency situations. Sources of danger and harmful factors.

<p>Topic 2 Normative and legal regulation of life safety</p> <p>Basic legislative and regulatory acts on labor protection. Law of Ukraine "On Labor Protection". Labor Code of Ukraine. Normative acts on labor protection operating within the enterprise. Instructions on labor protection. Liability for violation of labor protection legislation. Basic provisions of mandatory state social insurance in the context of labor protection. International legislation in the field of life safety</p>
<p>Topic 3 The main types of national life security</p> <p>Public security. Social and demographic security. Informational security. Cyber</p>
<p>Topic 4 Economic security</p> <p>The essence of economic security. System of economic security. Threats to economic security and means of overcoming them</p>
<p>Topic 5 Environmental security</p> <p>Environmental safety as an object of legal regulation. Characteristics of technogenic and ecological safety. Protection of the natural environment. Basic principles of environmental protection</p>
<p>Topic 6 Military security</p> <p>Signs and modern factors of war danger for Ukraine. Modern military means of mass destruction and the consequences of their use. Safety of the population in the territory of armed conflict. Warning about dangerous finds in the war zone. Environmental safety requirements for military and defense facilities and military activities. Попередження про небезпечні знахідки в зоні бойових дій. Вимоги екологічної безпеки щодо військових та оборонних об'єктів і військової діяльності</p>
<p><b>Module 2. Labor protection</b></p>
<p>Topic 7 Legal and organizational foundations of labor protection</p> <p>Subject, object and methods of labor protection as an educational discipline. Normative and legal basis of labor protection. Subject, object and methods of labor protection as an educational discipline. Normative and legal basis of labor protection</p>
<p>Topic 8 Guarantees of labor protection rights</p> <p>Rights to labor protection during the conclusion of an employment contract. Peculiarities of labor protection for women, minors, persons with disabilities and the elderly. Social guarantees of labor protection</p>
<p>Topic 9 Organization of labor protection of economic entities</p> <p>Management of labor protection of economic entities. Labor protection service of economic entities. Means of protection of workers in production</p>
<p>Topic 10 Prevention of industrial injuries</p> <p>The main groups of causes of industrial injuries and occupational morbidity. Organizational and technical measures for the prevention of industrial injuries. The procedure for investigating and recording accidents, occupational diseases and accidents at work. The specifics of employee injuries</p>

<p>Topic 11 Basics of civil protection in Ukraine</p> <p>State system of civil protection. Subjects of civil protection and their powers. Protection of the population from emergency situations and liquidation of consequences. Organization of civil protection of objects</p>
<p>Topic 12 Training of employees on labor protection issues</p> <p>Training and knowledge testing of officials and specialists. Briefings on labor protection: purpose, types. Investigation, accounting and analysis of accidents, occupational diseases and accidents.</p>
<p><b>Module 3. Safe environment and types of hazards</b></p>
<p>Topic 13 Basics of physiology and occupational hygiene</p> <p>Basics of work physiology. The role of the central nervous system in work. Fatigue, stress and the role of the workforce in occupational safety. Hygienic classification of working conditions. Legislation in the field of occupational hygiene.</p>
<p>Topic 14 Harmful substances and radiation safety</p> <p>General concepts about harmful substances. Dust pollution of the air in the working area. Hygienic regulation of harmful substances. Methods of combating harmful substances in production. Ionizing radiation. Effect of ionizing radiation on the human body. Radiation safety standards. Protection against ionizing radiation.</p>
<p>Topic 15 Noise, infrasound, ultrasound and vibration</p> <p>Sound. Noise. Infrasound Ultrasound. Vibration.</p>
<p>Topic 16 Electrical safety and fire safety</p> <p>Basic definitions of electrical safety. The effect of electric current on the human body. Types of electrical injuries. Factors affecting the severity of electric shock. Systems of means and measures to ensure electrical safety. Basic concepts and definitions of fire safety. Theoretical foundations of the combustion process. Evaluation of the object's explosion and fire hazard. Ways and means of extinguishing fires.</p>
<p>Topic 17 Air of the working area</p> <p>Influence of microclimate parameters on the human body. Hygienic regulation of air parameters in the working area. Determination of microclimate parameters. General measures and means of normalization of microclimate parameters. Purpose and classification of ventilation systems. Air conditioning of the working area. Heating systems.</p>
<p>Topic 18 Lighting of industrial premises. Electromagnetic fields and radiation of the optical and radio frequency range</p> <p>The importance of lighting for successful work. Basic lighting concepts and units. Types of industrial lighting. Classification of electromagnetic radiation by frequency spectrum. The effect of electromagnetic fields on the human body. Protection against electromagnetic radiation and fields. Infrared radiation. Ultraviolet radiation. Laser radiation.</p>

### 5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	Analyze and evaluate life-, health-, and professional-threatening situations and independently make decisions about taking urgent measures
LO2	Use the provisions of legislative acts and regulatory documents on labor protection and industrial safety in their activities
LO3	Possess the basic methods of preserving the life, health and working capacity of employees during future professional activities within the scope of their competence in the primary position
LO4	Perform professional functions, duties and responsibilities in occupational health and safety at the workplace

## 7. Teaching and learning activities

### 7.1 Types of training

<b>Topic 1. Theoretical foundations of occupational health and safety</b>
pr.tr.1 "Theoretical foundations of occupational health and safety" (full-time course) Subject, method, principles and tasks of life safety as an educational discipline. Concepts and signs of life safety. The concept of danger and its characteristics. Classification of emergency situations. Sources of danger and harmful factors.
<b>Topic 2. Normative and legal regulation of life safety</b>
pr.tr.2 "Normative and legal regulation of life safety" (full-time course) Basic legislative and regulatory acts on labor protection. Law of Ukraine "On Labor Protection". Labor Code of Ukraine. Normative acts on labor protection operating within the enterprise. Instructions on labor protection. Liability for violation of labor protection legislation. Basic provisions of mandatory state social insurance in the context of labor protection. International legislation in the field of life safety
<b>Topic 3. The main types of national life security</b>
pr.tr.3 "The main types of national life security" (full-time course) Public security. Social and demographic security. Informational security. Cyber
<b>Topic 4. Economic security</b>
pr.tr.4 "Economic security" (full-time course) The essence of economic security. System of economic security. Threats to economic security and means of overcoming them
<b>Topic 5. Environmental security</b>
pr.tr.5 "Environmental security" (full-time course) Environmental safety as an object of legal regulation. Characteristics of technogenic and ecological safety. Protection of the natural environment. Basic principles of environmental protection
<b>Topic 6. Military security</b>

pr.tr.6 "Military security" (full-time course)

Signs and modern factors of war danger for Ukraine. Modern military means of mass destruction and the consequences of their use. Safety of the population in the territory of armed conflict. Warning about dangerous finds in the war zone. Environmental safety requirements for military and defense facilities and military activities

### **Topic 7. Legal and organizational foundations of labor protection**

pr.tr.7 "Legal and organizational foundations of labor protection" (full-time course)

Subject, object and methods of labor protection as an educational discipline. Normative and legal basis of labor protection. Subject, object and methods of labor protection as an educational discipline. Normative and legal basis of labor protection

### **Topic 8. Guarantees of labor protection rights**

pr.tr.8 "Guarantees of labor protection rights" (full-time course)

Rights to labor protection during the conclusion of an employment contract. Peculiarities of labor protection for women, minors, persons with disabilities and the elderly. Social guarantees of labor protection

### **Topic 9. Organization of labor protection of economic entities**

pr.tr.9 "Organization of labor protection of economic entities" (full-time course)

Management of labor protection of economic entities. Labor protection service of economic entities. Means of protection of workers in production

### **Topic 10. Prevention of industrial injuries**

pr.tr.10 "Prevention of industrial injuries" (full-time course)

The main groups of causes of industrial injuries and occupational morbidity. Organizational and technical measures for the prevention of industrial injuries. The procedure for investigating and recording accidents, occupational diseases and accidents at work. The specifics of employee injuries

### **Topic 11. Basics of civil protection in Ukraine**

pr.tr.11 "Basics of civil protection in Ukraine" (full-time course)

State system of civil protection. Subjects of civil protection and their powers. Protection of the population from emergency situations and liquidation of consequences. Organization of civil protection of objects

### **Topic 12. Training of employees on labor protection issues**

pr.tr.12 "Training of employees on labor protection issues" (full-time course)

Training and knowledge testing of officials and specialists. Briefings on labor protection: purpose, types. Investigation, accounting and analysis of accidents, occupational diseases and accidents.

### **Topic 13. Basics of physiology and occupational hygiene**

<p>pr.tr.13 "Basics of physiology and occupational hygiene" (full-time course)</p> <p>Basics of work physiology. The role of the central nervous system in work. Fatigue, stress and the role of the workforce in occupational safety. Hygienic classification of working conditions. Legislation in the field of occupational hygiene.</p>
<p><b>Topic 14. Harmful substances and radiation safety</b></p>
<p>pr.tr.14 "Harmful substances and radiation safety" (full-time course)</p> <p>General concepts about harmful substances. Dust pollution of the air in the working area. Hygienic regulation of harmful substances. Methods of combating harmful substances in production. Ionizing radiation. Effect of ionizing radiation on the human body. Radiation safety standards. Protection against ionizing radiation.</p>
<p><b>Topic 15. Noise, infrasound, ultrasound and vibration</b></p>
<p>pr.tr.15 "Noise, infrasound, ultrasound and vibration" (full-time course)</p> <p>Sound. Noise. Infrasound Ultrasound. Vibration.</p>
<p><b>Topic 16. Electrical safety and fire safety</b></p>
<p>pr.tr.16 "Electrical safety and fire safety" (full-time course)</p> <p>Basic definitions of electrical safety. The effect of electric current on the human body. Types of electrical injuries. Factors affecting the severity of electric shock. Systems of means and measures to ensure electrical safety. Basic concepts and definitions of fire safety. Theoretical foundations of the combustion process. Evaluation of the object's explosion and fire hazard. Ways and means of extinguishing fires.</p>
<p><b>Topic 17. Air of the working area</b></p>
<p>pr.tr.17 "Air of the working area" (full-time course)</p> <p>Influence of microclimate parameters on the human body. Hygienic regulation of air parameters in the working area. Determination of microclimate parameters. General measures and means of normalization of microclimate parameters. Purpose and classification of ventilation systems. Air conditioning of the working area. Heating systems.</p>
<p><b>Topic 18. Lighting of industrial premises. Electromagnetic fields and radiation of the optical and radio frequency range</b></p>
<p>pr.tr.18 "Lighting of industrial premises. Electromagnetic fields and radiation of the optical and radio frequency range" (full-time course)</p> <p>The importance of lighting for successful work. Basic lighting concepts and units. Types of industrial lighting. Classification of electromagnetic radiation by frequency spectrum. The effect of electromagnetic fields on the human body. Protection against electromagnetic radiation and fields. Infrared radiation. Ultraviolet radiation. Laser radiation.</p>

## 7.2 Learning activities

LA1	Participation in discussion (group and pair)
LA2	Preparation and presentation of the report

LA3	Preparation for current and final control
LA4	Preparation for practical classes
LA5	Preparation of multimedia presentations
LA6	Self-study
LA7	Work with textbooks and relevant information sources

## 8. Teaching methods

Course involves learning through:

TM1	Case-study
TM2	Educational discussion / debate
TM3	Think-pair-share
TM4	Business games
TM5	Practice-oriented learning
TM6	Brainstorming

The training combines group classes, individual tasks. Case studies, business games, discussions, practical demonstrations, and presentations are mandatory learning activities.

Mastering skills such as ability to abstract thinking, analysis and synthesis; ability to learn, master modern knowledge and apply it in practical situations; knowledge and understanding of the subject area and understanding of professional activity; ability to make informed decisions; work in a team; interpersonal skills; ability to use information and communication technologies; determination and persistence in the tasks and responsibilities.

## 9. Methods and criteria for assessment

### 9.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

### 9.2 Formative assessment

FA1	Peer assessment
FA3	Discussion and self-correction of the work done by students
FA4	Interviews and oral comments of the teacher on his results
FA5	Verification and evaluation of written assignments

### 9.3 Summative assessment

SA1	Classroom work (surveys and testing)
SA2	Execution of a practical case (preparation, presentation, defense)
SA3	Work on online classes
SA4	Compilation of complex written modular control

Form of assessment:

<b>3 semester</b>		<b>200 scores</b>
SA1. Classroom work (surveys and testing)		<b>80</b>
	16x5	80
SA2. Execution of a practical case (preparation, presentation, defense)		<b>40</b>
		40
SA4. Compilation of complex written modular control		<b>80</b>
		80

Form of assessment (special cases):

<b>3 semester</b>		<b>200 scores</b>
SA2. Execution of a practical case (preparation, presentation, defense)		<b>40</b>
		40
SA3. Work on online classes		<b>80</b>
	16x5	80
SA4. Compilation of complex written modular control		<b>80</b>
		80

## 10. Learning resources

### 10.1 Material and technical support

MTS1	Multimedia, video and audio, projection equipment (video cameras, projectors, screens, smart boards, etc.)
MTS2	Library funds
MTS3	Information and communication systems

### 10.2 Information and methodical support

<b>Essential Reading</b>	
1	Безпека життєдіяльності та охорона праці: підручник. За заг. ред. В. В. Сокурєнка. Харків: ХНУВС. 2021. 308 с.



2	Основи охорони праці. Курс лекцій: навч. посібн. За ред. А.І. Ткачук, С.М. Богомаз-Назарова. Кропивницький: ПП "Центр оперативної поліграфії "Авангард". 2017. 156 с.
3	Атаманчук П.С., Мендерецький В.В., Панчук О.П., Білик Р.М. Охорона праці в галузі: навч. посібник. Київ: Видавництво учбової літератури. 2017. 324 с.
<b>Supplemental Reading</b>	
4	Конспект лекцій з дисципліни «Основи охорони праці, охорона праці в галузі, пожежної безпеки та цивільної оборони (цивільного захисту). За ред. Казначєєв Д.Г. Дніпро: ДДУВС. 2016. 136 с.
5	Шудренко І. В. Основи охорони праці : навч. посіб. / І. В. Шудренко. Житомир:Видавець О.О. Євенок. 2016. 214 с.
<b>Web-based and electronic resources</b>	
6	Online course "Основи інформаційної безпеки". Prometheus. КПІ. URL: <a href="https://courses.prometheus.org.ua/courses/KPI/IS101/2014_T1/about">https://courses.prometheus.org.ua/courses/KPI/IS101/2014_T1/about</a>
7	Online course "Інформаційна безпека". Prometheus. URL: <a href="https://courses.prometheus.org.ua/courses/course-v1:Internews+INFOS101+UA_2021_T3/about">https://courses.prometheus.org.ua/courses/course-v1:Internews+INFOS101+UA_2021_T3/about</a>