



## Course work on the discipline LABOR SAFETY AND CIVIL PROTECTION.

### Working program of the academic discipline (Syllabus)

Requisites of the discipline	
Level of high education	<i>First cycle of higher education (bachelor degree)</i>
Branch of knowledge	<i>16 Chemical and bioengineering</i>
Specialty	<i>163 Biomedical engineering</i>
Educational program	<i>Medical engineering</i>
Status of the discipline	<i>Normative</i>
Learning form	<i>Full-time (day-time)</i>
Semester	<i>Fourth year, seventh semester</i>
Course scope	<i>1 ECTS credits / 120 hours</i>
Semester control / control measures	<i>Test, Modular Control Work</i>
Schedule	<a href="http://rozklad.kpi.ua/Schedules/ViewSchedule.aspx?v=310d8d91-8a99-4461-8610-060b0b3b72c6">http://rozklad.kpi.ua/Schedules/ViewSchedule.aspx?v=310d8d91-8a99-4461-8610-060b0b3b72c6</a>
Language	<i>English</i>
Information about course supervisor and lecturers	<i>Kalinchyk V, PhD, e-mail – <a href="mailto:karlkory@gmail.com">karlkory@gmail.com</a>, Phone – 093-270-1052</i>
Course placement	<i>Course page on Moodle: <a href="https://do.ipk.kpi.ua/course/view.php?id=2576">https://do.ipk.kpi.ua/course/view.php?id=2576</a></i>

### Curriculum of the discipline

#### 1. Description of the discipline, its purpose, subject of study and learning outcomes

*The discipline belongs to the cycle of basic education.*

*Why does a bachelor need it?*

*Having mastered the material of the discipline, applicants for higher education will be able to use in their professional activities the provisions of legislative acts and regulations on labor safety and civil protection; assess sanitary and hygienic conditions and level of safety; identify harmful and dangerous factors in the domestic and social environment; have the basic methods of saving life and health, including in emergencies. Students will gain knowledge of the basics of life and labor safety and civil protection; labor management; economic and marketing components of labor protection; basic provisions of fire safety; procedure for action in emergency situations, special, state of emergency and martial law. They will also be able to choose and use means of collective and personal protection;*

*provide assistance and advice on practical safety issues; provide first aid; consciously act during evacuation measures.*

### ***The purpose of the credit module***

*Formation of future specialists' awareness of the need and competencies to solve in primary positions typical tasks of all areas of professional activity with mandatory compliance with labor safety requirements and standards, responsibility for personal and collective safety in everyday conditions and during emergencies, special and martial law.*

### ***The subject of the credit module***

*Legislative, normative-legal, socio-economic, engineering-technical and sanitary-hygienic bases of life safety, labor safety and civil protection. Particular attention is paid to the functions of future bachelors in the field of occupational safety in primary positions, sanitary and hygienic requirements for working with computers and the rights, responsibilities and behavior of the population in emergencies, special and martial law.*

### ***The purpose of teaching the discipline***

*Thus, the purpose of the discipline is the formation of students' general and professional competencies:*

- ability to apply knowledge in practical situations;*
- knowledge and understanding of the subject area and understanding of professional activity;*
- ability to communicate in the state language both orally and in writing;*
- skills of using information and communication technologies;*
- ability to conduct research at the appropriate level*
- ability to search, process and analyze information from various sources;*
- ability to generate new ideas (creativity);*
- ability to make informed decisions;*
- ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge / types of economic activity);*
- skills of safe activity;*
- ability to evaluate and ensure the quality of work performed;*
- ability to realize their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine;*
- ability to plan, design, develop, install, operate, maintain, maintain, control and coordinate the repair of devices, equipment and systems for prevention, diagnosis, treatment and rehabilitation used in hospitals and research institutes;*
- ability to ensure and monitor compliance with safety and biomedical ethics when working with medical equipment.*

## **2. Prerequisites and postrequisites of the discipline (place in the structural and logical scheme of education according to the relevant educational program)**

*Interdisciplinary links: In the structural-logical scheme, the discipline "Labor Safety and Civil Protection" is studied at the stage of training bachelor's degree and is a discipline that uses the achievements and methods of basic, applied sciences and main disciplines of the cycle of professional and practical training. This provides an opportunity to teach the discipline taking into account the professional orientation of future professionals.*

*The working curriculum of the credit module is based on the curriculum of the discipline "Labor Safety and Civil Protection", approved by the Methodical Council of NTUU "KPI" (№7 from 30.03.2017).*

### 3. The content of the discipline

The content of the course work covers three sections of the discipline "Labor Safety and Civil Protection":

Table 1.

Week	Subject
	<i>Section 1. Life safety as a basic concept of sustainable development</i>
1	<i>Categorical-conceptual apparatus for life safety, taxonomy of dangers (Subject 1.1)</i>
2	<i>Risk as a quantitative assessment of hazards (Subject 1.2)</i>
3	<i>Natural, man-made and socio-political dangers, their types, features and characteristics (Subject 1.3) General principles of first aid (Subject 1.4)</i>
	<i>Section 2. Labor safety as a guarantee of health and efficiency</i>
4	<i>The place and importance of labor safety in the system of life safety. Tasks and structure of labor safety (Subject 2.1.) Work area air (Subject 2.2.)</i>
5	<i>Acoustic factors of the production environment (Subject 2.3.)</i>
6,7	<i>Electromagnetic fields and radiation (Subject 2.4.)</i>
8	<i>Industrial lighting (Subject 2.5) Psychophysiological harmful factors of the labor process (Subject 2.6). Hygienic classification of labor. Certification of jobs under working conditions (Subject 2.7).</i>
9	<i>Specifics of industrial sanitation and occupational health in computerized workplaces (Subject 2.9). Sanitary and hygienic requirements to territories, production and auxiliary premises of objects of economic activity (Subject 2.8)</i>
10	<i>Safety of technological equipment, processes and works (Subject 2.10)</i>
11,12	<i>Electrical safety (Subject 2.11)</i>
13	<i>Fire safety at the enterprise (Subject 2.12)</i>
14	<i>Regulatory structure for labor protection (Subject 2.13). Investigation, registration, accounting, and state social insurance against accidents and occupational diseases at work (Subject 2.14).</i>
15	<i>Labor protection management (Subject 2.15.)</i>
	<i>Section 3. Civil protection of the population and territories</i>
16	<i>Legislative and normative-legal bases of civil protection. Emergencies of man-made, socio-political and military nature (Subject 3.1, 3.2)</i>
17	<i>Basic principles and ways to protect the population and territories from emergencies. Localization and liquidation of emergencies (Subject 3.3)</i>
18	<i>Basic principles and ways to protect the population and territories from emergencies. Organization and provision of civil protection (Subject 3.3, 3.4)</i>
18	<i>Control measure (Test)</i>

### 4. Training materials and resources

#### Basic literature:

1. *Human Safety and Civil Protection. Practicum [Electronic resource]: the tutorial for undergraduate students/ Igor Sikorsky Kyiv Polytechnic Institute; compiles: O. Ilchuk, V. Kalinchyk, Yu. Polukarov, A. Piatova, O. Polukarov. – Electronic text data (1 file: 2,85 Mb). – Kyiv : Igor Sikorsky Kyiv Polytechnic Institute, 2021. – 64 p.  
<https://ela.kpi.ua/handle/123456789/41406>*

2. *Labour Protection and Civil Defense. Practicum [Electronic resource]: the tutorial for undergraduate students of specialties 152 «Metrology and information – measuring equipment» (educational program «Biomedical devices and information-measuring systems») and 163 «Biomedical engineering» (educational program «Medical engineering»)/Igor Sikorsky Kyiv Polytechnic Institute; compiles: O. Ilchuk, V. Kalinchyk, Yu. Polukarov, A. Piatova, O. Polukarov. – Electronic text data (1 file: 4,37 Mb). – Kyiv : Igor Sikorsky Kyiv Polytechnic Institute, 2021. – 103 p.  
<https://ela.kpi.ua/handle/123456789/41408>*
3. *Охорона праці та цивільний захист: Підручн. / О. Г. Левченко, О. І. Полукаров, В. В. Зацарний, Ю. О. Полукаров, О. В. Землянська за ред. О. Г. Левченка. – Київ: КПІ ім. Ігоря Сікорського, «Основа», 2019. – 472 с.*
4. *Охорона праці та цивільний захист: Підручник для студ., які навчаються за спеціальностями галузей знань «Автоматизація та приладобудування» / О. Г. Левченко, О. І. Полукаров, В. В. Зацарний, Ю. О. Полукаров, О. В. Землянська за ред. О. Г. Левченка. – Київ: КПІ ім. Ігоря Сікорського, 2018. – 417с.  
<http://ela.kpi.ua/handle/123456789/26895>*
5. *Охорона праці та цивільний захист: конспект лекцій [Електронний ресурс] : навч. посіб. для студ. спеціальностей 151 «Автоматизація та комп'ютерно-інтегровані технології» і 152 «Метрологія та інформаційно-вимірвальна техніка» усіх спеціалізацій приладобудівного факультету / КПІ ім. Ігоря Сікорського ; уклад.: О. І. Полукаров, О. В. Землянська. – Електронні текстові данні (1 файл: 2,74 Мбайт)– Київ : КПІ ім. Ігоря Сікорського, 2018.– 285с.*
6. *Основи охорони праці [Електронне видання] : підручник / К. Н. Ткачук, В. В. Зацарний, Д. В. Зеркалов, О. І. Полукаров [та ін.] ; НТУУ «КПІ ім. Ігоря Сікорського». – Електронні текстові данні (1 файл: 7,4 Мбайт). – Київ : Основа, 2015. – 456 с.  
<http://ela.kpi.ua/handle/123456789/18512>*
7. *Ткачук К.Н., Мольчак Я.О., Каштанов С.Ф., Полукаров О.І. та ін. Управління охороною праці: Навчальний посібник. – Луцьк: 2015. – 287 с.*
8. *Ткачук К.Н., Калда Г.С., Каштанов С.Ф., Полукаров О.І. та ін. Психологія праці та її безпеки: Навчальний посібник. – Хмельницький: 2011. – 135 с.*
9. *Безпека життєдіяльності [Електронний ресурс] : методичні вказівки до виконання практичних робіт для студентів всіх спеціальностей за освітньо-кваліфікаційним рівнем «бакалавр» денної форми навчання / НТУУ «КПІ ім. Ігоря Сікорського» ; уклад. О. В. Землянська, Н. А. Праховнік, Н. Ф. Качинська, Н. П. Чукунова-Васильєва [та ін.]. – Електронні текстові данні (1 файл: 2,37 Мбайт). – Київ : НТУУ «КПІ ім. Ігоря Сікорського», 2014. – 120 с.  
<https://ela.kpi.ua/handle/123456789/18255>*
10. *Методичні матеріали та завдання до практичних занять на тему «Мікроклімат робочої зони, оздоровлення повітряного середовища та нормалізація мікроклімату й теплозахисту» з дисципліни "Основи охорони праці"/ Уклад.: Праховнік Н.А., Качинська Н.Ф., Арламов О.Ю., Чукунова-Васильєва Н.П.; гриф факультету (інституту); № протокола Ради 10; дата отримання грифу 30.05.2017*
11. *Методичні матеріали та завдання до практичних занять на тему «Методичні матеріали та завдання до практичних занять на тему "Захист від шуму, ультразвук та інфразвук у виробничому середовищі" з дисципліни "Основи охорони праці"/ Уклад.: Демчук Г.В., Качинська Н.Ф., Арламов О.Ю.. К.: 2017. - 28 с.; гриф факультету (інституту); № протокола Ради 10; дата отримання грифу 30.05.2017*
12. *Методичні матеріали та завдання до практичних занять на тему «Виробниче освітлення» з дисципліни "Основи охорони праці"/ Уклад.: Полукаров О.І., Качинська Н.Ф., Ільчук О.С., Ковтун А.І.; гриф факультету (інституту); № протокола Ради 10; дата отримання грифу 30.05.2017*
13. *Цивільний захист [Електронний ресурс] : методичні вказівки до виконання практичних робіт для студентів всіх напрямків підготовки за освітньо-кваліфікаційними рівнями «спеціаліст» і «магістр» денної форми навчання. / НТУУ «КПІ ім. Ігоря Сікорського» ; уклад. О. В. Землянська, Н. Ф. Качинська, О. С. Ільчук, Н. П. Чукунова-Васильєва. –*

Електронні текстові данні (1 файл: 1,1 Мбайт). – Київ : НТУУ «КПІ ім. Ігоря Сікорського», 2015. – 69 с.

14. Методичні вказівки до виконання лабораторної роботи на тему "Дослідження природного освітлення" з дисципліни "Охорона праці та цивільний захист" для студентів усіх інженерних спеціальностей університету денної форми навчання/ Уклад.: Качинська Н.Ф., Козлов С.С., Мітюк Л.О. К.: 2017. - 11 с.

#### **Additional literature:**

1. Конституція України. Основний закон України від 28.06.1996 № 254к/96-ВР (поточна редакція – 30.09.2016) – zakon4.rada.gov.ua.
2. Кодекс цивільного захисту України від 02.10.2012 № 5403-VI (поточна редакція – 05.10.2016) – zakon2.rada.gov.ua.
3. Кодекс законів про працю України від 10.12.1971 № 322-VIII (поточна редакція – 05.10.2016) – zakon5.rada.gov.ua.
4. Про основи національної безпеки України: Закон України від 19.06.2003 № 964-IV (поточна редакція – 07.08.2015) – zakon5.rada.gov.ua.
5. Про забезпечення санітарного та епідемічного благополуччя населення: Закон України від 24.02.1994 № 4004-XII (поточна редакція – 28.12.2015) – zakon5.rada.gov.ua.
6. Про затвердження Загальнодержавної соціальної програми поліпшення стану безпеки, гігієни праці та виробничого середовища на 2014-2018 роки: Закон України від 04.04.2013 (поточна редакція – 01.01.2015) – zakon2.rada.gov.ua.
7. Конвенція про основи, що сприяють безпеці й гігієні праці № 187: Міжнародний документ від 15.06.2006 № 187 – zakon5.rada.gov.ua.
8. Про охорону праці: Закон України від 14.10.1992 № 2694-XII – zakon5.rada.gov.ua.
9. Про основні засади державного нагляду (контролю) у сфері господарської діяльності: Закон України від 05.04.2007 № 877-V – zakon0.rada.gov.ua.
10. Про державний ринковий нагляд і контроль нехарчової продукції: Закон України від 02.12.2010 № 2735-VI – zakon2.rada.gov.ua.
11. Про загальнообов'язкове державне соціальне страхування: Закон України від 23.09.1999 № 1105-XIV – zakon0.rada.gov.ua.
12. ДСТУ 2272-2006 Пожежна безпека. Терміни та визначення основних понять.
13. ДСТУ ISO 45001:2019 Системи управління охороною здоров'я та безпекою праці. Вимоги та настанови щодо застосування
14. Реєстр нормативно-правових актів з охорони праці (НПАОП).
15. Порядок класифікації надзвичайних ситуацій за їх рівнями: Постанова Кабінету Міністрів України від 24.03.2004 № 368 – zakon3.rada.gov.ua.
16. Про затвердження Порядку здійснення навчання населення діям у надзвичайних ситуаціях: Постанова Кабінету Міністрів України від 26.06.2013 № 444 – zakon3.rada.gov.ua.
17. Про затвердження Положення про єдину державну систему цивільного захисту: Постанова Кабінету Міністрів України від 09.01.2014 № 11 – zakon5.rada.gov.ua.
18. терористичних актів, диверсій, мінування: Лист Міністерства освіти і науки України та Державної служби України з надзвичайних ситуацій від 05.02.2015 р. № 1/9-55/02-1645/12 – document.ua.
19. ДСТУ 8828:2019 Пожежна безпека. Загальні положення [https://zakon.isu.net.ua/sites/default/files/normdocs/dstu\\_8828\\_2019.pdf](https://zakon.isu.net.ua/sites/default/files/normdocs/dstu_8828_2019.pdf)

## **Educational content**

### **5. Methods of mastering the discipline (educational component) and independent work of the student (IWS)**

The schedule of course work with an approximate distribution of hours allocated for independent work of students is given in table 2

Table 2

<i>n</i>	<i>The name of the stage of the calendar plan</i>	<i>IWS, Number of hours</i>	<i>Deadline, Week of the semester</i>
1.	<i>Categorical-conceptual apparatus for life safety, taxonomy of dangers</i>	6	1
2.	<i>Risk as a quantitative assessment of hazards</i>	6	2
3.	<i>Natural, man-made and socio-political dangers, their types, features and characteristics</i>	5	3
4.	<i>General principles of first aid</i>	5	4
5.	<i>The place and importance of labor safety in the system of life safety. Tasks and structure of labor safety</i>	1	4
6.	<i>Work area air</i>	11	5
7.	<i>Acoustic factors of the production environment</i>	9	6
8.	<i>Electromagnetic fields and radiation</i>	5	7
9.	<i>Industrial lighting</i>	8	8
10.	<i>Psychophysiological harmful factors of the labor process</i>	0,5	9
11.	<i>Hygienic classification of labor. Certification of jobs under working conditions</i>	1,5	9
12.	<i>Specifics of industrial sanitation and occupational health in computerized workplaces</i>	5,75	10
13.	<i>Sanitary and hygienic requirements to territories, production and auxiliary premises of objects of economic activity</i>	0,25	10
14.	<i>Safety of technological equipment, processes and works</i>	4	11
15.	<i>Electrical safety</i>	10	12
16.	<i>Fire safety at the enterprise</i>	6	13
17.	<i>Regulatory structure for labor protection</i>	3	14
18.	<i>Investigation, registration, accounting, and state social insurance against accidents and occupational diseases</i>	1	14
19.	<i>Labor protection management</i>	4	15
20.	<i>Legislative and normative-legal bases of civil protection. Emergencies of man-made, socio-political and military nature</i>	5	16
21.	<i>Basic principles and ways to protect the population and territories from emergencies. Localization and liquidation of emergencies</i>	6	17
22.	<i>Basic principles and ways to protect the population and territories from emergencies. Organization and provision of civil protection</i>	9	18
23.	<i>Defense of course work</i>	8	18
	<b><i>Hours in general</i></b>	<b>120</b>	

## 6. Policy of academic discipline (educational component)

### **Attending classes**

Attendance at lectures is free, points for attending the lecture are not added. However, a significant part of the student rating is formed through active participation in activities in practical classes, namely: solving problems, participation in educational games, analysis of specific situations, group and individual work in conducting and analyzing research.

### **Academic integrity**

The policy and principles of academic integrity are defined in Section 3 of the Code of Honor of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". Read more: <https://kpi.ua/code>.

### **Norms of ethical behavior**

Normative principles of behavior of students and employees, defined in sections 2 of the Code of Honor of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". Read more: <https://kpi.ua/code>.

### **Procedure for appealing the results of control measures**

Students have the opportunity to raise any issue related to the control procedure and expect it to be addressed according to predefined procedures.

The student has the right to appeal the results of the control measure according to the approved provision on appeals in the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (approved by the order №NON/128/2021 from 20.05.2021) - <https://osvita.kpi.ua/index.php/node/182>

### **Inclusive education**

The discipline "Medical Microprocessor Systems" can be taught to most students with special educational needs, except for students with severe visual impairments who do not allow to perform tasks using personal computers, laptops and / or other technical means.

### **Distance learning**

Distance learning takes place through the Sikorsky Distance learning Platform «Sikorsky».

Distance learning through additional online courses on certain topics is allowed subject to agreement with students. If a small number of students wish to take an online course on a specific topic, studying the material with such courses is allowed, but students must complete all the tasks provided in the discipline.

The list of courses is offered by the teacher after the students have expressed a desire (because the bank of available courses is updated almost every month).

The student provides a document confirming the completion of the distance course (in the case of a full course) or provides practical tasks from the distance course and subject to an oral interview with the teacher on the topics can receive grades for control measures provided for the studied topics (express control / test tasks, practical work).

Performance of practical works, and also performance of settlement and graphic work, is carried out during independent work of students in a remote mode (with a possibility of consultation with the teacher through e-mail, social networks).

### **Learning a foreign language**

Teaching in English is carried out only for foreign students.

At the request of students, it is allowed to study the material with the help of English-language online courses on topics that correspond to the topics of specific classes.

## 7. Monitor and evaluate the system of evaluation of learning outcomes (*Rating System of Evaluation*):

### *Calendar control (CC)*

*Calendar control is performed at 8 and 14 weeks of the semester. The condition for obtaining a positive assessment of the calendar control over the educational component of "course work" is the student's compliance with the schedule of course work (see Table 1, paragraphs 5, 8).*

### *Semester control*

*The semester credit test is held after the end of its study, before the examination session. The test is carried out during the last week of study in the semester.*

*The test is based on the results of the student's work in the semester, if he received at least 60 points. If the student did not receive the required number of points during the semester, the test is based on the results of the final interview and in distance learning - taking into account additional credit testing (if the conditions for admission to the test - at least 45 points per semester). The maximum number of points that a student can receive for a credit interview (test) may not exceed 30 points. Students who did not score 45 points per semester before the main interview (testing) during the main session are not allowed.*

### *Rating system for assessing learning outcomes*

*The rating assessment of the course work has three components:*

- 1. Performing practical works.*
- 2. Performing and protection laboratory works.*
- 3. Test to determine the results of mastering the theoretical component of the course (usually in distance learning) or in response to the 2nd express survey during lectures (or practical)*

*The size of the scale of the practical and laboratory works is 60 points, and the protection component - 40 points (Table 3).*

*Table 3*

<i>n</i>	<i>The component of the course work</i>	<i>Weight points</i>	<i>Number</i>	<i>Total</i>
	<i>Practical works</i>	<i>4</i>	<i>13</i>	<i>52</i>
	<i>Laboratory works</i>	<i>2</i>	<i>4</i>	<i>8</i>
	<i>Test/survey</i>	<i>10</i>	<i>4</i>	<i>40</i>
	<i>Total</i>			<i>100</i>

*Criteria for evaluating the two components of the course work are shown in table 4.*

*Table 4*

<i>n</i>	<i>Components of the course work</i>	<i>Weight points</i>	<i>Evaluation criterion, percentage (%) of required information</i>			
			<i>not less than 90%</i>	<i>not less than 75%</i>	<i>not less than 60%</i>	<i>less than 50%</i>
	<i>Practical works</i>	<i>4</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>1-0</i>
	<i>Laboratory works</i>	<i>2</i>	<i>2</i>	<i>1,5</i>	<i>1</i>	<i>0,5-0</i>
	<i>Test/survey</i>	<i>10</i>	<i>10-9</i>	<i>8-7,5</i>	<i>7-6</i>	<i>5-0</i>



The sum of the scores of the two components is transferred to the credit score in accordance with table 5.

Table 5. Translation of rating points to grades on a university scale:

Number points	Assessment on the university scale
100-95	Perfectly / Відмінно
94-85	Very good / Дуже добре
84-75	Good / Добре
74-65	Satisfactorily / Задовільно
64-60	Enough / Достатньо
Less 60	Unsatisfactorily / Незадовільно
Admission conditions are not met	Not allowed / Не допущено

### Additional information on the discipline

#### 8. Additional information on the discipline (educational component)

Work program of the discipline (syllabus) "Labor Safety and Civil Protection", for students of the Faculty of Biomedical Engineering in the specialties 163 Biomedical engineering of bachelor's degree, taking into account the differences, specifics and features of future professionals. Greater emphasis is placed on issues of labor protection and civil protection, which take place when using technological equipment and processes, ensuring safety in their design, manufacture, installation, taking into account the possible negative effects of technological accidents and implementing preventive measures to prevent hazards.

In the working program of the discipline the task of studying the discipline is presented in the form of a system of specific knowledge, skills and competencies indicating the level of their formation in the direction in accordance with the educational and professional program.

The lecture material is presented taking into account such principles of didactics as systematicity, clarity, continuity and consistency. Theoretical knowledge is consolidated in practical classes, skills and abilities necessary for future specialists to perform professional duties in the direction of providing measures aimed at regulating man-caused and natural safety, conducting risk assessment, early response to the threat of emergency based on monitoring data are developed. examinations, research and forecasts on the possible course of events in order to prevent them from escalating into an emergency situation or mitigate its possible consequences, taking into account the peculiarities of the future profession and possible primary positions of bachelors.

Assessment of the quality of mastering in the discipline "Occupational Safety and Civil Protection", includes the current control of performance, calendar control and the final test. The success of mastering the discipline is determined using a rating system. The final assessment of the quality of learning the curriculum is determined by the results of the test.

**Work program of the discipline (syllabus):**

*Compiled by: PhD, Kalinchyk Vitalii,*

*Approved by the Department of Labor protection, industrial and civil safety (protocol № 12 to 05.05.2021)*

*Approved by the Methodical Commission of the Institute of Energy Saving and Energy Management (protocol № 7 to 23.06.2021)*

## **Appendix.**

### **Section I**

1. *Analyze the relationship of individual components of the vital system and their importance for a comprehensive solution to human security problems*
2. *Give and describe the classification of hazards and the principles of their identification*
3. *Risk as a quantitative assessment of hazards*
4. *Describe the methodological approaches to identifying risks*
5. *Explain the essence of the concept of acceptable risk and risk management*
6. *Provide a brief description of the methods and tools for managing the identified risk*
7. *Give the main types and characteristics of modern socio-political dangers*
8. *Types of terrorism, its primary, secondary and cascading impact factors*
9. *Algorithm of actions at detection of suspicious and explosive devices in a crowded place*
10. *Describe the impact of modern information technology on human health and public safety*
11. *Corruption and criminalization as threats to sustainable development of society*
12. *Bad habits, social diseases and their prevention*
13. *The concept and types of crowds. Human behavior in the crowd*
14. *Analyze the features of safety in the domestic and industrial environment, as well as in emergencies in terms of subjectivity of management and responsibility*
15. *Legal and socio-economic features of ensuring and guaranteeing the safety of the individual in the domestic and working environment in everyday life and in emergencies*

### **Section II**

16. *Analyze the place and features of labor safety in the system of safety of human life*
17. *Define and describe the purpose, structure, subjects and objects of Labor Safety*
18. *List and describe the main sources of negative impact on the human body during work*
19. *Analyze the factors of the labor process and the working environment in terms of labor safety*
20. *Identify and analyze the factors that determine the sanitary and hygienic working conditions*
21. *To give and characterize hygienic parameters of air of a working zone and principles of their estimation*
22. *Describe the effectiveness and scope of the main methods of normalization of air parameters of the working area*
23. *Analyze the possibilities and effectiveness of methods to prevent air pollution in the work area*
24. *Describe the principles and methods of evaluation of industrial lighting*
25. *Analyze options for opportunities to provide workplace lighting. Features of selection and operation of lighting systems*
26. *Justify the requirements for lighting workplaces*
27. *Explain the features of the impact and assessment of the effects of human vibrations*
28. *Analyze the methods of collective and individual protection against vibration*
29. *Explain the features of the impact and assessment of the effects on humans of industrial noise.*
30. *Analyze the methods of collective and individual protection against noise*
31. *Identify sources, formulate and explain the features of exposure, assessment and methods of protection against ultrasound and infrasound*
32. *Explain the features of the impact and assessment of the effects on humans of electromagnetic radiation of the RF range and fields*
33. *Analyze possible sources, methods of collective and individual protection against electromagnetic radiation of the RF range and fields*
34. *Explain the features of the impact and assessment of the effects on humans of ionizing radiation*
35. *Analyze the methods of collective and individual protection of workers from ionizing radiation*
36. *Explain the features of the impact and assessment of the effects on humans of radiation in the optical range*
37. *Describe the sources, methods of collective and individual protection against radiation in the optical range*
38. *Analyze the essence and practical significance of hygienic classification of labor*

39. *Formulate priorities in the areas of safety of technological equipment and processes (according to the future specialty)*
40. *Describe the effect of electric current on the human body and its possible consequences.*
41. *Analyze the factors that affect the risk of electric shock*
42. *Analyze the probable conditions of electric shock. Give examples*
43. *To substantiate the practical significance of the classification of premises according to the degree of human electric shock according to the PUE to ensure the protection of personnel*
44. *Provide a general description of the methods of ensuring the safe operation of electrical installations and the principles of their selection*
45. *Explain the features of application and selection of the principle and type of protective measures for emergency operation of electrical equipment*
46. *Explain the content and features of the use of electrical protection measures*
47. *Determine the conditions of occurrence and course of the combustion process and analyze their impact on the fire prevention system*
48. *Analyze the practical significance of the classification of premises and buildings for explosion and fire hazard*
49. *Analyze the practical significance of the classification of fire and explosion zones*
50. *Describe the role and directions of the fire prevention system at the enterprise*
51. *Describe the role and components of the fire extinguishing system at the enterprise*
52. *Describe the role and components of the system of organizational and technical fire safety measures at the enterprise*
53. *Analyze the legislation on labor safety in Ukraine. Responsibility for violation of the legislation of Labor Safety*
54. *Explain the content and property of the Law of Ukraine "Labor Safety "*
55. *To analyze the basic principles of state policy on security in Ukraine from the point of view of employees and officials of enterprises and organizations.*
56. *Describe and evaluate the guarantees of workers' rights to Labor Safety*
57. *Analyze the structure and procedure for the use of legal documents on Labor Safety*
58. *To cite and comment on the most important international documents in the field of Labor Safety*
59. *Assess the place and importance of labor safety in the social responsibility of employers*
60. *Analyze the system of public administration in Ukraine*
61. *Formulate the basic principles of state supervision of Labor Safety in Ukraine*
62. *Analyze the system and effectiveness of departmental and public control over Labor Safety*
63. *The purpose, objects, subjects and the main tasks of the management system of labor safety at the enterprise (in the organization)*
64. *Give a brief description of the functions of occupational safety management in the organization*
65. *Analyze the general structure and typical principles of functioning of the labor safety management system at the enterprise*
66. *Assess the role and importance of accounting, analysis and evaluation of working conditions in the management system of hygiene*
67. *Assess the role and importance and analyze the basic principles and types of control over the state of labor safety and the functioning in the organization*
68. *To substantiate the need to use and propose effective methods of stimulating the activities of workers in the direction of labor safety*
69. *Describe the responsibilities and functions of the employer in organizing and coordinating work on occupational safety management*
70. *Propose the main provisions of the job description of the head of the division of the enterprise, devoted to the functions and responsibilities related to occupational safety*
71. *To substantiate the need and analyze the essence of a systematic approach to the organization of labor safety at the enterprise*
72. *Evaluate the feasibility and cost-effectiveness of possible options for typical types of labor safety costs*
73. *Describe the principles and sources of funding for labor safety*

74. *Justify the reasons and the need for certification of typical jobs under working conditions*
75. *Compare the purpose and content of certification of production and certification of jobs under working conditions*
76. *Analyze the importance and consequences of injuries and occupational diseases for the enterprise (organization)*
77. *Comment on the responsibilities and functions of the head of the enterprise (organization) in the investigation of accidents and occupational diseases*
78. *Identify the main stages and results of the commission of the enterprise to investigate the accident. List and procedure for processing documents*
79. *To state the order of actions of the head of works (division) in case of an accident*
80. *Identify the objects and describe the functions and tasks of the subjects of insurance against accidents and occupational diseases*
81. *Formulate the procedure for insurance against accidents (actions of the insured and the insured person). Insured event and grounds for insurance payments and compensations*
82. *Formulate the conditions of receipt and types of insurance benefits that an employee (family) can count on in case of injury, occupational disease or death.*

### **Section III**

83. *Give and comment on the importance and role of the components of the legal basis of civil protection*
84. *Subjects of provision and principles of civil protection*
85. *The main tasks and structure of the unified state system of civil protection (ECTS)*
86. *Formulate the rights and responsibilities of citizens of Ukraine in the field of civil protection*
87. *General principles of education and preparation of the population for action in emergency situations*
88. *Functional responsibilities and procedures of heads of divisions of enterprises and organizations in conditions of emergencies, special and martial law*
89. *Describe natural emergencies and their consequences*
90. *Explain the assessment of the classification of protective structures of civil defense by their properties. Provide a description of the classes and groups of the PRU*
91. *Explain measures for life support of victims in emergency zones, on evacuation routes and in places of accommodation of the evacuated population according to the established norms and standards*
92. *Describe the types of evacuation depending on the characteristics of the emergency.*
93. *Analyze the structure of the organization of civil protection at the object of economic activity*
94. *Define the tasks and functional responsibilities of economic entities in the field of civil protection*
95. *Identify and explain the set of organizational and protective measures in the field of central government at the object of economic activity*
96. *General principles of education and preparation of the population for action in emergency situations*
97. *Functional responsibilities and procedure of heads of divisions of enterprises and organizations in conditions of emergencies, special and martial law*
98. *Give an algorithm of actions of different categories of the population when notifying of the threat or emergency of a special and military situation*
99. *Give an algorithm of behavior for the civilian population, which was in the combat zone (at the risk of small arms, air danger)*