

Silabussive component

Labor protection

Discipline name:	Labor protection
Level of higher education:	first (bachelor)
Course page in Moodle:	https://dl2022.khadi-kh.com/course/view.php?id=1006
The volume of the educational	3 credits (90 hours)
Form of final control	Passed
Consultations:	on schedule
Name of the department:	Department of Metrology and Life Safety
Language of instruction:	English
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Summary of the educational component:

The goal is to prepare students for specialized activities in the field of labor protection.

Subject: a system of legislative acts, socio-economic, organizational, technical and therapeutic and preventive measures and means that ensure the efficiency and preservation of human health in the process of work.

The main tasks of studying the discipline are:

- know the legislative and regulatory documents on labor protection;
- know the concepts of the organization of labor protection in the state and at work;
- know the duties and responsibilities of employers of enterprises (organizations) and their divisions to ensure healthy and safe working conditions for workers;
- know the main international documents on labor protection;
- know the methods and means of ensuring the regulatory values of the parameters of hazardous and harmful factors.
- be able to identify dangerous and harmful production factors that accompany labor in production;
- be able to organize the solution of labor protection issues at work (organization);
- be able to use regulatory documents and ensure safe and harmless working conditions at work;
- be able to organize and participate in the investigation of accidents, occupational diseases and accidents at work.

Prerequisites for the study of the educational component: life safety, physics, chemistry

Competences that the applicant acquires:

General competencies:

Ability to realize their rights and obligations 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 defend their rights, guaranteed by labor protection legislation)

The ability to preserve and increase moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, to use various types and forms of physical activity for active recreation and maintaining a healthy lifestyle. (Formation of a culture of safe work, responsibility for their lives and lives and the health of people nearby).

Skills in the use of information and communication technologies. (Use of computer programs to solve problems of ensuring occupational safety and drawing up an expert opinion and recommendations for improving working conditions).

Ability to generate new ideas (creativity) and develop and manage projects.

Skills in carrying out safe activities. The desire to preserve the environment.

Knowledge and understanding of the subject area and understanding of professional activity.

Special (professional) competencies:

Ability to use methods of preserving life, health and performance.

Ability to evaluate the operational, technical and economic, technological, legal, social and environmental components of production activities.

Ability to assess and ensure the safety of transport activities.

Learning outcomes:

Take responsibility for yourself, show civic consciousness, social activity and participation in the life of civil society, think analytically, critically understand the world.

Give answers, explain, understand explanations, discuss, report in the state language at a level sufficient for professional activity.

Develop, plan, implement methods of organizing safe activities in the field of transport systems and technologies.

Develop and use transport technologies taking into account the requirements for environmental conservation.

Assess dangerous and harmful factors and their impact on human health.

Investigate the human factor problems associated with transport, as well as the consequences of errors for safety and management. Determine the patterns of human behavior in connection with mistakes.

Thematic plan

Topic number	Title of topics (LK, LR, PR, SZ, WED)	Number of hours	
		Eye	Correspondence
1	LK1 Legal and organizational bases of labor protection.	2	2
	CP1 Financing of labor protection. Basic principles and sources. Measures and means of labor protection, the costs of the implementation and acquisition of which are included in the gross costs. Responsibility of officials and employees for violation of labor protection legislation.	2	
	PR1 Research of microclimatic conditions of the production environment	2	
	CP1. Law of Ukraine on Labor Protection	5	
2	LK2 Occupational Health and Safety Training	2	
	PR2 Study of natural lighting of industrial premises and workplaces	2	
	PR3 Research of artificial lighting of industrial premises and workplaces	2	

	CP2. Model provision on the procedure for conducting training and testing knowledge on labor protection issues and the List of works with increased danger	5	
3	LK3 Organization of labor protection at the enterprise	2	
	CP3 The main tasks, functions of the labor protection service. The structure and number of labor protection services. Rights and obligations of employees of the labor protection service. Public control over the state of labor protection in the organization.	5	
4	LK4 Prevention of occupational injuries and occupational diseases. State supervision and public control	2	
	LK5 State management of labor protection, state supervision and public control over labor protection. Social insurance against industrial accidents	2	
	CP4. State management of labor protection, state supervision and public control over labor protection The system of state management of labor protection in Ukraine. Competence and powers of public administration of labor protection. National Council for the Safe Life of the Population.	5	
5	PR4 Certification of workplaces according to working conditions	2	
	CP5 Electromagnetic fields and radiation of the radio frequency range	5	
	CP6 Optical band radiation. Classification and radiation sources of the optical range. Means and measures of protection against IR and UV radiation.	4	
	CP7. Ionizing radiation Production sources, ionizing radiation, classification and features of their use. Typical methods and means of protecting personnel from ionizing radiation in production conditions.	5	
6	PR5 Production noise research	2	
	CP8. Get acquainted with the methods and purpose of sound insulation. Calculate sound insulation, design an effective soundproof fence. <i>Software</i> is a computer program <i>Is_Dev_Mes</i> .	5	
	CP9 Sources, classification and vibration characteristics. Hygienic rationing of vibrations. Methods for controlling vibration parameters. Typical measures and means of collective and individual protection against vibrations.	5	
7	LK6 General safety requirements. Safety in the transport of dangerous goods	2	
	CP10. General safety requirements Safety during loading and unloading operations. <i>The software</i> is a <i>SteelRupes</i> computer program.	5	

8	PR 6 Harmful substances in the air of the working area. Ventilation of industrial premises. Calculation of air exchange <i>Software - computer program Calculation of air exchange_V_0.1.</i>	2	
9	LK7 Elektrobepok	2	
	PR7 Elektrobepok.	2	
	SR11 The installation of electric power plants is a normative document explaining the device, principles of construction, requirements for individual systems, their elements and components of electrical installations.	5	
10	LK8 Fire safety	2	
	PR 8 Fire safety. <i>The software is a FireSafe computer program.</i>	2	
	CP12 Determine the category of premises by fire hazard. <i>The software is a FireSafe computer program.</i>	4	
Together	LUX	16	
	AVE	16	
	WED	58	
	Together	90	

Individual educational and research task (if any):

Teaching Methods:

MH1-verbal method (lecture, explanation, narration);

MH2 - practical method (practical exercises);

MH3 - visual method (method of illustrations, method of demonstrations);

MH4 - work with literature (educational and methodical; work with textbooks and manuals);

Forms and methods of evaluation

FMO2 - final control (semester exam, settlement and graphic work);

FMO3 - oral control (conversation);

FMO4 - written control (individual assignments);

FMO5 - test control;

FMO7 - practical verification (protection of practical work).

Grading system and requirements:

Current success

1 The current performance of applicants for the performance of educational types of work in training sessions and for the performance of tasks of independent work is assessed using a four-point scale of grades, followed by recalculation in a 100-point scale. When assessing current performance, all types of work provided for by the curriculum are taken into account.

1.1 Lectures are evaluated by determining the quality of the specified tasks.

1.2 Practical classes are assessed by the quality of the control or individual task, the performance and design of practical work.

1.3 Laboratory classes are assessed by the quality of the implementation of reports on the performance of laboratory work.

1.4 Seminars are evaluated by the quality of the individual task / abstract.

2 Evaluation of the current performance of applicants for higher education is carried out at each practical lesson (laboratory or seminar) on a four-point scale ("5", "4", "C", "2") and recorded

in the journal of accounting for academic performance.

– "excellent": the applicant perfectly mastered the theoretical material, demonstrates deep knowledge of the relevant topic or academic discipline, the main provisions;

- "good": the applicant has mastered the theoretical material well, owns the main aspects from primary sources and recommended literature, reasonably teaches it; has practical skills, expresses his reasoning about certain problems, but assumes certain inaccuracies and errors in the logic of presenting theoretical content or in the analysis of practical;

– "satisfactory": the applicant has mainly mastered the theoretical knowledge of the educational topic, or discipline, is guided in primary sources and recommended literature, but unconvincingly answers, confuses concepts, uncertainly answers additional questions, does not have stable knowledge; answering questions of a practical nature, reveals inaccuracies in knowledge, does not know how to evaluate facts and phenomena, connect them with a future profession;

– "unsatisfactory": the applicant has not mastered the educational material of the topic (discipline), does not know scientific facts, definitions, is almost not oriented in primary sources and recommended literature, there is no scientific thinking, practical skills are not formed.

3 The final score for current activities is recognized as the arithmetic average sum of points for each lesson, for individual work, current tests according to the formula:

$$K^{current} = \frac{K1 + K2 + \dots + Kn}{n},$$

where $K^{current}$ is the final assessment of success based on the results of current control;

$K1, K2, \dots, KP$ - assessment of the success of the -th measure of current control; n

n – the number of measures of current control.

Scores are converted to points according to the recalculation scale (Table 1).

Table 1 – Recalculation of the average score for current activities into a multi-point scale

4-point scale	100- point scale	4- point scale	100- point scale	4- point scale	100- point scale	4- point scale	100- point scale
5	100	4,45	89	3,90	78	3,35	67
4,95	99	4,4	88	3,85	77	3,3	66
4,9	98	4,35	87	3,80	76	3,25	65
4,85	97	4,3	86	3,75	75	3,2	64
4,8	96	4,25	85	3,7	74	3,15	63
4,75	95	4,20	84	3,65	73	3,1	62
4-point scale	100- point scale	4- point scale	100- point scale	4- point scale	100- point scale	4- point scale	100- point scale
4,7	94	4,15	83	3,60	72	3,05	61
4,65	93	4,10	82	3,55	71	3	60
4,6	92	4,05	81	3,5	70	from 1,78 to 2,99	from 35 to 59
						Reassembly	
4,55	91	4,00	80	3,45	69	from 0 to 1,77	from 0 to 34
4,5	90	3,95	79	3,4	68	Re-study	

Final assessment

1 The exam is conducted after studying all the topics of the discipline and is compiled by applicants for higher education during the examination session after the end of all classroom

classes

2 Applicants for higher education who have completed all types of work provided for by the curriculum for the discipline are allowed to the exam:

- were present at all classroom classes (lectures, seminars, practical);
- timely worked out all missed classes;
- scored the minimum number of points for current academic performance (at least 36 points, which corresponds to the national scale "3");

If the current academic performance in the discipline is less than 36 points, the applicant for higher education has the opportunity to increase his current score to the minimum before the start of the examination session.

3 Assessment of the knowledge of applicants in the exam is carried out on a 100-point scale. Assessment of knowledge of applicants by testing is carried out on a scale:

- "Excellent": at least 90% of correct answers;
- "Very good": from 82% to 89% of correct answers;
- "Good": from 74% to 81% of correct answers;
- "Satisfactory": from 67% to 73% of correct answers;
- "Satisfactory enough": from 60% to 66% of correct answers;
- "Unsatisfactory": less than 60% of correct answers.

4 The final grade in the discipline is defined as the weighted average score, taking into account the overall grade for current performance and the grade for passing the exam.

5 The calculation of the total final grade for the study of the discipline is carried out according to the formula:

$$PK^{ek3} = 0,6 \cdot K^{nomoy} + 0,4 \cdot E,$$

where PK^{ek3} – the final assessment of academic performance in the disciplines, the form of final control for which is the exam;

K^{nomoy} – final assessment of success based on the results of current control (on a 100-point scale);

E – score on the results of the exam (on a 100-point scale).

0,6 і 0,4 – coefficients of the ratio of points for current academic performance and passing the exam.

6 For the performance of individual independent work and participation in scientific events, applicants are awarded additional points.

6.1 Additional points are added to the sum of points scored by the higher education student for current academic activities (for disciplines for which the final form of control is credit), or to the final grade in the discipline, the final form of control for which is the exam.

6.2 The number of additional points awarded for different types of individual tasks depends on their volume and significance:

- prizes in the discipline at the international / all-Ukrainian competition of scientific student works – 20 points;
- prizes in the discipline at the All-Ukrainian Olympiads – 20 points;
- participation in the international / all-Ukrainian competition of scientific student works – 15 points
- participation in international / all-Ukrainian scientific conferences of students and young scientists – 12 points;
- participation in all-Ukrainian olympiads in the discipline – 10 points
- participation in olympiads and scientific conferences of KhNADU in the discipline – 5 points;
- implementation of individual research (educational and research) tasks of increased complexity – 5 points.

6.3 The number of additional points may not exceed 20 points.

7 The total final score for the study of the discipline may not exceed 100 points.
The total final grade for the study of the discipline is determined according to the scale given in Table 2.

Table 2 – Scale of assessment of applicants' knowledge based on the results of the final control in the discipline

Score in points	National scale score		ECTS score	
			Score	Criteria
	Exam	Passed		
90-100	Perfectly	Enrolled	A	The theoretical content of the course is mastered entirely, without gaps, the necessary practical skills of working with the mastered material are formed, all the training tasks provided by the training program have been completed, the quality of their implementation is estimated by the number of points close to the maximum
80–89	Well	Enrolled	B	The theoretical content of the course is mastered entirely, without gaps, the necessary practical skills in working with the mastered material are mainly formed, all the training tasks provided by the training program have been completed, the quality of most of them is estimated by the number of points close to the maximum
75-79			With	The theoretical content of the course is mastered entirely, without gaps, some practical skills of working with the mastered material are not sufficiently formed, all the training tasks provided by the training program have been completed, the quality of none of them is assessed by the minimum number of points, some types of tasks are performed with errors
67-74	Satisfactory		D	The theoretical content of the course is partially mastered, but the gaps are not significant, the necessary practical skills in working with the mastered material are mainly formed, most of the training tasks provided by the training program have been completed, some of the tasks performed may contain errors
60–66			And	The theoretical content of the course is partially mastered, some practical skills of work are not formed, many of the training tasks provided by the training program have not been completed, or the quality of some of them is estimated by the number of points close to the minimum.

Score in points	National scale score		ECTS score	
			Score	Criteria
	Exam	Passed		
35–59	Disappointing	Not credited	FX	The theoretical content of the course is partially mastered, the necessary practical skills of work are not formed, most of the provided training programs have not been completed, or the quality of their implementation is estimated by the number of points close to the minimum; with additional independent work on the course material, it is possible to improve the quality of the training tasks (with the possibility of re-compilation)
0–34			F	The theoretical content of the course has not been mastered, the necessary practical skills of work are not formed, all completed training tasks contain gross errors, additional independent work on the course material will not lead to any significant improvement in the quality of the training tasks (with a mandatory repeated course)

Course Policy:

- the course involves teamwork, the environment in the audience is friendly, creative, open to constructive criticism;
- mastering the discipline involves the obligatory attendance of lectures and practical classes, as well as independent work;
- independent work involves the study of individual topics of the discipline, which are made in accordance with the program for independent study, or were considered briefly;
- all tasks envisaged by the program must be completed within the prescribed period;
- if the applicant for higher education is absent from the classroom for a good reason, he presents the completed tasks during the independent preparation and consultation of the teacher;
- course work must be protected no later than a week before the start of the examination session;
- While studying the course, applicants for higher education must follow the rules academic integrity set forth in the following documents: "Rules of academic integrity of participants in the educational process of KhNADU" (https://www.khadi.kharkov.ua/fileadminZP_Standart/polooeniya/stvnz_67_01_dobroch_1.p_df), "Academic integrity. Verification of the text of academic, scientific and qualification worksplagiarism" (https://www.khadi.kharkov.ua/fileadminZP_Standart/pologeniya/stvnz_85_1_01.pdf), "Moral and ethical code of participants in the educational process of KhNADU" (https://www.khadi.kharkov.Ua/fileadmin/P_Standard/pologeniya/stvnz_67_01_MEK_1.pdf).
- in case of detection of the fact of plagiarism, the applicant receives 0 points for the task and must re-complete the tasks provided for in the syllabus;
- write-offs during tests and exams are prohibited (including using mobile devices). Mobile devices are only allowed to be used during online testing.

Recommended literature:

Certified distance course <https://dl.khadi.kharkov.ua/course/view.php?id=476>

Main

1. Labor protection: a textbook. Kharkiv: KhNADU, 2022.- 264 p.
2. Life safety and labor protection: a reference book. Textbook / Y. V. Buts, O. I. Bogatov, O. G. Zima, O. V. Kraynyuk, S. V. Minka -Kharkiv: KhNEU them. Semena Kuznetsya, 2020. – in 2 parts. Ch. 1. – 183 p.
3. Life safety and labor protection: a reference book. Textbook / Y. V. Buts, O. I. Bogatov, O. G. Zima, O. V. Kraynyuk, S. V. Minka -Kharkiv: KhNEU them. Semena Kuznetsya, 2020. – in 2 parts. Ch. 2. – 178 p.
4. Fundamentals of labor protection and life safety: reference book / Author. col.: O.V. Polyarus, O.V. Tretyakov, S.V. Minka, O.I. Bogatov. – Kh.: KhNADU, 2014. – 404 p.

Additional Sources:

- 1 File archive of the Department of MBZD KhNADU (<http://files.khadi.kharkov.ua/metodichni-kabineti.html>)
- 2 KhNADU Training Site (<https://dl2022.khadi-kh.com/course/view.php?id=1006>)
- 3 STL KhNADU (Kharkiv, Yaroslava Mudrogo Str., 25) [electronic resource] . (<http://library.khadi.kharkov.ua/>)

Developer
syllabus of the discipline



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