

**MINISTRY OF INTERNAL AFFAIRS OF UKRAINE
DNIPROPETROVSK STATE UNIVERSITY OF INTERNAL AFFAIRS**

FACULTY OF LAW

DEPARTMENT OF PHYSICAL EDUCATION

**PLANS OF SEMINARS (PRACTICAL CLASSES)
IN THE ACADEMIC DISCIPLINE
OCCUPATIONAL SAFETY**

Academic level Bachelor's degree

Specialty 073 Management

Educational program "Financial and economic security
and risk management"

Status of the academic discipline obligatory

Language of instruction English

for academic year 2020/2021

Plans presented and approved at the
meeting of the department
of Physical Education
minutes taken on
May 19, 2020 № 14

**Head of the Department of
Physical education**

Iryna SKRYPCHENKO

Occupational Safety // Plans of seminars (practical classes) in the academic discipline, full-time form of study. – Dnipro: Dnipropetrovsk State University of Internal Affairs, 2020. – 14 p.

AUTHOR(S): Vitaliy HRYBAN - Professor of the Department of Physical Education, Doctor of Biological Sciences, Professor

1. Topics of practical (seminar) classes

TOPIC 2. LEGAL AND ORGANIZATIONAL ISSUES OF LABOR PROTECTION. LEGISLATIVE PROVISION OF OCCUPATIONAL HEALTH AND SAFETY IN UKRAINE.

Seminar № 1 - 2 hours

Plan

1. Law of Ukraine "On labor protection". Basic principles of the state policy of Ukraine in the field of labor protection.
2. Guarantees of workers' rights to labor protection, benefits and compensation for difficult and harmful working conditions.
3. Labor protection of women
4. Labor protection of minors
5. Labor protection of disabled.
6. Responsibilities of employees to comply with the requirements of regulations on labor protection.
7. Types of labor protection instructions in production

Key notions, definitions and categories to be studied:: law, rights, obligations, safety instructions, production

Tasks for the independent work for Topic 2:

Prepare essays on the topic:

1. Guarantees of labor protection rights defined by the legal framework in your state. Responsibilities of the employer, the rights of employees.
2. Features of labor protection of women, minors and the disabled (on the example of your state).
3. Liability for violation of labor protection requirements. Training and instruction on occupational safety (on the example of your country).
4. Professional selection and its methodological support.
5. State supervision and public control over labor protection (comparison of European requirements and control in your country).

TOPIC 3. FUNDAMENTALS OF PHYSIOLOGY AND OCCUPATIONAL HYGIENE. MICROCLIMATE OF PRODUCTION PREMISES.

Practical lesson № 1-2 hours

Plan

1. Physiological bases of work. The main forms of human labor. Efficiency.

2. Energy costs for work. Ergonomics tasks to reduce energy consumption for work.
3. Why do people get tired. Human biorhythms, how they affect performance.
4. What changes in the human body occur during work.
5. The concept and main tasks of occupational health and industrial sanitation.
6. The microclimate of the production environment and its importance for the health of workers. Closed production cycles.
7. Chemical factors of the air in the work area. Protection of workers from the effects of air factors
8. Harmful substances, their classification, measures and means of protection of workers from the action of harmful substances.

Key notions, definitions and categories to be studied:: activity, work, monotopia, hypokinesia, fatigue, work area, harmful impurities, the maximum allowable concentration.

Tasks for the independent work for Topic 3:

Prepare essays on the topic:

1. Physiological bases of work. The main forms of human labor. Efficiency.
2. The microclimate of the production environment and its importance for the health of workers.
3. Chemical factors of the air environment. Measures and means of protection against harmful substances. The air of the production room.
4. Ventilation of industrial premises.
5. Lighting of production facilities. Types of lighting, the use of shadowless lighting.

TOPIC 4. ELECTRICAL SAFETY, ACCESSORIES AND MEANS ELECTRICAL SAFETY.

Practical lesson № 2-2 hours

Plan

1. Factors influencing the consequences of electric shock.
2. Characteristics of the conditions "clinical death", "biological death".
3. Medical care in case of electric shock.
4. Electrical hazard. Touch voltage, tap voltage. How to leave the area of electric current.
5. Measures and means of electrical safety.
6. Static and atmospheric electricity, protection against them.

Skills to be developed and skills to be acquired during the lesson:

In practice, apply standards and safety precautions when working with devices, equipment with power supply. Have practical first aid skills in case of electric shock

Adhere to sanitary and hygienic norms (humidity) and recommendations (serviceability of electrical networks) during work and rest.

Seminar № 2-2 hours

Plan

1. The concept of electrical safety. The effect of electric current on the human body.
2. Electrical injuries, types of electrical injuries, causes at work and at home.
3. Electric shock. Clinical, biological death.
4. Classification of premises by level of electrical hazard.
5. Nature, characteristics of static and atmospheric electricity. Sources of these types of energy.
6. Protective equipment and electrical protective equipment (grounding, zeroing).
7. What is the touch voltage, the step voltage? How to leave the electric zone?

Key notions, definitions and categories to be studied: electric shock, electric shock, contact voltage, crane voltage, static and atmospheric electricity.

Tasks for the independent work for Topic 4:

Prepare essays on the topic:

1. The impact of computers on human health.
2. Hygienic requirements for production facilities with computers.
3. Computer security requirements
4. Mode of work and rest of computer workers.
5. Methods of pre-medical care for victims of electric shock.

TOPIC 5. FIRE SAFETY

Practical lesson № 3-2 hours

Plan

1. The main causes of fires and their negative consequences. Characteristics of combustion.
2. Development of fire. Fire classes.
3. Causes of explosions during fires, their impact on the consequences of the event.
4. Dangerous and harmful factors formed during the combustion of various materials. What is their effect on the human body.

5. Evacuation of people from the premises in case of fire.
6. Organizational and technical measures and means of rescue from crowded objects.

Skills to be developed and skills to be acquired during the lesson: to be able to distinguish combustion processes, to know the classification of materials by flammability, methods of evacuation of people from the fire, to use fire prevention and extinguishing means, to know people's behavior during fires, use fire prevention.

Tasks for the independent work for Topic 5:

Prepare essays on the topic:

1. The main causes of fires and their negative consequences. Characteristics of combustion.
2. Development of fire. Fire classes. Dangerous and harmful factors of fire.
3. Categories of productions and premises according to explosion and fire danger.
4. Fire prevention and fire safety. Fire prevention system.
5. Fire protection. Primary fire extinguishers.
6. Evacuation of people from the premises in case of fire.

TOPIC 6. PATHOGENIC EFFECT OF PHYSICAL, CHEMICAL, BIOLOGICAL AND PSYHOPHYSIOLOGICAL FACTORS.

Practical lesson № 4-2 hours

Plan

1. Mechanical injuries, types of injuries and their characteristics. Injury assistance.
2. Influence on a human body of noise, sounds of various ranges. Noise protection.
3. The effect of vibration on the human body. Occupational diseases provoked by vibration. Vibration protection.
3. Chemical hazards, characteristics and effects on body systems.
4. The concept of MPC. Characteristics of different types of poisoning. Assistance to victims of poisoning.
4. Biological hazards (plant, animal), their impact on the human body and characteristics of action.
5. Means of protection against biological poisons, assistance to victims.
6. Pathogenic organisms that can cause human health disorders or death (helminths, simple parasites, viruses, bacteria).

7. Means of prevention against pathogenic organisms (creation of immunity).

Key notions, definitions and categories to be studied: state of injuries, type of injuries, injuries, noise, vibrations, electric current, radioactivity, ionizing radiation, radioactive radiation, electromagnetic field, chemicals, toxic substances, flammable liquids, biological factors, dosimetric devices, units of measurement, psychophysics wound, burn, fracture, cut, frostbite.

Skills to be developed and skills to be acquired during the class: to assess the state of injuries, type of injuries, damage, noise, vibration, electric current, radioactivity, ionizing radiation, radioactive radiation, electromagnetic field, chemicals, toxic substances, flammable liquids, biological factors, dosimetric devices, units of measurement, psychophysiological dangers, be able to assess the condition of the victim with injuries, burns, fractures, cuts, frostbite. Be able to provide pre-medical care to the victim

Individual assignments for Topic 6:

Prepare presentations on the topic:

1. Mechanical injuries, types of injuries and their characteristics.
2. Effects on the human body of noise and vibration.
3. Danger of different types of radiation.
4. Chemical and biological hazards, their impact and characteristics.
5. Providing assistance to victims of chemical and biological poisoning.

TOPIC 7. EMERGENCIES. CLASSIFICATION AND CHARACTERISTICS OF NATURAL, TECHNOGENIC AND SOCIO-POLITICAL DANGERS.

Practical lesson № 5 - 2 hours.

Plan

1. Natural hazards (natural disasters). Classification, causes, consequences.
2. Dangers of man-made origin. Urgent and rescue work.
3. Social and socio-political dangers: preventive work among the population.
4. Protection of the population in emergency situations: organization of the work of the emergency rescue staff.
5. The sequence of organization of actions of emergency services at the scene.

Skills to be developed and skills to be acquired during the lesson (if necessary - a list of documents that the program provides): Research of emergencies by different methods. Features of life safety in megacities, rural areas, etc.

Seminar № 7 - 2 hours.

Plan

1. Emergencies of military origin. Places for temporary stay of the population.
2. Combined emergency situations: characteristics, causes, consequences.
3. Urbanization and problems of life safety.
4. Organizational, technical and medical means of protection in emergency situations.
5. Organization of psychological and social assistance to the population in emergencies.

Skills to be developed and skills to be acquired during the lesson (if necessary - a list of documents that the program provides): Research of emergencies by different methods. Features of safety in megacities, rural areas, etc.

Tasks for the independent work for Topic 7:

1. Emergencies of military origin. Places for temporary stay of the population.
2. Combined emergencies: characteristics, causes, consequences.
3. Urbanization and problems of life safety (on the example of one state or world trends).
4. Organizational, technical and medical means of protection in emergency situations (on the example of Ukraine, a European country or your country).
5. Organization of psychological and social assistance to the population in emergencies (latest tools).

RECOMMENDED LITERATURE

Recommended literature for Topic 1:

1. Alli B. O. Fundamental principles of occupational health and safety /Benjamin O. Alli; International LabourOffice– Geneva: IL O, 2008. 221 p. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_093550.pdf
2. Friend M. A., Kohn J. P. Fundamentals of occupational safety and health. – Rowman & Littlefield, 2018.
3. Konceptija reformuvannja systemy upravlinnja ohoronoju praci v Ukrai'ni: rozporjadzhennja Kabinetu Ministriv Ukrai'ny vid 12 grudnia 2018 roku. № 989-r [Concept of Reforming the Occupational Safety and Health Management System in Ukraine: Order of the Cabinet of Ministers of Ukraine of December 12, 2018]. Retrieved from <https://zakon.rada.gov.ua>. [in Ukrainian]
4. Odarchenko, M., Odarchenko, A., Stepanov, V., Chernenko, Ya. (2017). Osnovy ohorony praci: pidruchnyk. [Basics of labor protection]. Harkiv: Styl-Yzdat [in Ukrainian].
5. Zakon Ukrainy Pro vnesennja zmin do Zakonu Ukrainy «Pro ohoronu praci» від 21 listopada 2002 roku. № 229-IV [Law of Ukrai'ny Pro introduction of the Law on the Law of Ukrai'ny «Pro ohoronu praci» of November 21, 2011]. Retrieved from <https://portal.rada.gov.ua>. [in Ukrainian].
6. ДСТУ 2293-99 «Охорона праці. Терміни та визначення основних понять
7. Конституція України

Recommended literature for Topic 2:

1. Alli B. O. Fundamental principles of occupational health and safety /Benjamin O. Alli; International LabourOffice– Geneva: IL O, 2008. 221 p. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_093550.pdf
2. Dembicka, S.V. (2016). Upravlinnja piznavalnoju dijal-nistju studentiv pid chas vyvchennja bezpeky zhyttjedijalnosti shljahom vprovadzhennja metodiv proektnogo navchannja [Management of students' cognitive activity in the study of life safety through the introduction of project-based learning methods]. Pedagogika bezpeky – Security pedagogy, 1, 53-58 [in Ukrainian]. <https://doi.org/10.31649/2524-1079-2016-1-1-53-58>
3. Dreval Y. D. et al. Fundamental principles of activity of international labour organization in occupational safety and hygiene. – 2020. URI: <http://repositsc.nuczu.edu.ua/handle/123456789/12023>
4. Kobyljanskyj, O.V., Dembicka, S.V.(2014). Pedagogichni umovy vykorystannja internet-tehnologij u procesi vyvchennja bezpeky zhyttjedijalnosti. Suchasni informacijni tehnologii ta innovacijni metodyky navchannja v pidgotovci fahivciv: metodologija, teorija, dosvid, problemy: zb. nauk. pr. [Modern information technologies and innovative teaching methods in training specialists: methodology, theory, experience, problems]. Kyiv-Vinnycja: TOV firma «Planer», 310-315 [in Ukrainian]
5. Kruzhilko O., Lysyuk M. Investigation of the global problems impact on occupational safety and health in UKRAINE //Labour protection problems in Ukraine. – 2019. – T. 35. – №. 2. – C. 3-7.

6. Kundiev Y. I., Nahorna A. M. The problem of the industrial traumatism in Ukraine //Journal of Ecology and Health. – 2010. – T. 14. – P. 253-259. <http://yadda.icm.edu.pl/baztech/element/bwmeta1.element.baztech-article-BAR8-0008-0008>
7. Lagutina I. Development of a national occupational safety and health programme in Ukraine: gender aspekt. – 2012. P.196-203
8. Nesterova, L., Luzan, P., Manko, V. (2012). Naukovo-metodychni zasady profesijnoi pidgotovky kvalifikovanyh robotnykiv v umovah jevrintegracii. [Scientific and methodological principles of professional training of skilled workers in the context of European integration]. Pedagogichna dumka – Pedagogical thought. Kyiv, 160 [in Ukrainian]
9. Nipialidi O., Vasylychshyn O. Current state of labour protection in Ukraine in the context of ensuring and innovative development //Actual problems of law. – 2020. – T. 1. – №. 1. – C. 164-169. <http://appj.wunu.edu.ua/index.php/apl/article/view/862>
10. Ridley J., Channing J. (ed.). Safety at work. – Routledge, 2008.
11. Rym O. Current Issues Of Legal Regulation Of Occupational Safety In Ukraine //Security As The Purpose Of Law. – 2015. – C. 216.
12. Stadnyk L., Yavon I., Panchenko I. Occupational radiation exposure of medical staff in Ukraine: results of individual monitoring by central dosimetry service in 1981-2000. – 2003. – №. STI/PUB--1145/CD.
13. Stellman J. M. (ed.). Encyclopaedia of occupational health and safety. – International Labour Organization, 1998. – T. 1.
14. Wooten E.W. An Encyclopedia Of Concepts In MRI Safety: A Reference For The MRSO, MRMD, and MRSE [Print Replica] Kindle Edition. 2019. 268 pages
15. Yates W. David. Safety Professional's Reference and Study Guide, Third Edition. Kindle Edition. 2020. 817 p.
16. Zarosylo V. et al. Legal regulation of occupational safety and health in the european union and ukraine: a comparative approach //Scientific Bulletin of National Mining University. – 2019. – №. 6.
17. Охорона праці (Законодавство. Організація роботи): Навч. посіб. / За заг. ред. к.т.н., доц. І. П. Пістуна. – Львів: «Тріада плюс», 2010. – 648 с.
18. Охорона праці (практикум): Навч. посіб. / За заг. ред. к.т.н., доц. І. П. Пістуна. – Львів: «Тріада плюс», 2011 – 436 с.

Recommended literature for Topic 3:

1. Arezes P. et al. (ed.). Occupational Safety and Hygiene. – CRC Press, 2013.
2. Friend M. A., Kohn J. P. Fundamentals of occupational safety and health. – Rowman & Littlefield, 2018.
3. Occupational Safety and Hygiene IV – Arezes et al. (Eds)© Taylor & Francis Group, London, 2016 77p. ISBN 978-1-138-02942-2.
4. Occupational Safety and Hygiene VI: Book chapters from the 6th International Symposium on Occupation Safety and Hygiene (SHO 2018), March 26-27, 2018, Guimarães, Portugal 1st Edition .Publisher : CRC Press; 1st edition (March 5, 2018). 634 pages
5. Postanova Kabinetu Ministriv Ukrainy«Деякі питання розслідування та обліку нещасних випадків, професійних захворювань і аварій на виробництві» від 30 листопада 2011 року. №1232 (зі змін)[Resolution of the Cabinet of Ministers of Ukraine “Some Issues of

Investigation and Accounting of Accidents of November 30, 2011). Retrieved from <https://zakon.rada.gov.ua> [in Ukrainian].

6. Systemy upravlinnja gigijenoju ta bezpekoju praci vid 2011-01-01 [Systemy hygiene management helps keep those hands clean of January 01, 2011] Vymogy: DSTU ONSAS 18001:2010 [Chynnyj vid 2011-01-01]. Kyiv, 10 [in Ukrainian]

7. Гігієнічні нормативи ГН 3.3.5-8-6.6.1-2002 «Гігієнічна класифікація праці за показниками шкідливості та небезпечності факторів виробничого середовища, важкості та напруженості трудового процесу». Затверджена Наказом Міністерства охорони здоров'я України від 27.12.2001 № 528.

8. ДСН 3.3.6.037-99 Санітарні норми виробничого шуму, ультразвуку та інфразвуку.

9. ДСН 3.3.6.042-99 Санітарні норми мікроклімату виробничих приміщень.

10. НПАОП 0.00-1.28-10 Правила охорони праці під час експлуатації електронно-обчислювальних машин. Наказ Держгірпромнагляду від 26.03.2010р. № 65

Recommended literature for Topic 4:

1. Alton Joseph, Alton Amy. The Survival Medicine Handbook: A guide for when help is NOT on the way. Publisher : Doom and Bloom, LLC; 2nd edition (January 6, 2014). 647 pages

2. First Aid Training : First on the Scene - Student Reference Guide Saint John Ambulance, 1999 - CPR (First aid).

3. Inlander Charles B., Norwood Janet Worsley, The People's Medical Society. First Aid & Safety For Dummies. Paperback – November 22, 1999. 330 pages

4. Mansdorf S. Z. Handbook of Occupational Safety and Health, Third Edition. John Wiley & Sons, Inc. 2019. Print ISBN:9781118947265 |Online ISBN:9781119581482

5. Occupational First Aid. A Reference and Training Manual Level 2. 2018. Edition Library and Archives Canada Cataloguing in Publication Data. file:///C:/Users/8E9B~1/AppData/Local/Temp/occupational_first_aid_reference_training_manual_level_2-pdf-en.pdf

Recommended literature for Topic 5:

1. Forgey M.D. The Prepper's Medical Handbook. Kindle Edition, 2020. 308 p.

2. Пожежна безпека. Нормативні акти та інші документи: У 4-х т. – К., 1997. Occupational First Aid. A Reference and Training Manual. 2018. Edition Library and Archives Canada Cataloguing in Publication Data. file:///C:/Users/8E9B~1/AppData/Local/Temp/occupational_first_aid_reference_manual-pdf-en.pdf

3. Ridley J., Channing J. (ed.). Safety at work. – Routledge, 2008.

Recommended literature for Topic 6:

1. Friend M. A., Kohn J. P. Fundamentals of occupational safety and health. – Rowman & Littlefield, 2018.

2. Ridley J., Channing J. (ed.). Safety at work. – Routledge, 2008.

3. Arezes P. et al. (ed.). Occupational Safety and Hygiene. – CRC Press, 2013.

4. 2. Friend M. A., Kohn J. P. Fundamentals of occupational safety and health. – Rowman & Littlefield, 2018.

5. Occupational Safety and Hygiene IV – Arezes et al. (Eds)© Taylor & Francis Group,

Recommended literature for Topic 7:

1. Friend M. A., Kohn J. P. Fundamentals of occupational safety and health. – Rowman & Littlefield, 2018.
2. Joel M. Haight. Hazard Prevention through Effective Safety and Health Training. Paperback – February 4, 2013

QUESTIONS FOR THE FINAL ASSESSMENT

1. Formation of the system of life safety by the Constitution of Ukraine.
2. Assessment of the self-healing potential of the atmosphere.
3. Photosynthesis and its impact on human food.
4. Conditions for creating the greenhouse effect of the Earth.
5. Human impact on water resources.
6. The effect of electricity on the human body.
7. Analysis of the system of public safety management
8. Characteristics of bacteriological agents and preventive measures.
9. The main directions for reducing pollution of the atmosphere, air, land and water resources.
10. The main tasks of human life.
11. Conditions for the creation and destruction of the ozone layer.
12. Characteristics of means of collective and individual protection.
13. Exhaustive resources and their impact on the expansion of national production.
14. Analysis of sources of natural and man-made radiation.
15. Weber-Fechner law.
16. Characteristics of materials according to the degree of their ignition
17. To reveal the meaning of the concepts "fear", "reasonable fear", "panic".
18. Characteristics of man as an element of the biosocial system.
19. The influence of some psychophysiological factors on the creation of a criminogenic situation, injuries.
20. Biorhythms - a potential source of individual risk of consequences.
21. Estimation of natural and man-made radiation sources.
22. The impact of biorhythms on injuries and accidents in various sectors of the economy of Ukraine.
23. Potential sources of occupational hazards and their consequences.
24. Assessment of the self-healing potential of the hydrosphere.
25. The main criteria for human injury in air pollution by harmful substances.
26. Protection of the population in case of accidents of chemically dangerous objects
27. Assessment of human impact on exhaustible resources.
28. Characteristics of atmospheric electricity, lightning protection.
29. Organization of life support of the population in emergency situations.

30. Elimination of the consequences of emergencies
31. Law of Ukraine "On labor protection" and its main provisions
32. The Law of Ukraine "On Compulsory State Social Insurance against Accidents at Work and Occupational Diseases That Caused Disability" and its main provisions.
33. Code of Civil Protection of Ukraine and its main provisions.
34. Law of Ukraine "On Ensuring Sanitary and Epidemic Welfare of the Population" and its main provisions.
35. Analysis of the system of public safety management. The concept and subject of labor protection in the industry.
36. Social and economic importance of labor protection.
37. Legal significance of labor protection
38. The object of labor protection, its components, phases of development and structure.
39. Tasks in the field of labor protection.
40. Working conditions. Classification by the action of harmful and dangerous factors.
41. Law of Ukraine "On labor protection" and its main provisions
42. The Law of Ukraine "On Compulsory State Social Insurance against Accidents at Work and Occupational Diseases That Caused Disability" and its main provisions.
43. Code of Civil Protection of Ukraine and its main provisions.
44. Law of Ukraine "On Ensuring Sanitary and Epidemic Welfare of the Population" and its main provisions.
45. Law of Ukraine "On the Use of Nuclear Energy and Radiation Safety" and its main provisions.
46. Law of Ukraine "On Equality of Rights and Opportunities for Women and Men" and its main provisions.
47. International standards in the field of labor protection. Social partnership as a principle of legislative and normative provision of labor protection. The principle of solidarity and public opinion as the basis of social policy on health and industrial safety.
48. Management system of labor protection in the industry (on the example of the Ministry of Internal Affairs of Ukraine).
49. Plans for localization and elimination of emergencies and accidents at the enterprise.
50. The purpose and objectives of the accident investigation.
51. Establishing a connection between an accident and production.
52. Investigation and accounting of chronic occupational diseases and poisonings at work.
53. The main causes of accidents, occupational diseases and accidents.

54. Basic measures for the prevention of injuries, chronic occupational diseases and accidents.
55. Compliance with fire safety requirements during the design, construction and reconstruction of facilities in the field of law.
56. Evacuation of personnel in case of fire.
57. Fire extinguishers. Features of firefighting in libraries, archives.
58. Fire alarm and automated fire extinguishing systems
59. Accident insurance and its significance.
60. State supervision over the state of labor protection. Public control over the state of labor protection.
61. International cooperation in the field of labor protection. The main areas of cooperation.
62. Safety requirements for equipment placement and maintenance of workplaces.
63. Requirements for sanitary control over the air of the working area.
Requirements for individual and collective protection.
64. Features of electrical safety measures at enterprises in the industry.
65. Safety requirements for production and ancillary premises in the field of law.
66. Requirements