

FUNDAMENTALS OF OCCUPATIONAL SAFETY AND HEALTH

COURSE SYLLABUS

Code and name of specialty	073 – Management	Institute	Institute of Education and Science in Mechanical Engineering and Transport
Program name	Management of Organizations and Administration / Business Administration	Department	Department of Occupational and Environmental Safety
Type of program	Educational and Professional	Language of instruction	English / Ukrainian

LECTURER

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PhD of Psychology, associate professor. Department of Occupational and Environmental Safety.

The author of more than 100 scientific and educational publications. The lead lecturer of the following courses: «Psychology of work and its safety», «Fundamentals of Occupational Safety and Health», «Occupational safety in professional activities»

Course general information

Summary	The course "Fundamentals of Occupational Safety and Health" provides information on the hazards of man-made, anthropogenic and natural origin, means to prevent or mitigate them in order to prevent accidents, occupational diseases, accidents and professional longevity of future specialists and long life in society, harmful and dangerous factors and risks of their influence of dangerous human behavior, legal and organizational bases of labor protection, requirements to the conditions of working environment, fundamentals of electric and fire safety.
Course objectives	The objective of the course is to acquire the student's competencies, knowledge, skills and competences to pursue a profession in the field of legal and organizational issues of occupational safety in the area of industrial sanitation, safety and formation of outlook on the priority of protection of life and human health in relation to the results of labor. Competencies are determined by the ability of students to apply knowledge in practical situations, the ability to apply and increase their knowledge on man-made environmental hazards in the system "man - environment", the ability to identify legal and organizational measures to ensure occupational safety and to be able to justify and ensure full implementation of personal security measures.
Types of classes and control	Lectures, laboratory classes, practical classes, consultations. The course ends with a final credit.
Term	6

Student workload (credits) / Type of course	5 / Optional	Lectures (hours)	12	Workshops (hours)	24	Self-study (hours)	114
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Program competences	GC02. The ability to maintain and to increase the moral, cultural, scientific values and to increase achievements of society by understanding the history and patterns of data domain development, its place in the overall knowledge system about nature and society and in the development of society, techniques, and technologies, to use different types and forms of motor activity for recreation and
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	<p>healthy lifestyles.</p> <p>GC 15. The ability to act on the basis of ethical considerations (motives).</p> <p>SC 06. The ability to act with social responsibility and conscience.</p> <p>SC13. To understand the principles and rules of law and to use them in a professional activity.</p>
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Teaching results	Teaching methods	Evaluation methods (current assessment standards - CAS, final assessment standards- FAS)
LO 02. To keep moral, cultural, scientific values and to increase achievements of society, to use different types and forms of effective activity for maintaining a healthy lifestyle..	Interactive lectures with presentations, discussions, laboratory and practical classes, the method of feedback from students, problem-based learning, laboratory research.	Written individual tasks (CAS), assessment of knowledge in practical and laboratory classes (CAS), problem and game situations (CAS), online tests (CAS), credit (FAS).
LO 08. To apply management methods to ensure the effectiveness of the organization.	Interactive lectures with presentations, discussions, laboratory and practical classes, the method of feedback from students, problem-based learning, laboratory research.	Written individual tasks (CAS), assessment of knowledge in practical and laboratory classes (CAS), problem and game situations (CAS), online tests (CAS), credit (FAS).
LO 14. To identify the stress reasons, to adapt yourself and members of the team to a stressful situation, to find means to its neutralization.	Interactive lectures with presentations, discussions, laboratory and practical classes, the method of feedback from students, problem-based learning, laboratory research.	Written individual tasks (CAS), assessment of knowledge in practical and laboratory classes (CAS), problem and game situations (CAS), online tests (CAS), credit (FAS).

ASSESSMENT AND GRADING

Ranges of points corresponding to grades	score (points) for all types of learning activities	ECTS grading scale	The national grading scale	Allocation of grade points	100% Final assessment as a result of Final test (40%) and Continuous assessment (60%). Continuous assessment: <ul style="list-style-type: none">• 30% practical assessment (reports at seminars);• 10% individual assignment (presentation in power point)• 20% term control (online tests)
	90-100	A	excellent		
	82-89	B	good		
	74-81	C			
	64-73	D	satisfactory		
	60-63	E			
	35-59	FX	Unsatisfactory (with the exam retake option)		
	0-34	F	Unsatisfactory (with mandatory repetition of the course)		

Course policy	Students are expected to attend classes regularly, to get to class on time and stay for the duration of the class. In the case of absence, students will be required to submit all assignments to make up for the missed classes. Students are also expected to come to class having read all the required material and being ready to productively participate in the class discussions. Written assignments should be submitted before the specified deadlines.
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COURSE STRUCTURE AND CONTENT

Lecture 1	Life safety - as a concept. Danger. Risk - as an assessment of danger.	Workshop 1	Quantitative risk assessment	S e l f - s t u d y	The connection between Safety of Life Course and practical life experience. The main provisions of National Security Program of Ukraine concerning life safety and health of a person. Current conditions of life safety.
Lecture 2	Fundamentals of safety functioning "man - machine - production environment". Psychology and safety.	Workshop 2	Assessment of human personal psychological features which affect working safety.		Selection and composition of management bodies and ways to display information. Information theory basics. Impact of environmental factors on the safety of activities in the system "man - machine".
Lecture 3	The concept of labor protection. Purpose and object of study. Subject and objectives of the course. Analysis and prevention of occupational injuries.	Workshop 3	Investigation of an accident at work.		Regulation of labor protection in the collective agreement. Basic organizational and technical measures to prevent occupational injuries and diseases.
Lecture 4	Work area air. Sanitary and hygienic requirements to air conditions. Meteorological working conditions.	Workshop 4	Research of microclimate in industrial premises.		General information about ventilation. General measures and means to prevent air pollution at work and protect workers.
Lecture 5	Lighting in industrial premises. Types and systems of industrial lighting.	Workshop 5	Research of lighting in industrial premises with natural light.		The effect of lighting on an employee's ability to work. Injury associated with insufficient lighting in the workplace. Control of noise and vibration parameters, measuring devices.
Lecture 6	Vibroacoustic factors of the industrial environment.	Workshop 6	Research of industrial noise.		Electromagnetic radiation. Characteristics of electromagnetic fields. Standardization of electromagnetic radiation.
Lecture 7	General information on electrical safety. General information on fire safety.	Workshop 7	First aid provision in case of electric shock.		Measures to prevent electric shock. The main signs of electrical safety at the enterprise. Classification. Basic fire extinguishers. Primary extinguishing media.
Lecture 8	Emergency situations in the time of peace and war, their impact on Ukrainian population life safety. Protection of the population in emergency situations.	Workshop 8	Self- and mutual help in emergencies.		Characteristics of dangerous geological processes and phenomena. Hazardous chemicals. Radiation and fire safety. Basic fire extinguishers. Primary extinguishing media.

Literature

Main	<ol style="list-style-type: none"> 1. The basics of occupational health and safety: manual / V.V. Berezutskiy (and others); editor V.V. Berezutskiy; National Technical University "Kharkiv Polytechnical Institute " - Kharkiv: NTU KPI, 2018. 553 pages. 2. Life safety. Tutorial. / Edited by V.V. Berezutskiy;/ Kharkiv. Fakt, 2005 - 382, p.3 Workshop "Life safety": for high school students / edited by professor V.V. Berezutskiy. Kharkiv: Fakt, 2005 - 168 pages. 3. The basics of health safety: tutorial: / edited by V.V. Berezutskiy. - Kharkiv: Fakt, 2005. - 480 pages. 4. Zhidetskyy V.S Fundamentals of labor protection. Textbook. - Lviv: Poster, 2005. - 319p. 5. Fundamentals of Occupational Safety: A Textbook. 2nd edition / KN Tkachuk, M.O Khalimovsky, V.V Zatsarnyi and others. - K .: Basis, 2006 - 448 p. 6. Handbook of labor protection at an industrial enterprise / K. N. Tkachuk, D.F. Ivanchuk, R.V. Sabarno, A.G. Stepanov. - K .: Technique, 1991.-285p. 7. Occupational health and safety management systems Requirements with guidance for use.. BS ISO 45001:2018. 8. Occupational health and safety management — General guidelines for safe working during the COVID-19 pandemic. ISO/PAS 45005:2020. 9. European Community legislation on safety and health at work: "European Agency for Safety and Health at Work" https://osha.europa.eu/en/legislation. 	Additional	<ol style="list-style-type: none"> 1. Law of Ukraine "On Occupational Safety" - in the wording of 27.12.2019, grounds - 341-IX 2. SIT 3.3.6.042-99 Sanitary standards of the microclimate of industrial premises. - K., 2000. 3. DBN B.2.5-28-2018. Engineering equipment of buildings and structures. Natural and artificial lighting. - K .: Minbudstroy, 2018.-80s. 4. DSN 3.3.6.037-99 Sanitary standards for industrial noise, ultrasound and infrasound. - K., 1999. 5. DSTU GOST 12.1.012: 2008 SBBP. Vibration safety. General requirements. Introduction 01.02.2009. 6. PUE-2017. Rules of arrangement of electrical installations. Orders of the Ministry of Energy and Coal Industry of Ukraine from 30.07.2015 № 478, from 30.07.2015 № 479, from 23.06.2015 № 394, from 31.07.2015 № 480. 7. DSTU 12.1.004-97 SSBT. Fire safety. General requirements. - Enter. 01.07.07. 8. DSTU B B.1.1-36: 2016 Determination of categories of premises, buildings and exterior installations by fire and fire hazard. Order of the Ministry of Regional Construction of Ukraine from 15.06.2016 № 158 from 01.01.2017. 9. Laboratory Workshop on Fundamentals of Occupational Safety \ Ed. VV Berezutsky. - Kharkiv: Fakt, 2005. - 348 p.
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Academic integrity

Students are expected to adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI".

The content of this syllabus is consistent with the course "Fundamentals of Occupational Safety and Health"